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ORGANIZATIONAL RESTRUCTURING OF MANADO CITY GOVERNMENT

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ABSTRACT

Organizations or institutions are basically tools or means of acting to achieve a common goal. Because as a tool, then when there is a change in the goals to be achieved, the organization must adjust to the demands of the change. The form of adaptation of an organization or institution can be done with an institutional development approach through organizational restructuring that is adaptive to these changes. This study offers an overview and analysis of the restructuring process carried out on Manado City Government so that it can create an effective and efficient organization in presenting public services. By using a qualitative approach, this research is intended to find out the need for restructuring in Manado City Government. The results of the study show that, if the restructuring of public organizations is initiated to improve public services, the approach of poor structure and rich functions in the structure of public organizations will improve the performance and work productivity of public organizations. In addition, the regional government organizations is an answer to any changes, is a complex strategy, aimed at changing the beliefs, attitudes, values and organizational structures in order to have the ability to advance knowledge of technology, markets and new challenges.

KEY WORDS

Restructuring, public organization, public service, organizational change.

The long process of reforming the government system in Indonesia, led to changes in the system of government, which was initially a centralized government system become a decentralized government system. This change is related to aspects of philosophy, the theory and principles of governance to be achieved. This change also gives an opportunity for regions to regulate their own households widely and responsibly, known as regional autonomy. This regional autonomy was held based on Law No. 22/ 1999 about Regional Government, which was subsequently revised with the emergence of Law No. 32/ 2004 and Law No. 12/ 2008 about Second Amendment to Republic of Indonesia Law No. 32/ 2004 concerning Government Region, as well as Law No. 23/ 2014 concerning Regional Government.

From the construction of Articles 18, 18A and 18B in Chapter VI of the 1945 Constitution, Law No. 32/ 2004 and Law No. 23/ 2014 concerning Regional Government has a purpose, where the granting of regional autonomy is to increase welfare, equitable development and the results and to increase the utilization of the regional potential optimally and integrated in order to increase people's welfare; promoting the initiative and active participation of the community in the implementation of regional autonomy widely, real and responsibly, as well as strengthening national unity and integrity, improving public services and regional competitiveness. Regional autonomy as a form of implementation of the principle of decentralization in administering government which implemented by the government is the answer to the demands of the community. The regional government can implement its function to regulate and manage regional authority based on the interests of the local community so that the implementation of the functions of the government can be

implemented properly, then the regional government needs an effective and efficient regional apparatus organization or Regional Work Unit (Satuan Kerja Perangkat Daerah/SKPD) as an element or part of the bureaucracy. The appearance of a large bureaucracy will have an impact on consuming a lot of regional resources, there is no uniformity, and this phenomenon has been widely seen in the practice of bureaucracy both at the central and regional levels. This should be adjusted to regional needs and community needs, so that organizational restructuring is needed.

Restructuring is implemented to prepare and reorganize all organizational resources and direct them to achieve a high level of competitiveness in a dynamic and competitive environment (Köper and Richter, 2014). Organizational restructuring in improving organizational performance in Manado city government has not yet thoroughly touched on improving the organizational structure of the regional apparatus. If the restructuring is implemented in accordance with local interests and the aspirations of the community, an ideal regional organizational structure will be formed in accordance with local conditions which can ultimately improve organizational performance. In implementing restructuring, the regional government is faced with the problem of rearranging the organizational structure, the amount of costs incurred in the preparation of new structures in accordance with the new regulations. This is in line with Gani (2013), that the derivisation regulations that have been established then the Regional Apparatus must arrange programs that become the elaboration of the vision and mission of the Regional Government in accordance with their respective main tasks and functions and compile the Accountability Performance of Government Agencies, Restructuring is implemented by downsizing and rightsizing, namely Downsizing echelon IVa, Office Merger, Office Merger, Body Formation, and Office Formation.

Based on the observations of the researchers, the reason for the restructuring needed in the Manado City Government is to optimize the bureaucracy that is too large and the resources of apparatus that are less professional, provide an alternative solution to the complexity of problems in the city of Manado and conduct organizational restructuring to improve performance. From the description of the phenomena that have been explained, restructuring is implemented so that organizations survive in the face of turbulent and uncertain environmental changes (Daft, 1992), this paper emphasizes several research issues that focus on the formulation of problems regarding the need to restructure the organization, factors that influence the restructuring and restructuring model that are effective in improving the performance of Manado City Government organization.

LITERATURE REVIEW

Organizational restructuring in a very narrow sense includes aspects of organizational performance, operational cooperation, work systems and procedures and delegation of authority and autonomy. While organizational restructuring in a broad sense, covers all aspects of the company that greatly affect the productivity of the company, which includes human resources, financial resources, and other resources including facilities and infrastructure. The concept of restructuring according to Gouillart and Kelly (1995) is part of an organizational transformation called The Four R's Transformation (Reimagine, Reform, Resist and Recreate).

Associated with the development of management science as stated by Savage (1996), demands for restructuring can be said to be the embodiment of the fifth generation of management, namely management based on dynamic teaming, knowledge networking, cross border or out of board, and virtual enterprises. All of that leads to an agreement that managing the organization in modern times like today is no longer possible to rely solely on conventional techniques such as mechanistic structures and convoluted command lines. On the contrary, organizations must be treated flexibly, enlarging delegation of authority, spurring the roles and responsibilities of functional staff, and having a spend on control that is not too long. In implementing the restructuring policy according to Ibrahim (2018) states

that the approach used in organizational restructuring policies is the system dynamics method.

Constraints faced in restructuring come from internal & external organizations. The impact of internal & external changes that are difficult to anticipate, in time will bring the organization to a critical point that does not show optimal performance and is unable to provide quality services as expected by the community. For this reason, a region needs to grow new energy by restructuring so that the region can continue in advance and survive in the future.

In this connection, according to Mintzberg (1979) there are five main parts forming the structure, including: The operating core, The strategic apex, The Middle line, Technostructure, The support staff. Mintzberg's theory of organizational structure can be seen in figure 1 below:

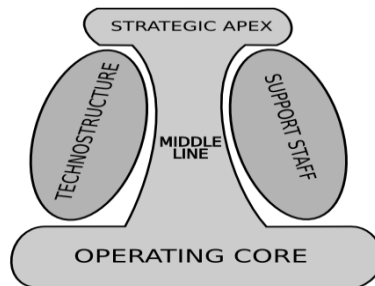


Figure 1 – Main Structure Forming Sections (Source: Mintzberg, 1979)

Noting the figure above, Mintzberg (1979) describes each of the following five organizational parts:

- The Strategic Apex. Is the top level manager, who is given overall responsibility for the organization (called the president, supervisor, or etc), and several other top level managers who pay attention to global matters, including those who provide direct support to top managers, namely secretaries, assistants and so on. The strategic apex is responsible for ensuring an organization carries out its mission and fulfills the needs of the people who control or against people who have no power over the organization (owners, government agencies, employee unions, pressure groups). Regarding the size of the organization with this coordination mechanism, it depends on the managers of strategic Apex and the middle line that influence;
- The Middle Line. The managers are the liaison between the operating core and strategic apex. This chain runs from the senior manager under the strategic apex to the first line supervisor, who has direct authority over the operating core, and forms a coordination mechanism called direct supervision;
- Technostructure. Analysts who have the responsibility to implement certain forms of standardization in the organization. These analysts come from the workflow of operations that design, plan, change, or train the people who do it, but they don't do it themselves. Thus technostructure is effective only when it can use analytical techniques to make other people's work more effective;
- The Support Staff. It is people who fill the staff unit, which provides indirect support services to the organization. Support staff are most often included together with technostructure and given authority as staff who advise the management. But these support staff are empirically different from the technostructure, they do not pay attention to standardization and cannot impose the advice given (although they might do some things too);
- The Operating Core. It is employees who carry out basic work that produces products and services, who called as an operator. The operator performs four main functions, namely: (1) getting input for production; (2) transforming input into output. Some organizations transform material by turning into finished goods, while others transform individual parts together into complete units; (3) distribute output, for

example by selling and physically recording what goes into the transformation process; (4) provide direct support to input, process and output functions, for example by carrying out maintenance of machine operations and raw material inventory. The operating core is a protected part of the organization, by standardizing.

According to Bennis and Mische (1995), leadership is included in the main element of restructuring. Effective and visible leadership, means that leaders who carry out restructuring must have a number of skills and abilities such as creativity, an influential vision, in-depth knowledge of the business in the company, and good character and careful consideration. Bennis and Mische (1995) propose five steps of restructuring, namely: The first step is to create a vision and set goals, step two, strive for benchmarking and define success. The third step is to innovate the process, the fourth step is transforming the organization, the fifth step is monitoring the restructured process.

To be able to achieve the expected synergy, the reengineering process is pursued through four steps, namely: 1) Determining the desired needs and or goals; 2) Making a plan; 3) Implementation of the plan; 4) Program monitoring (Obolensky, 1996). Each stage, restructuring has different goals, targets, tasks and final results. In each stage there is a process group, which is a combination of work steps, individual tasks, work results and formal delivery. Each work step can be expanded, deleted or adjusted to meet the unit requirements of the organization and the overall restructuring project.

Changes and processes of change are usually carried out by people through a focus on organizational change. Organizations that can make changes include public companies, in government bodies, charities or other types of institutions. According to Potts and LaMarsh (2004) that "Change is a shift from the present state of an organization to a desired condition in the future". The change from the present situation is seen from the point of view of structure, process of people and culture. Brooten (1978) states that change is a process that causes changes in individual or institutional behavior patterns (Wibowo, 2008).

There are four models of approaches in management change (Davidson, 2007), namely:

- Rational Approach – Empirical. The approach that will be taken uses rational and empirical considerations. It is assumed that the changed target will accept changes when accepting consideration to change. There needs to be good and effective communication regarding incentives or results that will benefit them if the change is successful. They will make changes not because they are forced, afraid or go along without being involved and apathetic;
- Normative Approach – Re-educative. The approach used is to provide re-education regarding the values and norms of the need for change. People will change because of a need. It takes a long time to make changes;
- Power Approach – Coercive. This approach is basically compliance, so it uses the leadership. This approach is effective if the employee recognizes the expertise and validity of the party exercising power. Need leaders who are firm, fair and able to protect subordinates;
- Environmental Approach – Adaptive. The basic approach to the environment is the ability to adapt to the latest environment or situation.

In essence human life and organization are covered by continuous change. On the one hand because of the existence of external factors that encourage change, on the other hand, change is actually felt as an external need. Therefore, change needs to be understood to reduce the pressure of resistance to change. Resistance is natural and can be overcome.

Improved organizational performance can be determined by measuring the performance of the organization. This is needed in the application of management concepts to measure the effectiveness and efficiency of managing all organizational resources in achieving goals. Organizations can achieve good performance if all organizational unit activities work integratively based on mutually agreed vision and mission. In the government field, the importance of the organization's vision and mission is also needed, as stated by Osborne and Gaebler regarding the superiority of government driven by mission (Osborne and Gaebler, 1995).

Governments that have entrepreneurial spirit prioritize the realization of vision (goals) and mission (goals), because in this way the administration of government will be more efficient, effective, innovative, flexible, and the workers will have a higher enthusiasm to realize their goals. This high spirit can be realized because the vision and mission of the organization have been clearly defined, then the implementation is handed over / delegated to organizational units with clear work procedures, and supported by the availability of adequate funds and employees (Osborne and Gaebler, 1995).

As part of the Government Agency Performance Accountability System, performance measurement plays a very important role. Performance accountability of government agencies cannot be accounted for if it is not equipped with information about the results that have been obtained. While the results obtained by each government agency, its performance must be measured to the extent of its achievement through performance measurement (Sudirman & Widjanarko, 2004).

James B Whittaker (in Sudirman & Widjanarko, 2004) defines Performance Measurement as a management tool used to improve the quality of decision making and accountability. Furthermore, it is said that performance management as a strategic process is used to assess the achievement of the organization's strategic goals and objectives. According to Whittaker, a key element of the performance measurement system consists of:

- (1) Planning and Setting Objectives;
- (2) Relevant Size Development;
- (3) Formal reporting of results;
- (4) Use of information.

Performance measurement is not intended to act as a mechanism to give reward / punishment, but performance measurement serves as a communication tool and management tool to improve organizational performance. Performance measurement in government is not a new activity. Each department, work unit and task implementation unit has been programmed to deliver information in the form of periodic reports (quarterly / semester / yearly) for the implementation of their main tasks and functions.

METHODS OF RESEARCH

This study includes qualitative research with a basic naturalistic principle with the object of the Manado City Government Organizational Restructuring research with the consideration that the Manado City Government has made a relatively large government organizational structure change as a consequence of the implementation of regional autonomy based on Law No. 32/ 2004 concerning Regional Government and Regulations Government No. 41/ 2007 concerning Regional Device Organization Guidelines, Government Regulation No. 38/ 2007 concerning Division of Government Affairs, Provincial Government, and Regency / City Regional Government, and Minister of Home Affairs Regulation No. 57/ 2007 concerning Technical Guidelines for Structuring Regional Device Organizations. This is one of the requirements desired by a study of organizational restructuring in improving organizational performance in Manado City Government.

Through a qualitative approach, researchers are expected to be able to fully and comprehensively describe the phenomenon under study as described in the focus of the study, so that in the end it can answer the problems formulated and underlie the use of qualitative approaches (Miles & Huberman, 2014). The informants in this study were the Policy Formulator (Mayor); Regional Secretary; Assistant 1,2,3; Bureaucrats; Regional House of Representatives Members; Regional Government Observer, Academician; Community leaders, NGO leaders, media groups and other external groups and staff at the Restructuring Policy Formulation Institution who were involved. Procedures and data collection techniques, the writer make observations, in-depth interviews and documentation. Furthermore, in measuring the validity and analysis of data in this qualitative study, researchers used interactive models from Miles, Huberman and Saldana (2014), namely data collection, data reduction, data presentation and subsequent conclusions.

RESULTS AND DISCUSSION

Manado City Government Organization Restructuring Process. The Manado City Government organization restructuring process, which begins with an understanding of its mandate and mission as a public organization, examines its organizational environment, and changes organizational structure by adding new organizational units within the framework of improving public service performance is a strategic process for Manado City Government in maintaining the effectiveness of existence and its function as a public organization. However, the quality of apparatus resources, laws and regulations, public desires, and fostering economic resource management, are factors that influence organizational restructuring in improving the performance of public organizations (Suyono, 2002).

As is known, that public organizations or institutions such as Manado City Government are basically tools or means of acting for the state or government to carry out their duties, namely to improve the welfare of the community through the provision of public services. As a tool to achieve goals, the existence of Manado City Government organization must always refer to the mandate that must be carried out, the mission that must be actualized, and adaptive to face the environmental changes. Therefore, the restructuring that took place in Manado City Government organization must be well planned if it wants a change in the performance of its organization in a better direction. Mandates are demands, norms, rules, directives, mandates, as well as formal and informal tasks that will be carried out by the organization. Before an organization can define its mission and values, it must be clearly known what needs to be done and not done by external authorities. This requirement may be codified in law, constitution, articles about organization, or charter (Bryson, 1988).

The importance of understanding the mandate and mission of the organization in restructuring regional / municipal government organizations, also emphasized by the Apparatus Bureau (2008) that institutional arrangements, organizations are based on clear vision, mission and strategy. With a clear vision and mission, an organization that is truly in accordance with the demands of needs can be prepared, especially able to balance the ability of the organization's resources with the real needs of the community and the operations set out in the strategic plan.

Minor Proposition 1 "If the process of restructuring public organizations does not begin with an understanding of the mandate and mission of the organization, organizational restructuring will have an impact on the weak work productivity of the organization".

Analysis of the environmental conditions of the organization is also important in the process of restructuring public organizations, such as Manado City Government, both the internal and external environment of the organization. Internal environment is a factor that shows the situation and conditions experienced or that occur within an organization. Analysis of internal environmental factors is intended to identify strengths and weaknesses of an organization. According to Higgins (Salusu, 1996), strength is a situation and internal capabilities that are positive, which allows the organization to have a strategic advantage in achieving its goals, while weakness is a situation and internal incompetence which results in the organization unable to achieve its goals. These two internal factors influence each other. If the weakness is very dominant, then there is a possibility that the strength of the organization will turn out to be a weakness. Conversely, existing strengths can be used to improve or overcome a weakness. Manado City Government organization restructuring policy has still revolved around the addition and elimination of organizational structure aspects. As a public organization, Manado City Government is a state tool to serve the public interest without being oriented to profit seeking. Therefore, along with the demand for more effective services and efficiency from the public, the existence of public organizations must be adaptive, creative, and innovative. This means that the institutional development of public organizations is a demand. The form of self-adjustment of an organization or institution can be done with an institutional development or restructuring approach.

Minor Proposition 2 "If the restructuring process of a local government organization does not begin with an understanding of the organizational structure, then the restructuring

of regional government organizations will not have an impact on increasing the work productivity of the organization".

In order to respond and implement the granting of regional autonomy, the restructuring of regional government organizations must be based on considerations which include achieving poor structure but rich in functions towards the efficiency of the performance of the regional apparatus themselves, absorption of all personnel in the organizational structure so that the success and avoidance of termination of employment, increases the responsibility of regional governments that have implications for improving regional performance (Supriyono, 2007). Based on the results of a discussion on the Development of Manado City Government Organizational Functions, the minor propositions can be formulated as follows:

Minor Proposition 3 "If the process of restructuring local government organizations does not begin with an understanding of the development of organizational functions, the process of restructuring local government organizations is less supportive of the main tasks and functions of the organization".

Supporting Factors and Restructuring Obstacles in Manado City Government. The quantity and quality of human resources (State Civil Apparatus/ASN) in Manado city government are still considered to be less supportive in achieving the objectives of Organizational Restructuring in Manado City Government. In the context of human resources, after the restructuring process, it is necessary to transfer another employee to another Regional Work Unit whose duties and authority are transferred. The willingness of the Regional Head to make changes to the organizational structure of Manado City Government, both by adding and removing organizational units and the attitude of approval and rejection of some officials within Manado City Government organization are factors that are supporting and inhibiting the restructuring of regional government organizations. Organizational member support for organizational restructuring usually occurs when organizational restructuring policies provide opportunities for new positions to emerge within the organization. But the opposite attitude, namely the rejection of organizational members will occur if the restructuring policy threatens the loss of position or position of members of the organization. Therefore, in the restructuring of regional government organizations, the existence of human resources is a variable that can affect change in public service organizations (Landau, 1993).

So basically the purpose of reforms in regional government institutions is not just an action to make regional government institutions fatter in order to accommodate office interests or to be leaner in order to reduce the burden of costs borne by the region. However, institutional reform of the regional government must be an act of change or renewal that has dimensions of restructuring, revitalization and re-functionalization in order to form a regional government that can truly meet the demands of community needs, such as faster, cheaper and better quality services. (Sedarmayanti, 2009).

Whereas for the foreseeable future the rearrangement of institutions cannot be avoided, in order to achieve clear division of authority and responsibility between existing organizational units in realizing the five functions of regional government institutions, namely strategic functions apec, middle line, technostructure, support staff, and operating core, the level of local governance must emphasize the values of freedom / independence, participation, democracy, accountability and efficiency (Sumartono et al., 2001). Based on a discussion of the supporting factors and obstacles to the restructuring of Manado City Government organization, the minor propositions can be formulated as follows:

Minor Proposition 4 "If the organization's restructuring process is not supported by human resources (State Civil Apparatus), the political will of the regional head and appropriate central government policies, then organizational restructuring is less supportive in enhancing the effectiveness of regional apparatus organizations".

Organizational Restructuring Model to Improve Performance. The restructuring of Manado City Government organization carried out by adding organizational units is a phenomenon that is often carried out by Regional Heads in the era of regional autonomy. However, the development of regional government organizations that focus on increasing the number of organizational units is not based on the desire to improve the effectiveness and

efficiency of the performance of regional government organizations, but rather to facilitate positions from members of organizations that end up increasing the budget.

The decentralization policy that has provided greater space for local governments to regulate and manage their own households must be utilized properly in order to improve services for the welfare of the community. The emergence of various consequences due to the decentralization policy and the occurrence of various changes in the lives of people in the regions, demands the existence of a reform movement in the institutions of regional government in order to be able to respond to the dynamics and real needs of citizens. Regional government institutional reforms must be directed to reforms that have dimensions of restructuring, revitalization, and refunctionalization through integrated approaches to aspects of culture, structure, management, human resources, and the leadership of the regional government in order to become a more efficient, effective, adaptive, accountable, and better organization in providing services to the community, so that creating community welfare as mandated by the decentralization or regional autonomy policy. In the public administration system as a system of working together groups of people to achieve common goals (Piffner and Presthus, 1960), the existence of the Regional Government as a public organization is an important element as a place for public officials to carry out the mandate of public services.

The ability of regional government organizations to carry out their functions (Supriyono, 2007) depends on three dimensions of institutional development. *First*, the effectiveness of regional government institutions in carrying out the functions of planning and implementation. *Second*, the direction of changing the role of local government institutions in addressing decentralization policies. *Third*, institutionalization in regional government institutions and other objectives to solve institutional effectiveness problems, the direction of changes in the role of institutions, and the problem of institutionalization in regional government institutions. In local government organizations, efforts to create organizational effectiveness through restructuring in the form of rationalization of employees are not popular and appropriate policies. This is different from private organizations, organizational restructuring in the form of reducing the number of employees (downsizing) is actually a general measure in maintaining the effectiveness of the organization (Basiran, Kusuma & Paselle, 2018). Based on a discussion of Manado City Government organization restructuring model, the minor propositions can be formulated as follows:

Minor Proposition 5 "If the restructuring process of the Regional Government organization does not consider organizational management (standard operation procedure organization), then the restructuring of the organization of the device is limited to the central government policy nomenclature".

Furthermore, considering the five minor propositions mentioned above, a major proposition can be formulated regarding the restructuring of public organizations in improving public service performance as follows:

Major Proposition "The restructuring of regional government organizations is an answer to any changes, is a complex strategy, aimed at changing the beliefs, attitudes, values and organizational structures in order to have the ability to advance knowledge of technology, markets and new challenges".

CONCLUSION

The restructuring process for Manado City Government was carried out based on Central Government policies, begins with an understanding of the organization's mandate and mission as a public organization. The restructuring is intended to realize Manado City Government organization that is effective and efficient in presenting public services. In rearranging Government Organizations. The city of Manado is oriented to meet the provisions of Government Regulation No. 41/ 2007 and future regional interests. For this reason, Manado City Government Organization increases the number of bodies in its structure.

In restructuring, there are factors that influence such as the quality and quantity of Human Resources (State Civil Apparatus/ASN) which are still lacking so that they do not support the objectives of Organizational Restructuring, the number of State Civil Apparatus in Manado City Government has drastically reduced (retirement, transfer and death); the operational expenditure budget before and after the Organizational Restructuring of Manado City Government did not experience significant changes; Political will of the Regional Head where power can also influence the design of organizational policy formulations namely on the basis of the formation of organizational units, because the policy formulation process is often influenced by the power of the leader as the policy holder that influences the results of the policies to be made and the changes in the Central Government Policy which are the main factors or factors that most influence the restructuring of Manado City Government organization.

The recommendations in this study are: *First*, the restructuring of regional government organizations as public organizations must be aimed at improving good governance. However, the restructuring of regional government organizations must be carried out consciously and planned; *Secondly*, the restructuring of the organization is an organizational response that is automatic towards fluctuations or changes in environmental conditions of the organization; *Third*, restructuring is intended to make public bureaucracy more economical, more productive, more efficient, more effective, more adaptive, more innovative, more accountable and better at serving the public; *Fourth*, the restructuring of Regional Government organizations based on a poor approach and rich functions in the context of public services, will increase effectiveness and efficiency in the performance of regional government organizations as public organizations; *Fifth*, the restructuring of public organizations is initiated to improve public services, so the approach to poor structure and rich functions in the structure of public organizations will improve the performance and work productivity of public organizations.

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THE BIOLOGICAL ASPECTS OF MACKEREL TUNA (*EUTHYNNUS AFFINIS*) AND THE TECHNICAL ASPECTS OF THE MILLENNIUM GILLNET FISHING IN THE ESTUARY OF PATI REGENCY, CENTRAL JAVA, INDONESIA

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ABSTRACT

Millennium gillnet is a construction development of the gillnet using a different net material which is the fiber monofilament strands. The main catch from the millennium net in Puncel is mackerel tuna. The study aims to analyze the technical aspects of millennium gillnet capture fisheries and find out the long-weight relationship and condition factors of mackerel tuna as the main catch of the millennium net. The results of the study showed that the length of mackerel tuna (*Euthynnus affinis*) from the millennium net catch landed in Puncel fish auction houses ranged from 33.2 - 52 cm with an average length of 43.012 cm FL. The pattern of fish growth is isometric with the equation $W = 0.1509L^{3.0513}$ ($r^2 = 0.9898$) with the condition factor value $K = 1.613$. The catches are the target fish and they are generally caught by the snagged and gilled methods. It can be said that a millennium captures fish selectively.

KEY WORDS

Millennium gillnets, mackerel tuna, length-weight, technical asset.

Pati Regency is located in the Central Java Province, Indonesia. With an area of 1,503.68 km² wide, it is astronomically located at 6° 25' - 7° 00' SL and 110° 50' - 111° 15' EL. Pati waters are on the north coast of Java which is part of the Java Sea with a maximum depth of 70 meters. These waters have considerable potentials for fisheries; among others are capture fishery and fish farming. A few types of fish having economic value that live in these waters include round scads (*Decapterus* sp), Bali Sardinella (*Sardinella lemuru*), goldband fish (*Upeneus moluccensis*), mackerel tuna (*Euthynnus affinis*), narrow-barred Spanish mackerel (*Scomberomorus commerson*) and milkfish (*Chanos chanos*) that are harvested from the fish farming (The Central Bureau of Statistics of Pati Regency, 2018).

Capture fishery activities in Pati are dominated by small-scale fishermen, except for those based at the Fishery Port of Bajomulyo Beach. Puncel Village is one of the areas with capture fishery activities, all of which are small-scale fishermen. Most of them use gillnet fishing equipment and there are 145 units in total. The free net fishing devices are operated with outboard motors in a 1-day operation. One of the types of gillnet used is the Millennium gillnet. It is a construction development of the gillnet; the difference is in the net material that uses twisted monofilament fibers. The main catches from Millennium gillnet at Puncel are mackerel tuna and narrow-barred Spanish mackerel.

Mackerel tuna (*Euthynnus affinis*) dominate the type of fish caught. In international trade, it is known as the kawakawa and included in the Scombridae family. They are pelagic, schooling, fast swimmer and eater fish (Chodriyah et al, 2013). They are included in a neritic tuna species spreading from the western Pacific, Japanese waters, the Philippines, the Indonesian archipelago, Australia, Indian waters to the Persian Gulf (Collette & Nauen, 1983). Research related to the biological data of mackerel tuna had already been conducted, but only in a port base outside Pati (a port base in Pekalongan and Tegal in 2012, and IIndramayu in 2015). To date, there have not been many studies on mackerel tuna resources based in Pati. Moreover, this resource is from the catch around Pati waters; since it is only a one-day fishing operation, the fishing area is not too far away.

The study aims to analyze the technical aspects of the millennium gillnet fishing business and to find out the relationship of length-weight and condition factors of mackerel tuna as the main catch of millennium gillnet. This information is very essential as the material for managing the millennium net fishing business to make it sustainably utilized.

MATERIALS AND METHODS OF RESEARCH

This research was conducted at Puncel fish landing site (the fish auction houses), Puncel village, Dukuh Seti District, in October - November 2018. The data collected for technical aspects included boat specifications, millennium gillnet fishing gear, methods of operation, and areas and fishing seasons; while the biological aspects collected were the fish size (length and weight).

Fishing boats sampled were those with millennium gillnet fishing gear of which the mesh size was between 3.7-4 inches, and they were determined randomly. Fish samples were taken by systematic random sampling which was about 10% of the total catch of the sample fishing boats. This technique is used by the researchers to take samples systematically (they were taken at the same place and within the same time interval) and in a homogeneous population. Fish sampling was done every 2 (two) weeks, in a 2-months observation.

The fish type determination used as a sample of this study was based on observations of the millennium gillnet main catches, which was the mackerel tuna (*Euthynnus affinis*). Meter (m) was used as the length measurement unit, with 1 mm accuracy; and the weight measurement used a digital scale with 1-gram accuracy.

The technical aspects of this study used the descriptive method, which is to describe the situation or occurrence (Azwar, 2010). The relationship between fish length and weight was analyzed by the following formula model, as presented by Effendie (2002):

$$W=a*L^b$$

Where: W = fish weight (gram); L = fish fork length (cm); a and b = constants.

From this equation, we can figure out the growth pattern of fish length and weight. The value of b obtained is used to determine the pattern of growth with the criteria: If $b = 3$, the growth is isometric; that is the growth of length equal to the growth of weights. If $b \neq 3$, the growth pattern is allometric; that is, the value of $b < 3$ is negative allometric, in which the length increase is faster than the added weight. The value of $b > 3$ is positive allometric, in which the weight gain is faster than the length increment.

To test the value of $b = 3$ or $b \neq 3$, a t-test (partial test) is performed; so, a hypothesis is made on the value of b assuming:

H_0 : $b = 3$, the relationship of length and weight is isometric;

H_1 : $b \neq 3$, the relationship length and weight are allometric.

The condition displaying fish corpulence with numbers is called the condition factor or the ponderal index. The condition factor (K) shows the condition of the fish in terms of physical capacity for survival, reproduction, and in terms of the habitat where the fish lives (Saputra, 2009). In the metric system, the formula used in calculating the condition factor is:

$$K = \frac{100 * W}{L^b}$$

RESULTS AND DISCUSSION

Mackerel tuna caught in millennium gillnet in Pati waters and landed at Puncel has a fork length (FL) between 33.2 - 52 cm (average 43.012 cm FL), and median 42.5 cm FL. The analysis of the correlation of length of weight to 55 tailed tuna samples produced the equation $W = 0.1509L^{3.0513}$ ($r^2 = 0.9898$) (Figure 1). After a t-test with a confidence level of 95%, the value of t-count is 0.0698, which is smaller than the t-table = 2.0049; this indicates that the weight increase is proportional to the growth of its length (isometric).

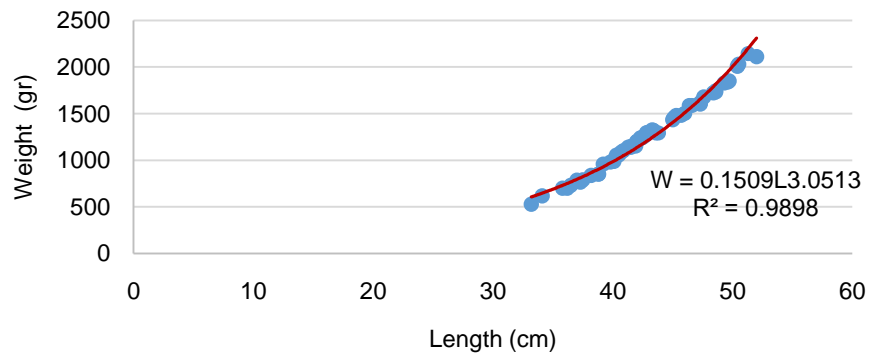


Figure 1 – Fish Length-Weight Correlation

The gillnets floated in the Java Sea and landed in Karangsong fish landing station, which is between 27-58 cm (average 45.5 cm) and median 44.0 cm. Since Pati's waters are still located in the Java Sea, the difference is insignificant. However, Chodrijah et al (2013) found that mackerel tunas captured with trawl rings and landed in Pekalongan archipelago fishing port had a range of lengths between 11.7-55.4 cm FL or an average of 34.1 cm FL. It appears that the fish caught with the millennium net is greater than those caught with trawl rings; this is because the mesh size of a millennium gillnet is 3.7-4 inch, which is more selective than that of trawl rings, which is generally around 1 inch. Moreover, the gillnets' mesh size floated at Karangsong fish landing station was around 4-5 inch and caught a long fish fork up to 58 cm, which was longer than those caught in Pati waters.

Based on the analysis of the relationship between the weight of the mackerel tuna, the $W = 0.1509L^{3.0513}$ equation showed that the growth pattern of the mackerel tuna caught in Pati waters had an isometric pattern with a value of $b = 3$ ($b = 3.0513$). This growth pattern is the same as the results of previous studies, even though a and b values are different. This different variation in the b value, according to Sparre & Venema (1998), is caused by several factors such as temperature, salinity, food (quantity, quality, and size), gender, the stage of gonadal maturity and habitat preservation.

The mackerel tuna landed at Puncel is worth 1,613; according to Effendi (1979), the K -value occurs in the less flat fish. The fluctuating condition indicates the fish spawning season; in which according to Effendi (2002), the value of fish condition factors fluctuates with the size of the fish. The increase in the value of the condition factor occurs when the fish fills the gonad with sex cells and will reach its peak before spawning.

The gillnet millennium boats used in Puncel are wood-based and operated with outboard motors. These motors generally use 1 main drive engine with 24 PK power, including the Tianli and Dongfeng brands. The size of the millennium net boat at Puncel has an average length of 6.75-7 m, a width of 2.7-2.9 m, and depth of 0.9-1 m.

The millennium gillnet construction consists of a net body, top rope, buoy, buoy rope, ballast, and ballast rope. The net body's function is to vertically block the fish. The material used is 10 plies transparent white monofilament; according to Sudirman and Mallawa (2012), it is expected to have the same color as the net so that the fish do not see them as barriers. The size of one net is 120 x 13.5 meters with a total of 2400 horizontal mesh eyes and 140 eye vertical net eyes. Puncel fishermen carry 12-16 pieces of net in one operation depending on the size of the boat.

The net buoy used is made of Polyvinyl chloride (PVC). The distance between buoys is 40 cm and there are 300 pieces of buoys of in one piece of net. The buoys are made from styrofoam materials tied to a 4-meter long bamboo which has been marked with flares and lights. The pennant buoys are made of styrofoam of which the average size is 30x15x15 cm, and the distance between them is 52.5 m. The ballast used is made of cast cement in the form of a flat circle weighing 500 grams. It is installed with a distance of 15-18 m between each ballast. The specifications of millennium gillnet fishing gear operated at Puncel are presented in Figure 2.

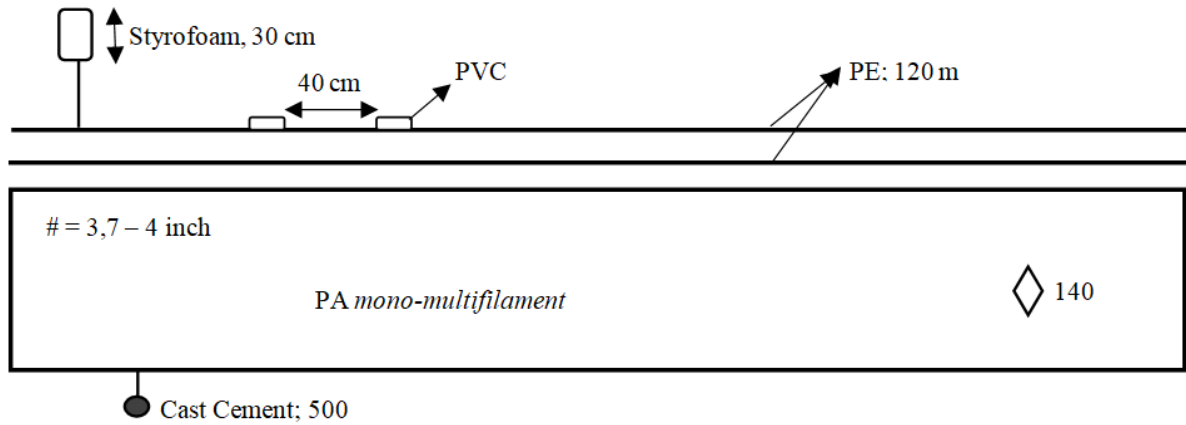


Figure 2 – The Millennium gillnet Design

The tools and supplies were prepared before going to the sea. The nets were arranged on the boat by separating the ballast and buoy to lower them easily and not to make them tangled. The fishermen left at 3:00 p.m. and arrived at the catching area within 2-3 travel hours. Fishing grounds determination commonly practiced by the fishermen today still uses traditional methods obtained from generation to generation, which is by paying attention to the brightness or color of the seawater and the calmness of the sea; this will affect the type of millennium gillnet target fish.

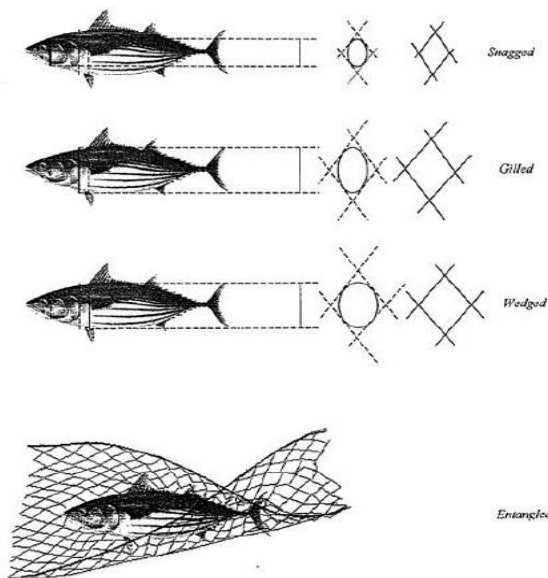


Figure 3 – The ways fish are caught with floating gillnets

The operation of gillnets is as follows:

- a. **Settings.** After reaching the intended fishing ground, the boat stops and the setting process starts. The fishermen lower the net which begins with lowering the floating sign; then, the net is lowered from one end to the last part of the net body and tied to the boat. The setting is done in about 1 hour, depending on the length of the net being carried.
- b. **Immersing.** The immersing process is to leave the net in the water. It takes around 3-4 hours. The depth level during the immersing process depends on how long the bulb rope is stretched.
- c. **Hauling.** After leaving it for 3-4 hours, the net is lifted from the water (the hauling process) to take the catch. The process is assisted by haulers, while the fishermen take the catch one at a time. The time needed for hauling is longer than the setting because the

fishermen need more time to release fish from net meshes and clean all the nets from dirt stuck in them; thus, the more fish they get, the longer the hauling process is.

Fish caught by millennium net are those entangled when swimming, either to move to waters suitable for their habitat or to look for food/prey. Based on the results obtained from this study, the average catches of pelagic fish or fast swimmer fish are mackerel tuna and narrow-barred Spanish mackerel.

Fish caught by gillnets were snagged, gilled, wedged and entangled. Those having a grid size equal to or smaller than the size of the net's circumference will be snagged, gilled, wedged; while those having a body circumference larger than that of the net will be entangled (Figure 3). From the results of the research, the fish were snagged and gilled in average; however, based on Masuswo and Widodo (2016), it has not been exactly known how the mackerel tuna are caught by gillnets drifting in the Java Sea because there has been no data related to it.

The quality of fish catch can decrease due to increasing time of fishing; this can be reduced through applying good storage technology, such as the hatch cooling facilities. Puncel fishermen practicing one-day fishing operation and adding ice blocks in the hold will have fish fresher than other catches.

CONCLUSION

As for the conclusion of this study, the fork length of the mackerel tuna (*Euthynnus affinis*) from the millennium net capture landed in Puncel fish auction houses ranged from 33.2-52 cm, with an average FL of 43.012 cm. The pattern of fish growth is isometric with the equation $W = 0.1509L^{3.0513}$ ($r^2 = 0.9898$) and the condition factor (K) value is 1.613. From the main target fish catch, the fish were snagged and gilled on average; it can be said that the millennium net is selective in catching fish.

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TECHNICAL AND FINANCIAL ANALYSIS OF BLUE SWIMMING CRAB (*PORTUNUS PELAGICUS*) FISHING BUSINESS IN REMBANG DISTRICT, INDONESIA

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ABSTRACT

This research analysed the technical and financial aspects of blue swimming crab fishing business using folding tray in Tunggul Sari, Rembang District, Indonesia. This research was conducted from February to March 2016. The samples of this descriptive research were selected using purposive sampling method. The obtained data were then analysed based on business feasibility analysis using some indicators including NPV, IRR, payback period and R/C Ratio. The results of the technical analysis showed that fishermen employed folding trays with single size (Length x width x height: 45 cm x 30 cm x 18 cm), yet they applied different numbers of folding trays, ranging between 500 – 600 trays. They also had similar size of fishing boats under 5 GT and they applied one day fishing system. Meanwhile, the results of the financial analysis showed Net Present Value > 0, amounted to IDR 94.691.087 per month, Internal Rate of Return of 45.56% greater than the interest rate of 12%, payback period of 3 years 3 months and 3 days and R/C ratio > 1 at 1.20. Regarding to those results, the blue swimming crab fishing business run using folding tray in Tunggul Sari has been regarded feasible.

KEY WORDS

Blue swimming crab, folding trap, technical asset, financial asset, Tunggul Sari, Rembang.

Rembang is a district located in the northern shore of Central Java Province, Indonesia. This district possesses marine potentials that play major role to its economic development. The production of blue swimming crab in Rembang District also ranked the big 3 in Central Java Province after Demak District and Kebumen District, with a total yearly production of 512.5 tons, 258 tons, and 198 tons respectively (DKP of Central Java Province, 2017).

Blue swimming crab is also a major export commodity to the United States of America. The production of blue swimming crab greatly depends on the catches of fishermen from the sea. Blue swimming crab is the main catch and secondary catch of certain fishing tool. According to KEPMEN-KP Number 70 of 2016, there are many methods or tools used to catch the crab as the main target and as secondary target as well including: 1) Fish Trap: folding trap; 2) Fishing nets: crab nets and trammel net; 3) Seine Nets: Danish seine, *cantrang*, *payang*; 4) Trawl; and 5) Dredges. Trammel net and traps were mostly used by fishermen in Rembang as presented in Figure 1.

Based on Figure 1, the most used tool among fishermen in Rembang is trammel net and trap. Both tools shared slightly similar percentage with only one percent different. Meanwhile, the use of *cantrang*, Danish seines, *lampara* and *payang* shows low percentage as the trawls and seine nets are banned for use in WPPNRI (*Wilayah Pengelolaan Perikanan Negara Republik Indonesia*) or Indonesian Fishing Management Area.

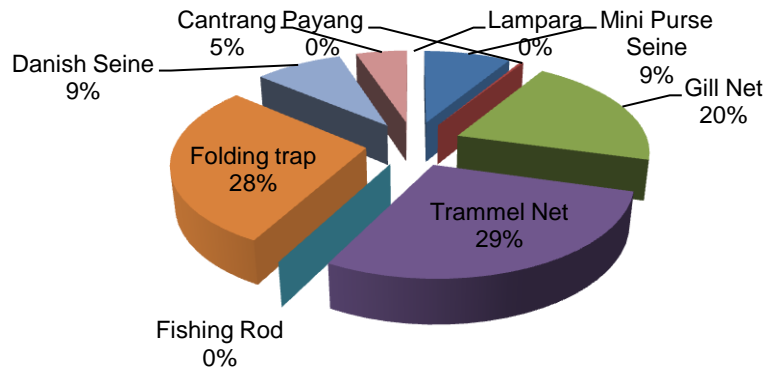


Figure 1 – The Percentage of Fishing Tool Use in Rembang District 2017 (Source: The Department of Marine and Fisheries of Rembang District, 2018)

Traps in the form of folding traps are mostly used to catch the blue swimming crab. The use of particular trap in an area as pointed out by Martasuganda (2008) is mostly affected by considerations on the costs in the making of the tool, easiness in operating the tool, the condition of the catches in which living catches have higher economical values than the dead ones, and the ban upon the use of certain tool other than traps. The folding trap is a fish trap that belongs to the group of traps.

Tunggul Sari village is a fishermen village in Kalioregency of Rembang District, where people catch the blue swimming crabs using folding traps as their daily business. They have been running their activities for more than 10 years. The high demand upon the blue swimming crab drives the fishermen to continuously catch the crabs. They catch the crabs on daily basis all year long without any particular day off but only when their neighbours held certain occasion or funerals. Any sizes of the crabs are accepted by collectors. Regarding to the use of folding traps to catch the blue swimming crabs, technical analysis and financial analysis to the business was considered necessary to conduct.

This research was conducted to analyze the technical aspect of crab fishing using folding traps and to analyze the financial aspects of the crab fishing business using folding traps in Tunggul Sari Village, Kalioregency of Rembang District.

METHODS OF RESEARCH

This research was conducted from February – March 2018 in Tunggul Sari Village, Kalioregency, Rembang Province, Central Java Province. The location was purposively selected as fishermen in this village used folding traps. The village has been selected for many times as a pilot village for research done by the Department of Marine and Fisheries of Rembang District for its blue swimming crab production.

Primary and secondary data were collected in this research. Primary data were collected through observations, interviews and documentations, while secondary data were obtained from the Department of Marine and Fisheries of Rembang District. Observations were carried out in the form of direct observation toward the research object. The objects of this research included the construction of folding traps, fishing boats and fish catches. Direct interviews were administered with fishermen who used folding traps as the respondents based on questionnaires. The data obtained from the interviews were related to technical and financial aspects of the blue swimming crab business. Furthermore, documentation was done by taking pictures directly during the research.

The descriptive method employed in this research allowed the researchers to describe the technical and financial aspects of the crab fishing business using folding traps.

Samples were selected using the purposive sampling technique. As explained by Sugiyono (2013), purposive sampling technique is a technique used to take samples from data sources based on particular considerations such as the samples are considered

capable in providing rich information relating to the research which are then expected to make it easier for researchers to explore the object or social phenomena being observed. Samples in this research were determined based on the minimum sample requirement of 30 respondents.

The analysis of technical data was conducted descriptively including the construction of the traps, fishing boats and the operating procedure of the folding traps.

According to Umar (2009), *Net Present Value* is measured based on the following formula.

$$NPV = \sum_{t=1}^n \frac{CF_t}{(1+i)^t} - C_0$$

Where: n - Number of year; t - year-t; CF_t - Cash flow per year in period t; C₀ - Initial investment in year-0; i - Interest rate. Decisions: NPV > 1, the project is accepted; NPV = 1, the company remains stable despite project is accepted or rejected; NPV < 1, the project is rejected.

As stated by Umar (2009), Internal Rate of Return is one of methods to measure the level of investment. IRR is measured using the following formula.

$$I_0 = \sum_{t=1}^n \frac{CF_t}{(1+IRR)^t}$$

Where: I₀ - Initial investment value; t - Year-t; n - Number of year; CF_t - Net cash flow; IRR - Internal rate of return.

Effendi (2006) stated that the analysis of *payback period* is intended to find out the estimated time of return on investment made by certain company. Generally, the payback period is calculated as follows.

$$PP = \frac{\text{Total investment} \times 1 \text{ year}}{\text{Profit}}$$

Revenue cost ratio is a common and simple concept to measure business feasibility (Ramadhan *et al.*, 2017). Effendi (2006) explained that R/C analysis is employed to calculate the relative profit of a company on year compared to the operational cost. A business is regarded feasible if R/C is greater than 1 (R/C > 1). It implies that the greater the R/C, the greater the profit. R/C ratio analysis can be measured using this following formula:

$$R/C = \frac{\text{Total Income}}{\text{Total Fixed Cost} + \text{Total Variable Cost}}$$

RESULTS AND DISCUSSION

Folding traps is a tool used to catch fish in the *WPPNRI* which belongs to the traps. Traps are made from net, and/or steel, wood, bamboo and they shape cylindrical, trapezium and other shapes that can be operated passively with or without bait in the bottom or water surface (KEPMENKP Number 10 of 2010). The folding trap is designed to trap the target fish to enter the door without being able to come out. Folding trap is a passive tool put in particular place without interruption as it lures the target to come into the trap (Shalichaty *et al.*, 2014). The folding trap is employed by all fishermen in Tunggul Sari village as it is easy to operate and it is foldable that fishermen are able to bring many traps at once. In one fishing unit, fishermen applied around 500 – 600 units, in which flagship called *umpal* was put in every 50 units. *Umpal* is applied to anticipate losses as traps are applied in one series. This number of traps applied by fishermen exceeded the maximum traps of 300 units as allowed by PERMEN-KP Number 71 of 2016 Article 30 verse 2. The number of traps should

be well-regulated to avoid excessive fishing. Besides, folding trap is an economic and low-cost trap to make compared to other crab traps such as gillnet and *arad*.

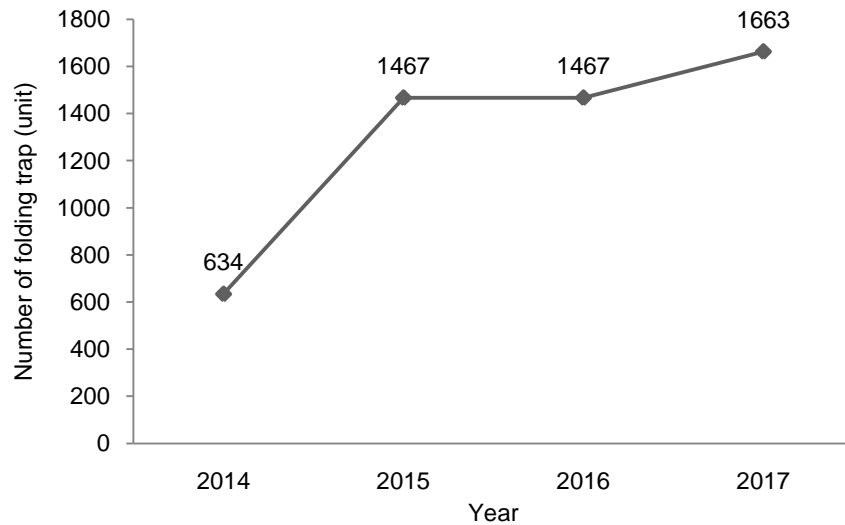


Figure 2 – The Trend of Using the Folding Trap in Rembang District from 2014-2017
(Source: The Department of Marine and Fisheries of Rembang District, 2018)

Figure 2 shows that between 2014-2017, the trend of using the folding trap increased. This increase occurred as fishermen wanted to increase the quantity of their catches which led to higher earnings.

The folding trap used by fishermen in Tunggul Sari Village is square-shaped made from steel and covered by Polyethylene (PE) nets. The detail size of the trap is presented in Table 1.

Table 1 – The Results of Observation on the Construction of Folding Trap

Measured Part	Direction of the Twist	Length	Width	Height	Net Mesh Size	Color	Material
Body	-	45 cm	30 cm	18 cm		-	Fe
Nets	Z	-		-	1.25 cm	Green	PE
Trap Door	-	30 cm	2 cm	-		-	-
Main Rod	S	3.5 km	-	-		White	PE
Branch Rod	Z	1 m	-	-		Blue	PE

Based on Table 1, the size of the folding trap body is 45 x 30 x 18 (cm³). Almaida et al. (2015) stated that the size (p x l x t) of the folding trap body used by fishermen is 43 x 30 x 18 (cm³), similar to the one used in Betah Walang Village, Demak Regency. One unit of folding trap is strung together on one main rope with a total of 500 - 600 units. Based on Table 1 above, the total length of the main rope of the folding trap ranges up to 3.5 km while the branch rope is 1 m in size. The main rope used between fishermen can be different as the total length of the main rope depends on the number of folding traps and the distance between the traps. The number of folding traps installed by each fisherman depends on the financial capacity of the fishermen.

Folding traps are usually operated by fishermen in Tunggul Sari Village using 5 GT wooden boats with 6.4 m length, 2.6 m width and 0.9 m tall. Their boats are equipped with Donfeng engine with 16 PK power. There are usually 3 crews on boat including 1 owner who is usually the captain, and 2 crews.

The blue swimming crabs are usually caught using one day fishing method due to the relatively near distance toward the fishing ground and the need to immediately collect the crabs to the collectors for further process. Fishermen usually start catching the crabs using the folding traps in the dawn or around 04.00 West Indonesia Time up to 09.00 – 11.00 West

Indonesia Time. The total time needed for a trip ranges from 5 to 7 hours. These followings are the steps to operate the folding traps.

The planning step includes checking the fuel (diesel), boat condition, bait and boat crews. Fishermen usually determine the fishing ground based on their experience for years in catching the crabs. They usually do it in the northern water of Marongan Island to the northern part of Muara Sungai Juana around 4-12 miles away from the shore and 5-10 m in depth. The trip from the fishing base to the fishing ground takes around 1-3 hours. Baits are put in the traps during the trip to the fishing ground. The baits are usually made from *Swanggi* fish head, processed cow leather, even banana tree midrib.

Setting or the application of the trap is done when fishermen have reached the fishing ground. They start by reducing the engine speed, applying the flag buoy in the water, applying the traps one by one in every 7 – 7.5 meter gap between each trap, applying the ballast and applying the sign buoy.

Immersing is done by soaking the traps and letting the traps under the water for one day and one night to lure the crabs with the baits and to get them trapped. The baits have to stay long in the water as crabs are lured by them. Baits made from *Swanggi* fish are the most popular baits. The immersing time might differ based on the area. As stated by Pratama *et al.* (2012), the immersing time takes around 3-4 days. Longer immersing time might be caused by the location of fishing ground that is farther.

Hauling is done once a day. If traps are put in 06.00 in the morning, the hauling is done around 05.00 the next day. Hauling is done to take the catches. During the hauling process, fishermen do not employ any tools, making the time less efficient compared to the time needed when they use supporting tools. According to Ubaidillah (2014), the use of line hauler in the main rope of the traps makes hauling process easier in every trip.

After every hauling, each trap is cleaned, and other bait is put to be settled and immersed back. The cycle is done all year long. Broken traps are brought to the base to be fixed and put back. The main target of the traps is the blue swimming crabs. Regardless of the quantity, the catches are then collected to the collectors. A research done by Muawanah *et al.* (2017) also mentioned that almost all of the crabs are accepted by collectors or mini plants to be later sold to crab exporters.

The financial aspects of the blue swimming crab fishing business using the folding traps strongly correlates with capital investment and working capital that should be analysed in determining the feasibility of the business.

Capital investment is the initial capital needed for an emerging entelDRrise to run its production process. Capital investment in this business included wooden boat, boat engine, and folding traps. The detail items of the capital investment are described in Table 2.

Table 2 – The Average Capital Investment of Crab fishing Business using the Folding Traps

No	Types of Investment	Economic Age (Year)	Minimum (Rupiah/Year)	Maximum (Rupiah/Year)	Average (Rupiah/Year)
1	Boat	10	27,000,000	35,000,000	31,000,000
2	Engine	5	5,000,000	8,000,000	6,500,000
3	Folding Traps	3	12,000,000	18,900,000	15,450,000
Total			44,000,000	61,900,000	52,950,000

Based on Table 2, the biggest investment is put in the boat, while the smallest one is in the engine. The boats are commonly 5 GT in size with 16 PK powered Donfeng outboard engine. Capital investment has an economic life of more than one year. The economic life of the boat is 10 years. Therefore, in the 11th year re-investment should be carried out. The economic life of the engine is 5 years and needs re-investment in the 6th year. The economic life of folding traps is 3 years and re-investment is needed in the 4th year. Adequate capital is necessary in starting a business

The capital needed to run the business is around IDR 44,000,000 minimum and a maximum of IDR 61,900,000. This amount can be reduced by procuring used boats and engines and fewer number of folding traps. Based on the results of interviews with

fishermen, each fisherman has around 500 to 600 pieces of traps, which they install on fishing ground with the price of folding unit ranging from IDR 24,000 to IDR 27,000.

Working capital in the crab fishing business refers to the capital needed to do fishing activities. Working capital is permanent and non-fixed. Fixed working capital refers that the year the costs incurred are fixed such as the cost of maintenance and sea alms. Meanwhile, non-permanent working capital means the costs vary within a year such as crew wages, diesel fuel and bait costs. Table 3 presents the detailed item of the working capital.

Table 3 – Average Working Capital of Crab fishing Business using the Folding Traps

No	Types of Working Capital	Minimum (IDR/Year)	Maximum (IDR/Year)	Average (IDR/Year)
1	Maintenance Cost	4,400,000	6,190,000	5,295,000
2	Traditional ceremony of fishery	300,000	300,000	300,000
3	Crew Wages	56,094,420	59,760,660	57,927,540
4	Diesel Fuel	9,302,400	10,852,800	10,077,600
5	Bait	22,800,000	27,360,000	25,080,000
	Total	92,896,820	104,463,460	98,680,140

Based on Table 3, crew wages dominate the expenses, while marine charity has the smallest cost. Crew wages are distributed using profit sharing system with a proportion of 60%: 40%, in which 60% goes to the fishermen while the 40% goes to the owners. The amount of wages for the crew depends on the number of catches obtained. More catches leads to higher amount of wages. The diesel fuel used for each trip ranges from 5-6 liters, in a year there are around 304 trips. More trips in a year leads to higher amount of capital spent on diesel fuel. The bait used in each trip ranges from 10-12 kg. More folding traps installed means more bait needed and higher amount of capital spent. The commonly used bait is the Swanggi fish head, although it can also be changed to processed cowhide even banana tree midrib. The use of banana leaf midrib as baits can reduce the amount of the working capital, but the crabs do not really like the baits compared to Swanggi fish head bait. The cost of crew consumption on each fishing trip, which includes food, drink and cigarettes, is borne by each crew. The crab fishing business does not require need ice to store the catches as it is done in a one day fishing system to maintain the quality. The average annual working capital is approximately IDR. 98,680,140.

The revenue of this business is obtained from the number of catches multiplied by the price. The price of crab is determined by collectors instead of fishermen because there is a capital bond between collectors and fishermen. Collectors usually provide capital investment assistance as a bond that fisherme collect their catches only to the collectors. The average crab price in the peak season is IDR. 55,000, IDR. 60,000 in non-peak season and in the dry season are around IDR. 76,000. The total average revenue is presented in Table 4.

Table 4 – The Average Revenue of the Crab fishing Business using the Folding Traps

No	Season	Price Per Kg	Number of Trips	Average Production Per Trip	Revenue (IDR/Year)
1	Peak Season	55,000	83	16,50	75,322,500
2	Ordinary Season	60,000	126	5,50	41,580,000
3	Low Season	76,000	95	2,05	14,333,600
Total Average Revenue =					131,703,500

The revenue is influenced by the season. As presented in Table 4, the highest income is obtained during the peak season amounted to IDR 75,322,500 per year. Meanwhile, the lowest revenue is obtained in the dry season of around IDR. 14,333,600. During the peak season, fishermen can catch many crabs but the price is rather low and vice versa, during the dry season, the number of catches decreases but the price is higher. The crab peak season occurs from December to February, while the low season occurs from August to November.

Profit is the goal to be achieved in running a business. In general, a business is said to obtain profit if the revenue is greater than the total cost incurred and is said to suffer a loss if

the revenue is smaller than the total cost. The profit of the crab fishing business using folding traps is presented in Table 5.

Table 5 – Profit/Loss of the Blue Swimming Crab Fishing Business in the First Year

No	Item	Value (IDR)
1	Revenue	131,703,500
2	Capital Investment	52,950,000
3	Working Capital	98,680,140
	Profit/Loss	- 19,926,640

Based on Table 5, the gap between revenue and capital is negative, indicating that the business suffers a loss. Loss in the first year is reasonable in a business, because there is a very large capital invested in the first year.

The feasibility of crab fishing business is measured in the form of financial analysis by calculating NPV, IRR, PP and R / C Ratio and several other assumptions relating to cash flow. The assumptions used in estimating the cash flow of the crab fishing business in Tunggul Sari Village are as follows:

- Project sustainability in 10 years;
- Capital investment, working capital and revenue increase by 10% per year;
- Capital comes from private capital, no bank loan is used;
- The remaining capital in the end of an economic year is around 30%, which means that if the average investment for the engine (see Table 2) is IDR 6,500,000, and it is sold in the fifth year (5 year economic year), the remaining asset is 30%, then the selling price of the engine is 1,950,000, and reinvestment is made in the beginning of the 6th year;
- Revenue is obtained from the sales of the crab and the remaining capital investment.
- 12% discount factor.

Table 6 – Financial Analysis of Blue Swimming Crab Fishing Business

No	Item	Value (IDR)
1	Cash flow (IDR)	-
	Year -1	- 47,029,354
	Year -2	10,239,500
	Year -3	33,536,000
	Year -4	12,459,500
	Year -5	33,811,500
	Year -6	30,523,300
	Year -7	14,419,000
	Year -8	36,880,000
	Year -9	44,934,300
	Year -10	44,456,300
2	Discount factor (%)	12
3	NPV (IDR)	94,691,087
4	IRR (%)	45,56%
5	PP	3 years 3 months 3 days
6	R/C ratio	1,20

Based on Table 6, the NPV value of the business reaches IDR. 94,691,087, which means that at the end of the project, the profit obtained is IDR. 94,691,087. This NPV value is obtained by comparing the cash inflows (cash in) with the cash outflow (cash out) that has been value-presented. The interest rate is 12% in accordance with the micro business interest rate applies by Bank Rakyat Indonesia. Positive NPV value indicates that the business is profitable and feasible to run.

Business is said feasible if the IRR is greater than the discount factor and vice versa. Smaller IRR value than the discount factor implies that the business is not feasible. Based on Table 6, the IRR value of the business is 45.56% with a discount factor of 12%. The IRR

value of this business is greater than the discount factor. Therefore, the crab fishing business using folding traps in Tunggul Sari Village is profitable and feasible to run.

Payback Period is an parameter that shows the rate of return on capital investment of a business. Faster return on investment capital is more preferable because it shows smooth capital flow. Based on table 6, the payback period of the crab fishing business is 3 years 3 months 3 days, which is considered fast. If the rate of return on capital is faster than the predetermined period, the business is considered feasible.

This analysis is obtained by comparing the income and the costs that incur. As presented in Table 6, the R / C value of the ratio of the business is 1.20. The value of R / C ratio is > 1 , implying that the business is considered profitable and feasible to run. According to Malik (2013), increasing the R / C Ratio can be done by reducing the production costs by not using bait.

CONCLUSION AND RECOMMENDATIONS

Technically, fishermen in the researched location used folding traps with single size (length x width x depth: 45 cm x 30 cm x 18 cm) but each fishermen applied different number of traps, ranging from 500 – 6 traps. They also used similar boat size of under 5 Gross Ton using a one day fishing system.

From the financial point of view, the crab fishing business using folding traps in Tunggul Sari Village is considered feasible as NPV > 0 amounted to IDR 94,691,087, IRR (45.56%) greater than the interest rate of 12%, payback period of 3 years 3 months 2 days and R/C ratio > 1 at 1.20.

Based on PERMENKP No. 71 of 2016 concerning Fishing Lines and Placement of Fishing Equipment in the Fisheries Management Areas of the Republic of Indonesia, states that traps may be operated in IA, IB and II fishing grounds with a maximum of 300 traps. it is necessary to regulate the number of traps applied in one series. Based on the results of the study, the number of traps applied in a ground ranges from 500-600 traps. Without proper regulation and control upon the number of the traps, excessive exploitation of crab might occur, threatening the crab production. This problem will later affect the sustainability of the crab fishing business in Tunggul Sari Village.

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EFFECT OF ANTIFUNGAL TREFLAN AND LENTIL ESSENTIAL OIL DISC INHIBITION METHODS ON *LAGENIDIUM CALLINECTES*

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ABSTRACT

Lagenidium callinectes is marine phycomycetous parasitic fungus capable to spread disease in marine Crustacea eggs and larvae. Treflan (trifluralin, Elanco) is used in penaeid shrimp larval mycosis treatment. The disease was caused by the phycomycetous fungi *Lagenidium* sp. and *Sirolopidium* sp. The study aimed to determine the efficacy of Treflan and Lentil Essential Oil to *Lagenidium callinectes* growth inhibition in Potatoes Dextrose Agar (PDA) + 2% NaCl. This study was observational analytical research utilizing experimental design. The data were obtained from two treatment group. Treatment Group 1 used Lentil Essential Oil and Treatment Group 2 used Treflan product. Each treatment dilution 10^{-1} , 10^{-2} , 10^{-3} , 10^{-4} , 10^{-5} , 10^{-6} were dripped onto disc. The control group was immersed in sterile seawater. The inhibition zone diameters from each plate were measured. The treflan treatment group exhibited *Lagenidium* sp. 11.08 cm growth inhibition zone in the second day of incubation and 8.27 cm growth inhibition zone in the third day of incubation on dilution 10^{-1} (100.000 ppm). Lentil Essential Oil treatment group exhibited *Lagenidium* sp 8.38 cm growth inhibition zone on the second day of incubation on dilution 10^{-1} (100000 ppm). The study indicated that Treflan and Lentil Essential Oils are capable to inhibit *Lagenidium* sp. growth as these contain antifungal compounds.

KEY WORDS

Lagenidium sp., Treflan product, lentil essential oil, growth inhibition.

Lagenidium callinectes is a marine phycomycetous parasitic fungus. *Lagenidium callinectes* or similar species have been reported spread disease on marine Crustacea eggs and larvae. The *Lagenidium* exhibits similar pathology in all host species. In wild crustacean populations, it affects the eggs. In aquaculture, however, it affects both eggs and larvae [1].

Lagenidium callinectes hyphae forms are contorted, irregularly branched, sparingly septate. It possesses cell wall and membrane, vacuoles, mitochondria, ribosomes, small and large vesicles, and woronin bodies. *Lagenidium callinectes* spore is singular or in pairs. The fungal Mycelium could either invade or infect larval *Penaeus monodon* muscle tissues [2].

Treflan (trifluralin, Elanco) is used in penaeid shrimp larval mycosis treatment. The disease was caused by the phycomycetous fungi *Lagenidium* sp. and *Sirolopidium* sp. Some culturists have reported treatments using Mfluralin to be ineffective while others have found it to be quite efficacious [3].

Lentil Essential Oil (LEO) contains sweet almond oil, lavender oil, coconut oil, olive oil, peppermint oil extract. These extracts are used as antifungal and antibacterial.

The specific objectives of this study were to determine the efficacy of LEO and Treflan product to inhibit pathogenic fungus growth in agar media.

MATERIALS AND METHODS OF RESEARCH

The fungus was obtained from AHS Lab. These samples were identified, purified, certificated, and assessed by a Professor. Other materials used were Lentil Essential Oil. Treflan Product, PDA medium, Incubator, Petri dish.

Agar media used in this experiment was PDA+2% NaCl. Agar media was kept in 4°C temperature prior to the experiment.

Pure fungus isolate was obtained from PDA agar, which was procured from AHS Lab. Fungus culture used were 5-7 days old. The fungal colony was suspended in 50 ml of sterile seawater 20 ppt in a beaker and incubated at 30°C for 48 h to induce zoospore formation. Zoospore densities were estimated using hemocytometer light microscopy [4]. After determining zoospore densities, based on the modification of the method by Tidaporn, Spores was transferred to agar media (SDA+2% NaCl+ 100 mg gentamicin) [5]. Treatment Group 1 used 15 ul Lentil Essential Oil dilutions 10^{-1} , 10^{-2} , 10^{-3} , 10^{-4} , 10^{-5} , 10^{-6} . The dilution was dripped onto a disc and was incubated at 25-27°C. Treatment Group 2 would be used 15 ul Treflan product dilution 10^{-1} , 10^{-2} , 10^{-3} , 10^{-4} , 10^{-5} , 10^{-6} . The dilution was dripped onto a disc and incubated at 25-27°C. The control group used sterile seawater. After 24 hours of incubation, the inhibition zone diameters from each plate were measured.

Table 1 – Experimental Design

Location	Group	Rep	Dilution	Product
Lab Fungus	Treatment (Disc)	3	10^{-1}	Lentil Essential Oil
			10^{-2}	
			10^{-3}	
			10^{-4}	
			10^{-5}	
			10^{-6}	
Lab Fungus	Treatment (Disc)	3	10^{-1}	Treflan
			10^{-2}	
			10^{-3}	
			10^{-4}	
			10^{-5}	
			10^{-6}	
Lab Fungus	Control	3	20 ppt	Sterile sea water

The Fungi growth Inhibition Test was conducted at Integrated Laboratory in June 2016.

RESULTS OF STUDY

Table 1 exhibits the efficacy of each Lentil Essential Oil and Treflan product on *Lagenidium* sp. Lentil Essential Oil and Treflan at 10^{-1} dilution inhibited the growth of *Lagenidium* sp.

Table 1 – The efficacy of the Lentil Essential Oil and Treflan Product on the fungi growth inhibition and minimum inhibitory concentration (MIC)

Treatment	<i>Lagenidium</i> sp. Growth Inhibition			MIC
	DOI 2	DOI 3	DOI 4	
Treflan	11,08±1,04	8,27±0,10	0,00±0,00	10^{-1}
Lentil Essential Oil	8,38±0,13	0,00±0,00	0,00±0,00	10^{-1}
Sea Water (control)	0,00±0,00	0,00±0,00	0,00±0,00	

NB: DOI (Day of Incubation) Average ± SD.

DISCUSSION OF RESULTS

Lagenidium sp. is parasite species in arthropods class, known to attack *L. Vannamei* shrimps. A fungal disease caused by *L. callinectes* was reported from larval *P. monodon* from India for the first time. The morphology of the hyphae and spores described in the study is very similar to the description of the fungus in *P. Setiferus* [6].

Lagenidium sp growth was assessed using Treflan. It exhibited 11.08 cm inhibition zone on the second day of incubation and 8.27 cm inhibition zone in the third day of incubation. This occurred on dilution 10^{-1} (100.000 ppm) (Figures 1-2). Treflan contains trifluralin (dinitroaniline) or organic herbicide. Dinitroaniline herbicide would be active when

applied the growing media before the fungal hyphae grew. Dinitroaniline herbicide worked as mitotic toxic that inhibits the fungal hyphae growth.

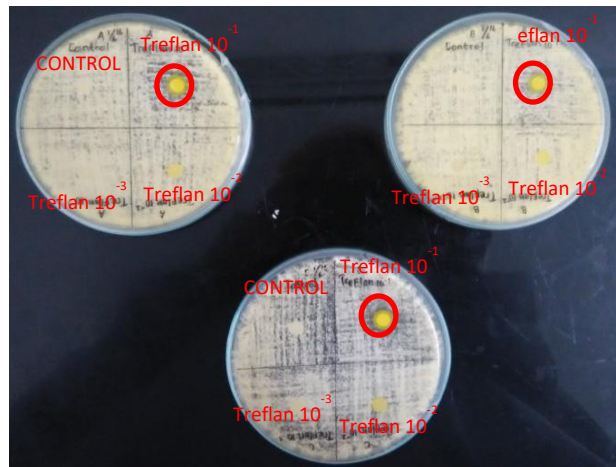


Figure 1 – Inhibition zone in Treflan group on the second day of incubation (1A) Treflan Replicate A; (1B) Treflan Replicate B; (1C) Treflan Replicate C

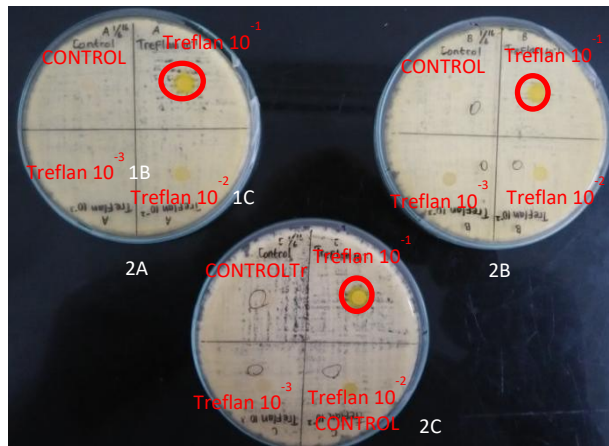


Figure 2 – Inhibition zone of Treflan group on the third day of incubation (2A) Treflan Replicate A; (2B) Treflan Replicate B; (2C) Treflan Replicate C

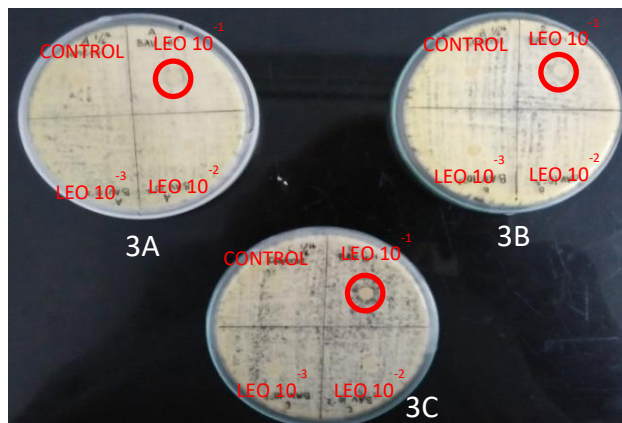


Figure 3 – Inhibition zone in Lentil Essential Oil (LEO) group on the second day of incubation (3A) Lentil Essential Oil Replicate A; (3B) Lentil Essential Oil Replicate B; (3C) Lentil Essential Oil Replicate C

Treflan products reduced damage caused by *Lagenidium sp* [2, 7, 8]. Some culturists have reported trifluralin to be efficacious while others have found it to be ineffective. At the E.R.L.-Marine Culture Facility at Kahuku, Oahu, Hawaii, periodic treatments with trifluralin were less effective compared to a continuous drip system. 0,5 ppm Treflan treatment inhibited *Lagenidium* growth and spread. It reduced the mortality rate of the infected *P. monodon* larval compared to the less effective 0,1 ppm Treflan treatment [9, 10]. In a previous study, Baticados recommended a 20 ppm Treflan treatment for 2 hours. Boonyaratpalin recommended a daily treatment of 0,01-0,05 ppm of Treflan [11, 12]. Treflan treatment should be at 10 ppb every 4 h to contain *Lagenidium* infections [13].

Lentil Essential Oil assessment on *Lagenidium* exhibited 8.38 cm inhibition zone on the second day of incubation on dilution 10^{-1} (100000 ppm). Lentil Essential Oil contains sweet almond oil, lavender oil, coconut oil, olive oil, peppermint oil which functions as antifungal and antimicrobial.

Treflan product and Lentil Essential Oil assessment *Lagenidium sp.* growth exhibited that treflan product is more effective. The Treflan product produces an inhibition zone up to the third day of incubation. On the other hand, Lentil Essential Oil product exhibited an inhibition zone up to the second day of incubation.

CONCLUSION

The study exhibited that Treflan and Lentil Essential Oils are capable to inhibit *Lagenidium sp* growth. Both Treflan and Lentil Essential Oils contain antifungal compounds. Treflan product contains Trifluralin. Lentil Essential Oil contains extraction of sweet almond oil, lavender oil, coconut oil, olive oil, peppermint oil. These are especially effective to inhibit fungal hyphae growth.

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ECONOMIC DIVERSIFICATION: AN INSIGHT INTO SUSTAINABLE AND INCLUSIVE AGRICULTURE WITH SPECIAL REFERENCE TO PAKISTAN

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ABSTRACT

Crop diversification is an important step to deal with the challenges of present and future faced today by agriculture economies. Population explosion in agriculture economies surpassed carrying capacity of resources so endangering inclusion. Our research on economic diversification and government reform measure particularly in agriculture is to deal with sustainability of agriculture economy like Pakistan. The main objective of this paper is to analyze how economic diversification and land reform can prove to be a milestone in tackling the challenges faced by agriculture economy. In order to perform numerical and qualitative analysis of primary and secondary data, the analysis is shown through the SPSS Software. As a result, it was known that through diversification and land reforms, Pakistan's agricultural economy will be strengthened. At the end of the paper, some effective suggestion regarding inclusive agriculture model have been given, which will be important in achieving the said objectives.

KEY WORDS

Economy diversification, inclusive growth, food security, agricultural diversification, farming.

Economic diversification is the method of shifting focus from monopolizes economy to diversify economy of varied sectors and markets. Historically, it's been applied as a method to encourage positive economic process and development. Within the context of greenhouse effects due temperature change suitable adaptation and mitigation practices require. Economic diversification covers all sector of economy with equality. It encourages inclusion and development of every aspect such that trade deficit can be eliminated, its work on self-sufficiency and resourcefulness in every kind of situation. Diversification encourages using low carbon footprint sector, which are less emissive and sustainable for environment. A lot of climate resilient technology has develops today that can increase financial gain in long term in sustainable manner. Shifting from one sector to another for gaining the advantage of diversifies opportunities in employment generation and value addition is necessity today. Diversification is a continuous process for dynamic economic situations. Diversification is grabbing the opportunities through monitoring the scenario of economy sectors volatility and implementing the required action accordingly. Diversification creates an impact among the different sectors of economy. The government should not focus on one sector only instead it should diversify its focus on different sectors to achieve the desired objective to achieve sustainable economic growth. Sudden changes in the economy create the impact globally, like the changes in price of crude oil by the dominated countries will create an effect on

global market. Sudden downfall in the crude Oil prices will effects the oil based economy and creates financial crisis.



Figure 1 – Economic Diversification (Source: Authors compilation)

Note: Figure 1 shows that about diversification of sectors from oil to service, oil to agriculture, agriculture to manufacturing, agriculture to service and vice-versa

Pakistan is the South Asian developing country with a population of 207 million; it is sixth largest populous country but its ranked 38th in rate of GDP. Agriculture is prime moving force in Pakistan's economy as growth is concern; traditional agricultural practices with obsolete technology responsible for stagnant growth. Agriculture contributes a substantial part about 18.9% in GDP of Pakistan; and also among the major earner of foreign exchange reserve through export. Subsequently, agriculture contributes a great role in the financial inclusion of the nation.

According to Pakistan bureau of statistics, labor force survey report 2017-18 reveals that 38.5% of the total workforce employed in the agriculture sector. Approximately 64% population of Pakistan is directly or indirectly depends on agriculture. Agriculture and allied sector also support cottage industries, dairying and food industries. It's a high remunerative sector in term of agricultural export. Agriculture also plays a major role in livestock development that supports dairying sector and meat production. It does also fulfill protein necessity in diet that provides a healthy lifestyle to people of Pakistan. Thus, it is evident from above fact that agriculture plays a multi-dimensional role in the economy of Pakistan. Hence it is called an agricultural based economy. But as per GDP statistics contribution of agriculture is decreasing since 1947. It's become third largest sector from largest contributor of GDP. Its mean greater part of population depend on 18% of GDP, which indicates lower per capita income, highly financial divisive society and lower purchasing power of majority of population. Lower purchasing power results in stagnant industrial sector. Majority of the population is facing nutritional insecurity, unemployment and stagnant growth in every sector of economy [1, 2].

Pakistan has two agro climatic seasons, "Kharif" being the first sowing season beginning from April-June and is harvested in October-December. Rice, sugarcane, cotton, maize, moong, mash, bajra and jowar are major "Kharif" crops. "Rabi", the second sowing season, starts in October-December and is harvested in April-May. Wheat, gram, lentil (masoor), tobacco, rapseed, grain and mustard are "Rabi" crops. Mono-cropping agriculture in Pakistan are playing vital role in terms of mass agriculture production but in terms of food security nutritional security is lacking in food basket of its people.

This paper tries to find the problem and solution of Pakistan agriculture through the crops diversification with reforms in the agriculture sector. The assumptions of this paper are the agricultural Diversification can change the picture of Pakistan agriculture through seasonal crops diversification from existing mono-cropping to multi-cropping methods and securing traditional variety of crops for maintaining genetic diversification of crops that is indigenous. Others reform includes timely cheap credit access, corporate investment

opportunity as Corporate Agribusiness practices and Crops Diversification includes low remunerative to high remunerative crops, Less nutritive to multi-nutrition value crops and Import substitutive production. The present government focusing on quantitative agriculture growth but the demand today is qualitative production needed for nutritional security. Qualitative production is possible through reforms and diversification on micro-level and sub-level [3, 4].

Objective of the Research:

- To find out the reason behind the backwardness of Pakistan’s agriculture;
- To know what are the current and future challenges of food security in Pakistan and how to deal with it;
- To know how diversification can enable Pakistan agricultural progressive and move forward;
- To know what is the flaw in the current Corporate Agriculture Farming policy and how it can be overcome;
- To know how agriculture diversification and land reforms will help in achieving the goal of inclusive growth;
- To find out which model schemes will help to overcome the problems.

This research used both qualitative and quantitative data, it is collected by the researcher from published reports of Government and Non-government agency, research papers, conducted Personal interviews of respondents, panel discussion with economist and open discussion on social networking websites. For critical analysis the data, the SPSS software is used reflecting mean, standard deviation, frequency, percentage.

RESULTS AND DISCUSSION

Generally, the Economy of Pakistan is divided into three major sectors.

Primary: Agriculture is the primary and traditional sector of economy; it is playing a major role in the employment of Pakistan as well as in GDP, it includes important Crops, Other crops, Cotton Ginning Livestock, poultry, Forestry and Fishing. According to Pakistan economic survey 2017-18 agriculture share in GDP is 18.86 % (Figure 2) and of total workforce employed in this sector is 42.3% (Figure 3) [5].

Secondary: Manufacturing and industry are the secondary segments of economy, processing of raw material in final output by human activity included in this sector. Secondary sector included Automotive, Electrical industry, Chemical Industry, Energy industry (according to some sources it is on the border of the tertiary sector), Metallurgical industry, Construction Industry, Food Industry, Glass industry, Textile and clothing industry and Consumer goods industry (all consumables). Currently, industry sector contributes 20.91% (Figure 2) and of total workforce employed in this sector is 22.60% (Figure 3).

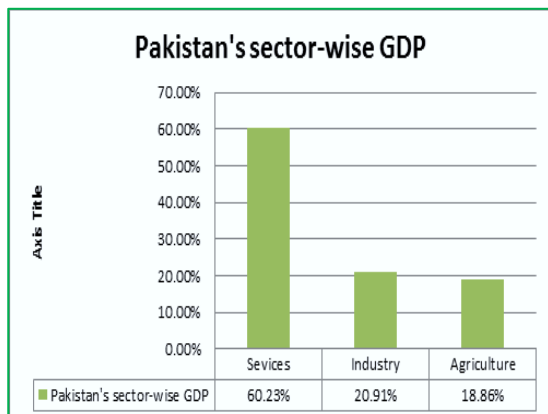


Figure 2 – Pakistan’s sector-wise GDP (Source: Pakistan Bureau of Statistics)

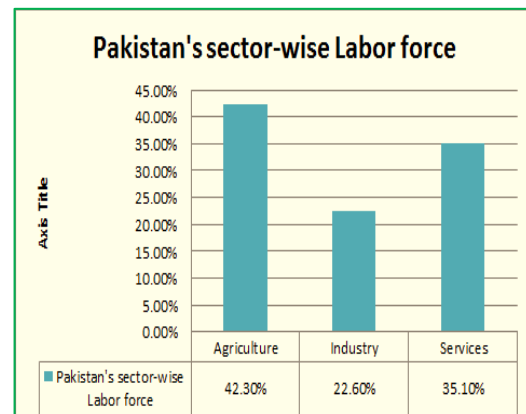


Figure 3 – Pakistan’s sector-wise labor force (Source: Pakistan Bureau of Statistics)

Tertiary: sector covers services provided by human efforts, like works, Knowledge consultancy, Engineering services, Finance Work, Business Knowledge Process Outsourcing, etc. This sector is tertiary but the contribution of this sector to GDP is 60.23% (Figure 2) and this sector is second largest employer after agriculture. Currently, 35% of total workforce is employed in this sector (Figure 3) [6].

Figure 2 shows the Sector wise GDP contribution of Pakistan economy, in which contribution of service, industry and agriculture are 60.23%, 20.91% and 18.86%.

Figure 3 reveals the sector wise workforce data of Pakistan, in which 42.3% workforce engaged in agriculture, 22.60% people employed in industry and 35.1% people employed in service sector.

Statement of the problem in Pakistan Agriculture Pakistan has highly fertile agriculture land for its domestic food requirement and exports as well, but due to lack of dynamic reforms its leads to stagnant agriculture output. Land reforms are still awaited so that the 'welfare soul of the Pakistan' constitution towards inclusive growth is too far from the ground reality. Reforms in agriculture are the need of every nation. Diversified policy can balance the agriculture growth positively. Pakistan agriculture is more concentrated on major crops besides its ignoring the production of horticultural and cash crops like vegetables, fruits and other fibre crop. Pakistani vegetable growers are losing against Indian counterpart by losing foreign reserve as trade deficit across Wahga border. Their rivals are growing vegetables at abundant lower price as they avail subsidies from their government. There are abundant possibilities that the vegetable sector of West Pakistan might lose its identity and ultimately reach to an irretrievable stage if not properly managed by government initiatives such as subsidies intervention, incentives promotion etc. Inflation management through import substitution is not a sustainable solution for future of agriculture. At present, the current news report reveals that Pakistan and India relations are suffering due to cross border terrorism conflict. After the Pulwama terror attack, Indian vegetables producer's banned the export to Pakistan so that Tomato and other vegetables prices are going to high in Pakistan. Diversifying agricultural growth is need of present according to current economic situation. Concentration on major crops production, Import of agriculture products, Exclusive development policies like existing Corporate Agriculture Farming and Pending land reforms are the barrier in inclusive growth of Pakistan.

Needs of Reforms and Diversification for Pakistan's Agriculture. Inclusive growth is a challenge for Pakistan government; currently the present government is trying to achieving it through reforms in agriculture

Importance of Internal-Diversification for Pakistan:

- Food security is a major concern for Pakistan, Diversification will give value addition to nutritious Food production;
- Increase in income of farmers through diversify high value crops production;
- It will help to eliminate the problem of terrorism in unemployed youngster section of the society;
- Diversify crops production (from two seasonal to multi-seasonal crops) also good for soil fertility;
- Help to control food inflation and also minimize the risk of financial and economic crisis;
- It will also minimize the current account deficit problem of the country.

Pakistan's economy is looking for a very rapid progress which requires recurring changes on the on number of levels. Today, Pakistan two main challenges are poverty and food security. For this, the development should sustainable rather than temporary. For inclusive growth of Pakistan, diversification the economy is should be focus for policy makers. Today, increasing unemployment, terrorism, and growing discontent in the lower classes are the major problems facing by the Pakistani government. Due to unemployment, some youths are exclude from main stream of development and forced to joining terrorist organization for securing their part of bread. This is right time for Pakistan government to make specific modern policies for targeted areas in the agricultural sector. Any sector of the economy cannot move beyond reforms. There is a need of improvement on many levels, it is

necessary to classify them into various segments as high, medium, low and subtle and infinitesimally points.



Figure 4 – Agriculture diversification (Source: Millions of Millions of Creative Stock Photos 123rf.com)
 Note: Figure 4 showing the agriculture products diversification from one product to another different products

It is the diversification within agriculture sector (Intra- Diversification). Internal diversification is the need of world because rapid increase in the population of countries leads to rise in challenges of the food security all over the world. So, Diversification inside the agriculture is the need of today world.

Agriculture diversification is the need of world because rapid increase in the population of countries leads to rise in challenges of the food security all over the world. So, Diversification inside the agriculture is the need of today world as shown in Figure 4.

It can be categorized in following manner:

- Crops to crops diversification;
- livestock to livestock diversification;
- Crops to live stock diversification;
- Livestock to crops diversification;
- Seasonal Diversification (Rabi and Kharif to multi-seasonal crops diversification);
- Credit scheme diversification;
- Diversification in crops area of production;
- Investment diversification is also important for Corporate Farming Policy in Pakistan.

Potential of Diversification. Diversification is generally a two way of process just like opportunity cost concept; if the one part is on downfall then the other part have the potential to create the opportunity, but the challenge is how we can grab this opportunity it is so important for government. If the one crop/product is suffering due to higher production and lower prices then we can shift our workforce into another beneficial substitute crops. Economy environment is dynamic in nature, this dynamic nature create negative problem as well opportunity.

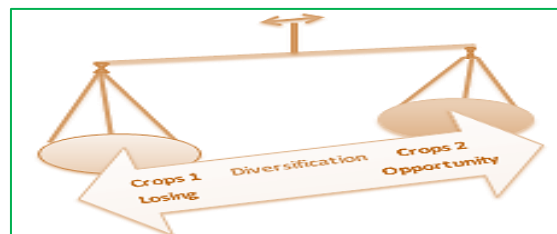


Figure 5 – Potential of Diversification Source (Source: Authors compilation)
 Note: Figure 5 showing the opportunity Libra, in which one crop is losing the price or demand but other crops giving alternative opportunity

Crop diversification. Diversification of crop is important for many economies in many ways. It is beneficial in resolving the main problems like food security, inclusive growth, and

soil fertility. Along with domestic needs, food security of other countries can be overcome through diversification. Food security is a challenge for Pakistan's rapidly growing population for policy makers. High value crops are beneficial to increase the income of farmers; also the challenge of malnutrition can be tackled by diversification of the crops. Mono-cropping consume higher input include fertilizer, water, pesticide, insecticide etc. so less remunerative. Diversification of crop products provides high production and high remuneration to the farmers due low input and sustains the fertility [7].

Table 1 – Agriculture Growth Percentages (Base=2005-06)

Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (P)	Mean ' ΣX_i '	S.D σ_x
Agriculture	3.62	2.68	2.5	2.13	0.15	2.07	3.81	2.422857	1.2114415
Crops	3.22	1.53	2.64	0.16	-5.27	0.91	3.83	1.002857	3.05325899
i) Important Crops	7.87	0.17	7.22	-1.62	-5.86	2.18	3.57	1.932857	4.8717544
ii) Other Crops	-7.52	5.58	-5.71	2.51	0.4	-2.66	3.33	-0.58143	4.8742364
iii) Cotton Ginning	13.83	-2.9	-1.33	7.24	-22.12	5.58	8.72	1.288571	11.823083
Livestock	3.99	3.45	2.48	3.99	3.36	2.99	3.76	3.431429	0.5533964
Forestry	1.79	6.58	1.88	-12.45	14.31	-2.37	7.17	2.415714	8.4260466
Fishing	3.77	0.65	0.98	5.75	3.25	1.23	1.63	2.465714	1.863347
P: Provisional									

Source: Pakistan Bureau of Statistics

Table 1 shows the growth rate of important crops and other crops. Stable growth concern is the need of Pakistan Economy but the standard deviation reveals that instability in overall performance of agriculture sector. Average Growth of other crops is decreasing as compare to important crops. From the point of food security this concept of important crops and others crops should be change.

Nutritious food is also the major concern in food security of Pakistan economy. Crops production should be balanced according to crops demand. Diversification of crops also helpful to control food inflation problem and can help to eliminate the poverty.

Table 2 – Crops Pattern – By Province

Administrative Unit	Per cent Share of Various Crops in Total Cropped Area										
	Wheat	Rice	Maize	Jowar/ Bajra	Cotton	Sugarcane	Oil seeds	Pulses	Orchards	Fodders	Others
Pakistan	42	14	4	2	14	4	2	5	2	9	4
Khyber Pakhtunkhwa	47	3	24	3	*	6	1	5	1	6	6
Punjab	41	14	1	2	15	4	2	6	1	11	2
Sindh	38	20	*	2	20	5	3	1	2	4	5
Balochistan	45	13	2	6	1	*	4	4	10	3	11

Note: 1) Figures may not add up exactly to hundred due to rounding effect; 2) * Percentage less than 0.5.

Table 2 data reveals that the unbalanced situation of crops area according to different crops. As compare to other nutritious crops wheat sowing area is 42% while pulses, fodders, sugarcane, orchards, oilseeds, and others are Total in 26% (5, 9, 4, 2, 2, and 4). This picture shows that disorganized planning for crops production. So, crops diversification should be implemented according to demand.

Beside of Rabi and Kharif crops, multi-seasonal crops can increase the production and income of farmers. In Pakistan, they have shortage of pulses, pulses are crucial for elevation the problem of food security.

Inter-diversification between Crop and livestock is the best mix combination strategy for rural households, who have less than 5 acres of land. This mix farming can increase the income of households as well as it is the best way to overcome the problem of food insecurity. Barley, pulses and green food crops, other high nutritious and high value crops are the most demanded crops that have abundant quantity for human nutrition and relics of these crops are also useful to feed the livestock. Dairy cattle product are full of nutrients so demand of these products are high in all over the world so it is also the best source of income for the rural households [8].

Corporate farming's objective is to maximize profit. To do so, the companies will invest in technology that may increase production (milk, corn, animals, etc.) moreover as lower inputs (feed, fertilizer, blighter management, etc.) moreover as minimize the inherent risks of farming. The advantage that they need over the smaller "family farm" is access to the technology. Corporate agriculture farming also facilitate keep your food bills from apace increasing additionally as it's certain that the ever increasing human population has food on the table.

Corporate Farming law was passed by Pakistan in 2001, under that listed companies might lease land within the country for ninety nine years, broken into 2 periods of fifty years and forty nine years. Besides, the then government had known state lands to lease. Corporate agriculture farming has taken over majority of the Pakistan agriculture share. Majority of agriculture land of Pakistan has been rented out or leased or sold out to foreign companies. United Arab Emirates and Saudi Arab is a big investor who invested the money in corporate agriculture farming. Millions of hectares land has been leased or sold out to corporate investors. Pakistan has divided its crops production in two sub segment; important crops and other crops. Existing policy depicts unbalanced picture of investment flow among all crops and livestock. Table 1 reveals that Instead of Existing CAG policy the agriculture growth of Pakistan is instable in nature, even in year 2014-2016 it was negative. This policy should be diversified, so Investment diversification is needed for corporate agriculture farming policy. Currently majority of the corporate firms have invested in major crops and poultry but other crops are suffering due to higher demands and less production. Corporate agriculture policy needs crops and product wise diversification of land [10].

For inclusive growth of the Pakistan, finance is among main input of agriculture productivity. Changing economic environment conditions create new opportunity for diversify production. We can distribute this diversify opportunity dividend between the rural poor people through the credit diversification policy with a view to achieve inclusive objective.

Table 3 – Agriculture Credit disbursement details of Pakistan

n/n	2016-17	% Share	2017-18	% Share
Farm Credit	196.1	47.9	260.8	45.8
Non-Farm Credit	212.9	52.1	309.1	54.2
Small Farms	74.7	35.1	92.1	29.8
Large Farms	138.2	64.9	217	70.2

Source: Pakistan Economic survey 2017-18.

Table 3 showing the agriculture credit disbursement between farm and non-farm and small farm and large farm details of Pakistan for 2016-17 and 2017-18.

At present the pro-poor credit disbursement policy of Pakistan is not up to the mark From the Table 3 it is clearly mentioned that Government credit disbursement for small farms is 29.8% of total. This following policy called "Diversify Crop credit and Insurance Scheme":

To compensate the risk factor default of farmers, in the case of climate based natural disaster and other loss this scheme will provide them crops risk cover, In 2008 Pakistan made mandatory crop loan insurance scheme, but this scheme is confine to five major crops i.e., wheat, cotton, rice, sugarcane and maize. According to this scheme, the small farmers who are having only up to 25

Acres of land will be benefitted from this scheme because this is mandatory in nature. For implementing this scheme government is contributing the cost of premium only 2%.

Need of land reforms in Pakistan for inclusive growth. Pakistan has total 52.91 million acres land area for farming. According to geographical agriculture location, Pakistan is divided into four provinces; Khyber Pakhtunkhwa, Punjab, Sindh and Balochistan, the most important and largest geographical province is Punjab having 29.33 million acres farm area, it is playing dominantly role in the Pakistan agriculture economy as compare to other provinces. Sindh is second largest province having 9.87 million acres land after Balochistan and Khyber Pakhtunkhwa having 8.14 and 5.57 million acres farming area.

Pakistan's agriculture economy can be called as farms economy because according to the assessments of Agricultural Census 2010, there were 8.26 million farms in the nation. These Agri-farms were working in the area of 52.91 million acres of land. Division of agriculture land among little and huge farms was exceptionally skewed. Farms having less than 5 acres of land had 64 percent (5.35 million) of absolute private farms, however they worked just 19 percent of the all-out farming part (10.18 million). Those, which were 25 acres or more of land having just 4 percent of the all farms (0.30 million), yet they have control of 35 percent of the all-out agrarian land (18.12 million acres). Average farms area in country was 6.4 acres of land and average cultivated area every farm was 5.2 acres.

Pakistan land reforms. Land reforms in Pakistan have a long and fairly checkered history. The British had less enthusiasm for the issue as they depended on the help of a few powerful proprietors. In spite of the fact, that there had been some restricted changes in the years paving the way to 1947, every real change date from the years after freedom. Very quickly the different commonplace lawmaking bodies passed a few rules whereby the jagirdari frameworks were abrogated and occupants secured. The real changes, be that as it may, came in three phases: the first amid Ayub Khan's military law in 1959; the second and third amid Zulfikar Ali Bhutto's standard during the 1970s. These reforms imposed the ceiling on landholding to achieve the aim of inclusive growth.

Table 4 – Statistics of Questionnaire response

n/n		What is your Profession? 1	Internal diversification of agriculture sector can increase the GDP of Pakistan 2	Crop diversification can increase the income of farmers 3	Crop diversification is necessary for food security and soil fertility 4	What are the reasons for rural poverty? 5
N	Valid	104	104	104	104	104
	Missing	0	0	0	0	0
Mode		5.00	2.00	2.00	2.00	5.00
Minimum		1.00	1.00	1.00	1.00	1.00
Maximum		5.00	2.00	2.00	2.00	5.00

Table 5 – Statistics of Questionnaire response

n/n		"World bank official report mentioned 70 million population of Pakistan is facing food insecurity. For providing food security guarantee to its people in future, Pakistan should make the legislation like neighborhood for Food Security with land reforms" 6	Agriculture sector can satisfy the needs of Pakistan's population itself as well as it can export to other countries 7	Can Pakistan achieve inclusive growth without land reforms? 8	During 1959 And 1972 Pakistan government had constituted land reforms regulations for inclusive development of Pakistan but after the verdict of Qazalbash Waqf vs Chief Land Commissioner Supreme Court declared that this 1972 regulations were attacked as being against Islamic injunctions and unconstitutional". Do you agree that these types of regulations should be passed again through constitutional amendments? 9	New Land reforms should be included ceiling on agriculture land holding like 1972 regulations with some modifications 10
N	Valid	104	104	104	104	104
	Missing	0	0	0	0	0
Mode		2.00	2.00	2.00	2.00	2.00
Minimum		1.00	1.00	1.00	1.00	1.00
Maximum		2.00	2.00	2.00	2.00	2.00

So these reforms in Land changes were constantly dubious. It was asserted by rivals that they were un-Islamic and that they encroached on the directly to claim, use and appropriate property as secured by the constitution. Matters at long last reached a crucial stage under the watchful eye of the Supreme Court on account of Qazalbash Waqf v Chief Land Commissioner in which both the 1972 directions were assaulted as being against

Islamic orders and illegal. The Supreme Court concurred. Of the 1972 controls, the Supreme Court proclaimed that passages 7, 8, 9, 10, 13 and 14 and hence thusly 18 were unlawful as being against Islamic directives. The striking down of sections 8 and 18 toppled the principle changes accomplished [11].

Table 6 – Statistics of Questionnaire response

n/n		new land reforms Land ceiling should be: 11	Do you agree that the existing Corporate agriculture farming policy is a barrier to achieve inclusive growth and food security, it should be change 12	Do you agree that Government of Pakistan should lease the agriculture land to own landless rural people instead of giving to Foreign corporate for inclusive growth 13
N	Valid	104	104	104
	Missing	0	0	0
Mode		4.00	2.00	2.00
Minimum		1.00	1.00	1.00
Maximum		4.00	2.00	2.00

Table 7 – Questionnaire response Analysis (Question mentioned in table 4, 5 and 6)

Question	Response	Frequency	Percent	Valid Percent	Cumulative Percent
1	Agriculturist/Farmer	31	29.8	29.8	29.8
	Lawyers	11	10.6	10.6	40.4
	Journalist	5	4.8	4.8	45.2
	Social Activist/N.G.O Volunteer	15	14.4	14.4	59.6
	Researcher from Economy's field	42	40.4	40.4	100
	Total	104	100	100	
2	NO	11	10.6	10.6	10.6
	YES	93	89.4	89.4	100
	Total	104	100	100	
3	NO	11	10.6	10.6	10.6
	YES	93	89.4	89.4	100
	Total	104	100	100	
4	NO	7	6.7	6.7	6.7
	YES	97	93.3	93.3	100
	Total	104	100	100	
5	Asymmetrical distribution of Agriculture land	7	6.7	6.7	6.7
	Lack of technical skills/T raining	5	4.8	4.8	11.5
	Corporate Agriculture Farming policy	7	6.7	6.7	18.3
	Poor crops finance scheme	3	2.9	2.9	21.2
	All of the above	82	78.8	78.8	100
Total	104	100	100		
6	NO	6	5.8	5.8	5.8
	YES	98	94.2	94.2	100
	Total	104	100	100	
7	NO	5	4.8	4.8	4.8
	YES	99	95.2	95.2	100
	Total	104	100	100	
8	NO	25	24	24	24
	YES	79	76	76	100
	Total	104	100	100	
9	NO	26	25	25	25
	YES	78	75	75	100
	Total	104	100	100	
10	NO	30	28.8	28.8	28.8
	YES	74	71.2	71.2	100
	Total	104	100	100	
11	50 Acres - 10 0 Acres	7	6.7	6.7	6.7
	100 - 150 Acres	8	7.7	7.7	14.4
	150 - 200 Acres	15	14.4	14.4	28.8
	Between 200 - 500 Acres	74	71.2	71.2	100
	Total	104	100	100	
12	NO	50	48.1	48.1	48.1
	YES	54	51.9	51.9	100
	Total	104	100	100	
13	NO	24	23.1	23.1	23.1
	YES	80	76.9	76.9	100
	Total	104	100	100	

Landless of rural population is concerned with inclusive development. It is clear from the report of the Statistics Department of Pakistan that the farmers who have less than 25 acres of agricultural land, their crops production are more than big landowners. So, Constitutional amendments are requiring for agriculture land reforms now.

From the prepared scheduled questionnaire, the above question asked by the researcher to targeted respondents through telephone, Social networking contacts, panel discussion and Personal interview, all the respondents were having the higher qualifications from the interdisciplinary research areas and the respondents 'are from different countries includes Pakistan, India, Bangladesh, Nigeria and Iraq. This study was focused on subject experts a total of 104 respondents. Table 4, 5 and 6 related with statistics of all questions about minimum, maximum and mode of response are given.

Table 7 (Question 1) showing the participated respondent profession, out of which 29.8% are agriculturist, 10.6% are lawyers, 4.8% are journalist, 14.4% are Social activist from N.G.O and 40.4% are researchers from Economy field. 89.4% respondents agreed that internal diversification of agriculture can increase the GDP of Pakistan (Question 2) and the same percentage respondents were agree about crops diversification can increase the income of farmers (Question 3). Total 93.3% respondents believe that crop diversification is necessary for food security and maintaining the fertile strength of the land (Question 4). In the response of the question about reasons for rural poverty, 78.8% people believe on all mentioned response but 21.2% of people had opinions in different ways, out of which the respondents (7.8% asymmetric distribution of land, 4.8% lack the technical skill, 6.7% Corporate Agriculture Farming, and 2.8% poor crop finance scheme) consider the cause of rural poverty (Question 5). 94.3% people agreed that Pakistan govt. should make the legislation for food security of its people (Question 6). 'Agriculture sector can satisfy the needs of Pakistan's population itself as well as it can export to other countries' 95.2% respondents agreed with this statement. Question 7 reveals that 79% respondents believe that Pakistan cannot achieve inclusive growth with land reforms. Majority of the respondents (more than 70%) believe that Pakistan should make the legislation on land reforms like past regime through constitutional amendments and these legislation should have the ceiling on land holding (Question 8,9 and 10). Only 51.9% respondents agreed that Corporate Agriculture Policy is barrier in inclusive growth (Question 11) and 76.9% respondents believe that Pakistan govt. should lease the agriculture land to own landless rural people instead of giving to Foreign corporate for inclusive growth (Question 12 and 13).

PROPOSED SUGGESTIONS

On the basis of analysis from secondary data and primary data, following suggestion can be implemented to achieve the goal of inclusive growth and food security.

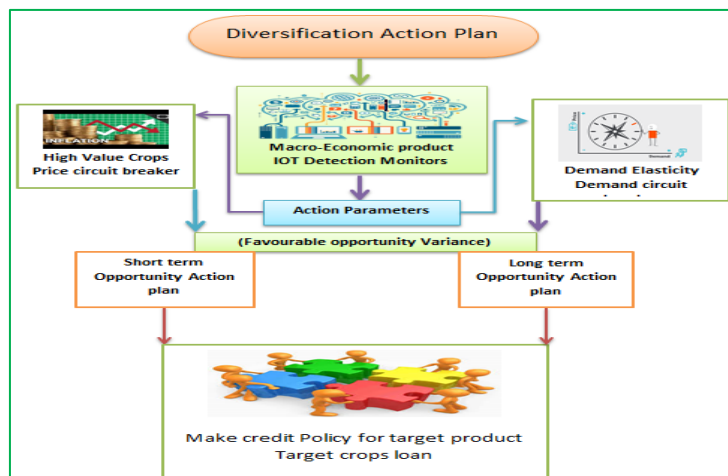


Figure 6 – Diversification Action Plan Model (Source: Authors compilation)

This plan can be implemented through IOT (Internet of Things) technique, for execution of this plan; we have to make specific software according to macro-economic action plan requirement parameters. Parameters will includes Products price (High Value and low value products) and demand. Circuit price breakers and circuit demand breakers have to be determines for find out the opportunity information. Product wise import details have to monitor through this software. Segment wise production details also have to be maintaining in this software. This Execution plan will identify the two types of opportunity based information:

- Short Term Action Plan Opportunity;
- Long Term Action Plan Opportunity.

Software will be automatically forward information to policy making department. After revive the information, they department will prepare credit policy for the crops.

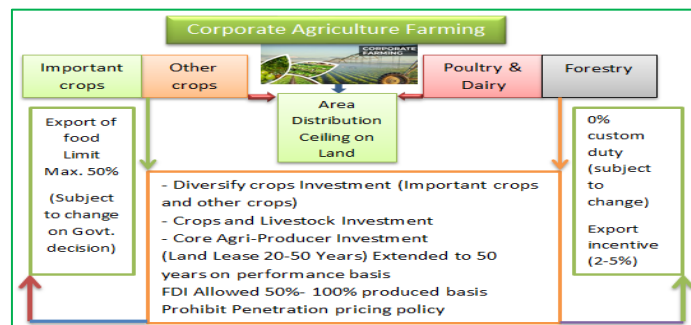


Figure 7 – Corporate Agriculture Farming Model Source (Source: Authors compilation)

After analyzing the primary and secondary data, it is clear that existing Corporate Agriculture Farming require some changes. From the table 2 finding reveals that the growth of agriculture is not consistent towards positive context. Majority of Corporate firm are focusing on important crops, cotton and livestock but they are ignoring other crops which are so much important for food security so due to concentration on specific crops, the other nutritious crops prices are going high and this hike in price are affecting the interest of poor people. This policy should be change on diversification basis. The below plan is diversified into all segment of agriculture. Investment should be on diversified basis. Land lease time should be 20-50 years. Export of food should be maximum 50%. Investment diversification can be categorized into; Diversify crop Investment (Important and Other crops) subject to crops wise ceiling on land, Crops and livestock investment scheme, Core Agri product scheme. The entire scheme in this model prohibited penetration price policy of investors.

FDI Model For Core Crops Small Investors & Agriculture Finance And Insurance Scheme For Core Domestic Producer
FDI With Risk Insurance Cover
Domestic producer Finance & Insurance Scheme
Core Crops Diversification Technology
Initially Land Lease For 10 Years (Lease Extended To Next 10 Years)
Highly Value Nutritious Crops
Multi-Seasonal Crops(Three Sowing Diversify Crops)
Target Crops Production
Minimum 50% Export
Export Incentive 2%-5%

Figure 8 – FDI Model for Core Crops Producer Small Investor and Agriculture Finance and Insurance Scheme for Core Domestic Producer (Source: Authors compilation)

These two schemes especially for those products for which demand is high, high price products and production of these crops are always negative. We can invite the foreign small investors who have the core expertise to producing this product. These schemes will provide risk insurance cover to foreign investor. Even this scheme provides finance and insurance

cover to domestic producer who have small landholding less than 25 acres. For domestic producer, this scheme will provide low interest finance. In this scheme land lease condition are two flexible, initially lease will be given for 10 to 20 years according to investor and it can be further extended for another 10 years. Only those producer who have core expertise past experience to sowing this crops, they can avail the benefit of this scheme. Target production condition will be the part of the scheme, if the producer will fail to achieve the minimum production license of investment will be withdrawn. This scheme is export oriented; exporter will get incentive on export of crops.

Agriculture start-up finance scheme for newly agriculture graduates. These following schemes will provide finance and other supports to fresh agriculture graduate they can become future entrepreneur in agriculture and they will contribute to GDP of the Pakistan through the uses of modern approach of farming:

- Agriculture start-up finance scheme for millets products (wheat, barley, maize etc.);
- Agriculture start-up finance scheme for vegetables and fruits products;
- Agriculture start-up finance scheme for poultry products;
- Agriculture start-up finance scheme for dairy products.

CONCLUSION

Pakistan's agricultural economy is going through its stagnant phase. In this paper, it has been attempted to know how the agricultural economy of Pakistan can be brought back. In this research, it has been envisaged that the food security requirements of Pakistan's growing population can be met by internal diversification and land reforms and these policies will be effective in the goal of inclusive development. The result of this research has come out that the internal diversification and land reform will prove to be a milestone in the agriculture of Pakistan. In this paper, some models have also been suggested in this regard which will prove to be very useful in internal diversification.

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FACTORS INFLUENCING COMPETITIVENESS OF SMALL AND MEDIUM INDUSTRY OF BALI: PORTER'S FIVE FORCES ANALYSIS

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ABSTRACT

Small and Medium Industry (SMI) is a stimulus for the Indonesia. The existence of SMI is not only contributes significantly to GDP but also to absorb labour, and to even the distribution as a result of development and poverty reduction. The SMI has also given its role as a safeguard for the national economy during the crisis. SMI has made a significant contribution to the development of the Indonesian economy, especially Bali, through export, trade and any supporting sectors for employment growth. Along with the globalization, SMI must increase competitiveness in order to survive. This literature review seeks to explore and find various influential factors and competitive strategies to improve SMI competitiveness in Bali with an analysis of Porters' Five Forces. The method used is descriptive based on scientific journals.

KEY WORDS

Competitive strategy, SMI, Porter five force, competitiveness, Bali.

Long-term economic development shown by GDP growth will bring a fundamental change in the economic structure, from the traditional economy to agriculture as the main sector towards a modern economy dominated by non-primary sectors, especially manufacturing industries with increasing returns to scale (positive relations between dynamic output growth and productivity growth as the main motor driving economic growth (Weiss, 1988). This is shown by the rapid growth from year to year in Indonesia's non-primary sector namely Small and Medium Industries (SMI). In Indonesia, SMI has a strategic role in the national economy. This can be seen from the number of business units reaching 3.4 million units in 2013, or more than 90% of the national industrial business units. This role is also reflected in the absorption of SMI workers that absorbed more than 9.7 million people in 2013, or 65.4% of the total employment of the non-oil and gas industry sector (Ministry of Industry, 2015). In accordance with national data, SMI in Bali also shows a significant contribution to the economy of Bali Province. Based on data from the Department of Industry and Trade of the Province of Bali in Table 1, it can be seen that the raw materials / supporting material SMI values in Bali Province amount to Rp. 4,098,246,861. The role of the SMI in the development of a country's economy is evidenced by the reduction in unemployment and the creation of new businesses that continue to emerge (Delmayuni et al., 2017).

Table 1 – Recapitulation of the Directorate of Creative Industries in Bali Province in 2017

Regency / City	Number of Business Units	Labor (People)	Value of Investment	Production Value	Value of raw materials / supporting material
Jembrana	1.75	8.712	73.933.433	429.536.074	284.958.545
Tabanan	878	7.606	542.345.198	567.236.330	358.676.878
Denpasar City	4.074	30.862	282.899.240	1.416.526.146	381.970.595
Badung	1.23	14.943	72.444.562	1.246.268.358	1.060.316.303
Gianyar	943	15.058	2.989.867.354	4.841.849.850	1.662.678.726
Bangli	4.167	11.741	24.371.701	363.330.010	150.530.143
Karangasem	512	4.21	25.737.579	32.213.224	20.447.486
Klungkung	461	4.617	29.274.729	92.890.481	54.968.495
Buleleng	977	6.22	22.012.121	183.092.572	123.699.691
Total	14.992	103.969	4.062.885.917	9.172.943.045	4.098.246.862

Source: Department of Industry and Trade of Bali Province.

The enactment of the ASEAN Economic Community (MEA) along with free trade agreements (Free Trade Agreement) between countries in ASEAN, has opened opportunities for SMI players to enter new markets. Indonesian SMI must improve product quality to be able to compete in the ASEAN market and more broadly on the world market. SMI also faces many problems, namely limited working capital, low human resources, and lack of mastery of science and technology (Sudaryanto and Hanim, 2002). Another obstacle faced by SMI is the connection with unclear business prospects and unstable planning, vision and mission. The opportunities and challenges that exist, make the SMI must have careful preparation especially for the SMI drivers in Bali. To that end, SMI Bali requires a strategy that will make these SMI competitive.

According to a scientific article by Chirantan Basu entitled "The Importance of Porter's Diamond & Porter's Five Forces in Business", in an effort to achieve economic profit, various competitiveness analysis models have been developed such as the model of five forces Porter analysis, diamond Porter model, Nine-Power Factor model International Competitiveness and others. Each analysis has its own character so that its use is adjusted to the needs and conditions. For example, the five-forces porter model covers more than five factors (bargaining power of suppliers, bargaining power of buyers, threat of new entrants, threat of substitute product or service, rivalry among existing firms) that directly affect the competitive level of an effort in industrial world by emphasizing industrial structure and profit margins. On the other hand, the Diamond Porter model discusses the four factors (factor conditions, demand conditions, company strategies, supporting industries) that affect the competitive environment of a country and industry in that country. Diamond porters also add another factor: the role of government and chance, which is said to have an important role in creating National Competitive Advantage (NCA). The main point of the Diamond Model, Porter suggests a model of self-reinforcing competitiveness, in which domestic competition stimulates the growth of industry and simultaneously forms sophisticated consumers who always want improvement and innovation. Furthermore, DM also promotes industrial clusters. Broadly speaking, the main difference between the two models lies in its function, where the five forces porter model is useful in helping a company to evaluate the industry being operated with the aim of determining the industrial structure and profit margins, while the Diamond Porter model functions in assisting competitive profit analysis owned by a company against a competing company or rival.

Putra and Maulana (2018) show that company performance can be determined by internal and external factors. Both of these factors must be considered in the SWOT analysis. The research also considers it necessary to optimize the supporting components of the Diamond Porter Creative Industry so that the competitiveness of the Indonesian Creative Industry is increasing amidst the world industrial market. The Diamond Porter model can be seen in Figure 1.

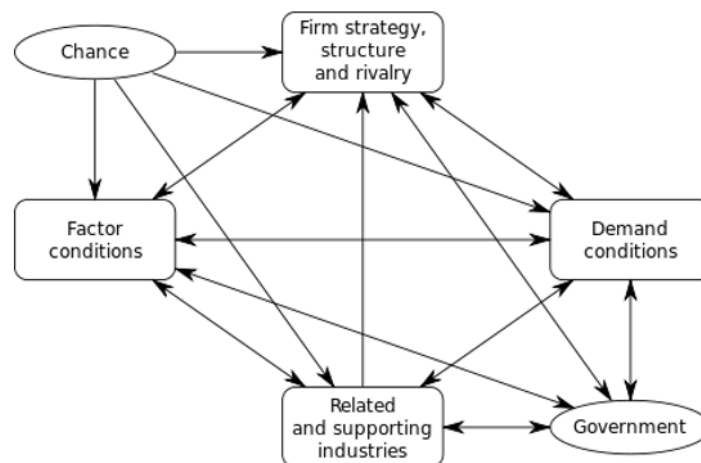


Figure 1 – Porter's Diamond Model (Source: Porter, 1990)

In addition to the Porter Diamond Model above, there is also a competition theory proposed by Michael Porter that can be used to analyze competition, how a competitive environment will affect the marketing of a product, namely the theory of "Porter's Five Forces Model". Porter believes that companies are not only competing with companies in the industry today. The model in Figure 2 can describe the business situation that is being carried out and can also help in knowing the advantages of the current and future competition positions. So that companies can increase strength, anticipate weaknesses and avoid companies in making wrong decisions.



Figure 2 – Porter's Five Forces Model (Source: Porter, 2000)

Meanwhile, Dong-Sung Cho (2003) made modifications to the Diamond Porter Model because there were several disadvantages to the model. The modification model is known as the nine-factor model. The nine-factor model has four physical determinants of international competitiveness, namely the resources bestowed, the business environment, related industries and supporters, and domestic demand. In addition to physical factors, there are also four human factors, namely workers, politicians and bureaucrats, entrepreneurs and professional managers and engineers. While external opportunity events are the ninth factor, as in figure 3.

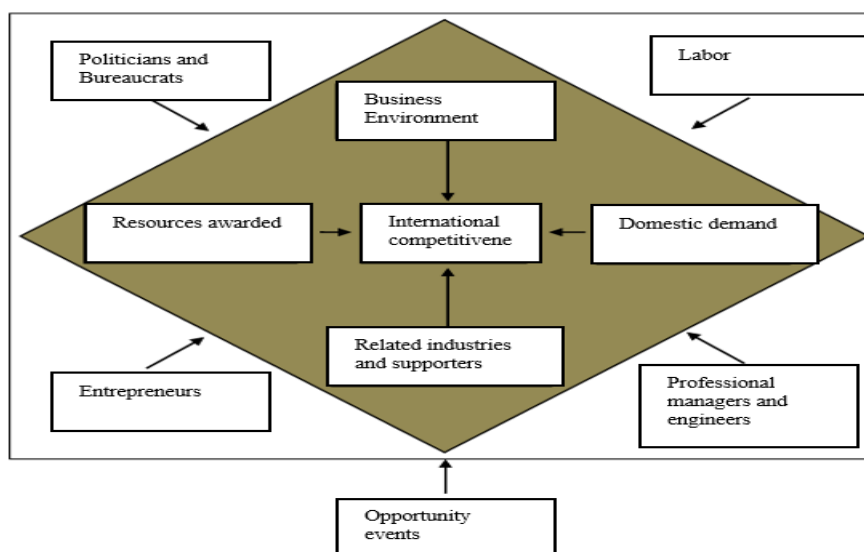


Figure 3 – Model Nine Factors of International Competitiveness (Source: Cho, 2003)

RESULTS AND DISCUSSION

Companies formulate strategies to pursue competitive advantage when they strive to improve or maintain their performance through independent actions in certain markets or industries. By using effective competitive strategies, organizations find industry opportunities and learn about customers (Pearie John, 2008). Competitive advantage is the heart of the company's performance in competitive markets. Basically, competitive advantage grows from the value that the company can create to its buyers. The value offered is certainly something different and not owned by competitors. This value or benefit is paid by the buyer for the product or service produced by a company. To create and shape the value needed a variety of careful planning and appropriate strategies, one of which is good management. (Rahma and Pradhanawati, 2015).

Competitiveness is productivity which is defined as output produced by labour (Porter, 1990). Competitiveness is a concept that refers to the ability of a company to compete with other companies to create value. Competitiveness can be created or enhanced by applying the right competitive strategy, one of which is to manage resources effectively and efficiently. In addition, the determination of the right strategy must be adjusted to all activities of the company's functions, so that it will create company performance in accordance with what is expected even more and can produce value.

Porter's Five Forces model created by Michael Porter, an expert and professor at Harvard University in 1979 aimed at describing the framework as an analysis of the development of a business. This model can be used for large and small businesses and businesses that are already running or are just starting. Michael Porter has developed the most influential industrial analysis model in the field of industrial competition analysis, while also contributing to the general theory of competitiveness and competitive advantage. The model, consists of five main factors: (1) The bargaining power of suppliers (Bargaining power of suppliers); (2) Bargaining power of buyers; (3) Newcomer threats (Threat of new entrants); (4) Threat of substitute products (Threat of substitute product or service); and (5) Competition between companies in industry (Rivalry among existing firms). This Porter model plays a role in measuring competition intensity, profit potential or industry profitability and for assessing the attractiveness or absence of an industry (degree of attractiveness) (Porter, 2000).

Previous studies by Barney (2007) revealed that competitive advantage is a condition in which a company is able to create economic value more than its competitors. In simple terms, economic value is the difference between the acquisition of benefits felt by consumers who buy products or services purchased.

Factors Affecting Competitiveness of SMI in Bali. Widyasari's (2014) says that there are several internal factors which are problems to compete with, including the problem of scarcity of raw materials; the increase in fuel prices, increases in electricity rates, and increases in labour costs have resulted in high production costs; limited human resources in the field of product design and technology; lack of product promotion; lack of entrepreneurial motivation; most of the machines/equipment used are over 20 years old so they are not efficient; and still low product quality. While a number of external factors are the economic crisis that occurred in export countries such as the US, Europe and Japan, and the weakening of the value of the Rupiah against the US Dollar that has occurred in recent years has resulted in increasingly expensive imported raw material costs. Further said by Widyasari (2014) that the government has taken several steps to overcome these problems, including facilitating international exhibitions in the country; HR training in production technology, financial management and marketing; import of leather raw materials including Australia, Bangladesh and India to meet the demand for raw materials; machine footwear industry restructuring program and leather tanning; and serious efforts from producers and the government to look for new markets outside the export destination countries that are being hit by the crisis.

Competitive Strategies for SMI in Bali. According to Porter (2000) in analyzing competitive strategies can see from several things, namely (1) Porter Generic Strategy which

is a general competitive strategy of a company, (2) Low Cost Strategy (Cost Leadership) which emphasizes efforts to produce standard products (same in all aspect) with a very low cost per unit, (3) Product Differentiation Strategy (Differentiation) by encouraging companies to be able to find their own uniqueness in the target market, and (4) Focus Strategy used to build competitive advantage in a market segment that tighter. Analysis of business development strategies based on the five forces Porter approach is carried out by evaluating 5 conditions, including competition conditions among rival companies, potential entry of new competitors, potential development of substitute products, bargaining power of suppliers and bargaining power of consumers.

Competition between rival companies is usually the most powerful of the five competitive forces. According to Porter (2000: 12), the strategy carried out by a company can succeed only to the extent that it produces a competitive advantage over the strategies run by competing companies. Changes in strategy by one company may be responded to with countermeasures, such as price reductions, quality improvements, feature enhancements, service provision, extended warranty, and intensified advertising. Competition between companies occurs because one or more competitors feel pressure or see opportunities to improve positions.

According to Pearce and Robinson (2008) strategy is a large-scale plan, aiming at the future to interact with competitive conditions in order to achieve company goals. Whereas according to Mintzberg (1995), the strategy is a pattern or plan that integrates the main goals of an organization, policy and sequence of activities into a unity. A well-structured strategy can help, organize and allocate organizational resources into an active and distinctive activity based on internal competencies and relative weaknesses of the company and can anticipate environmental changes.

Another opinion by Barney (2002) defines strategy as a company theory about how to compete successfully. In general, the implementation of company theory on how to compete will have three implications for the company's competitive position, namely: (1) competing very successfully to obtain competitive advantage, that is if the actions of companies in an industry or market are able to provide added value and if there are only a few (few) companies capable of carrying out similar actions; (2) compete successfully to gain competitive parity, that is if the actions of companies in an industry or market are able to provide added value and enough companies are able to take similar actions; (3) compete unsuccessfully to obtain competitive disadvantage, that is if the actions of companies in an industry or market fail to provide economic added value.

According to Tambunan (2001), the level of competitiveness of a country in the international trade arena is basically determined by two factors, namely the comparative advantage factor and the competitive advantage factor. Furthermore, the factor of comparative advantage can be considered as a natural factor and a competitive advantage factor is considered a factor that is acquired or can be developed/created. In addition to these two factors, the level of competitiveness of a country is also influenced by what is called Sustainable Competitive Advantage (SCA). This is especially in the framework of facing the level of global competition that is increasingly becoming so tight or Hyper Competitive.

Previous research by Rahma and Pradhanawati (2015) produced findings that are based on the five forces porter method, so that the business strategy that can be developed by SMI Lunpia Kings is a low-cost strategy, where Lunpia Kings SMI are expected to increase the focus of efforts to create Lunpia products at relatively low prices to reach the middle-class segment.

The results of Ikhsani and Budiningharto's (2015) mention that the analysis of industrial competitiveness can be done using industry analysis of five strength models of the Porter model. The five Porter powers will influence how much the competitiveness of an industry in a market. According to Porter, the industry competition is influenced by several factors, including the intensity of competitive competition between competitors (existing competitive rivalry between competitors), the strength of the providers (bargaining power of suppliers), the strength of consumers (bargaining power of customers), the threat of newcomers (threat

of new entrants), Threats from threat of substitute products. Based on the analysis of Michael Porter's strength, it can be seen that the results of the bargaining power of suppliers, bargaining power of buyers, the threat of new entrant, and the Threat of substitute products show that these factors illustrate favourable competition for the metal processing industry in Ceper. Whereas for the existing competitive factor, the rivalry between competitors describes the negative competition and tends to be unprofitable for the metal processing industry in Ceper.

Based on previous research by Nurhayati (2016) who examined the competitiveness of SMI Batik in Indonesia, it was found that increasing the competitiveness of batik SMI in Indonesia could be done by examining the dimensions of competitiveness in order to have an advantage to compete in the Asian free trade arena (AEC) There are several strategies that must be put forward in an effort to increase competitiveness, one of which is through improving the quality of human resources. The more effective formation of HR competitiveness of batik SMI actors can refer to the theory by Hitt et al. (2000), that there are several components forming competitiveness in which one with another is continuously interrelated. These components begin with resources that have capabilities, then with their capabilities can be formed core competencies in the company. This core competency must then be developed as a source of excellence to create competitiveness, where companies that have competitiveness can be said as companies that have performance excellence. The linkages between the components forming competitiveness proposed by Hitt et al. (2000) can be explained in Figure 4 below.

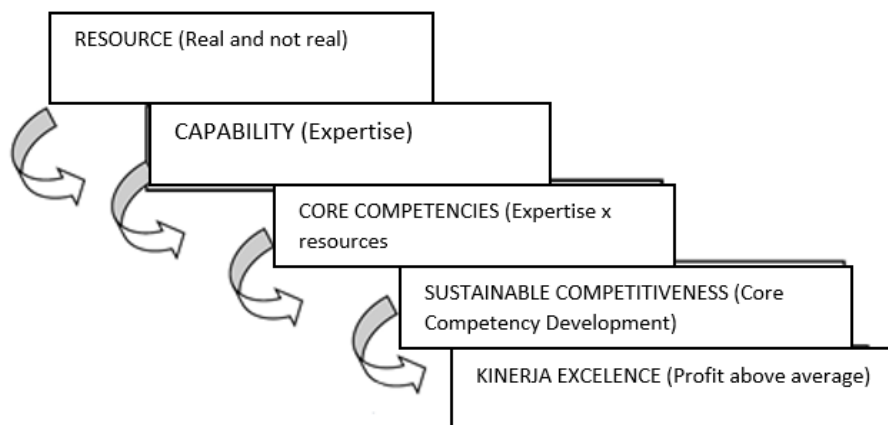


Figure 4 – Components for Forming Competitiveness (Source: Hitt et al., 2000)

Other strategies in an effort to increase competitiveness are through business or business efficiency. Business efficiency implies that in producing goods or services the company achieves economies of scale, namely the scale of a business carried out with a minimum average cost. Economical business scale can be achieved if the turnover or volume is large (large scale). The strategy that can be done by batik SMI is to integrate (collaborate) between one SMI and another SMI. The cooperation that can be carried out includes joint ventures to purchase batik raw materials and colouring drugs. With a joint venture like this, the amount of material purchased becomes large, so that it will obtain efficiency both from the cost of the purchase and from the discounted price. The results of the study show that there are already several batik SMI that have collaborated in purchasing raw materials and colouring drugs (especially imported ones), but not all batik SMI have carried out such cooperation. Therefore the government (local government) must facilitate cooperation in the procurement of raw materials and batik colouring drugs so that they can carry out business more efficiently.

The last strategy discussed in an effort to improve competitiveness is through supporting regulations. The government is the party most responsible for the preservation of batik as an intangible cultural heritage owned by Indonesia. Based on the results of the

study, it is known that the government has issued policies aimed at protecting Indonesian batik, but the reality in the field shows that the rules made have not fully supported the SMI SMI. Therefore it is necessary to formulate policies that are more pro-SMI, both at the central and regional levels.

Based on the strategies described by Nurhayati (2016), in general, it can also be applied in an effort to develop the competitiveness of SMI in Bali. Improving the quality of resources, both real and unreal, as well as capabilities in the form of expertise and skills of SMI can contribute significantly to increasing the competitiveness of SMI. Both of these are related to Nurhayati's third strategy (2016), namely the role of government in shaping regulations and programs that favour SMI. In addition, a business efficiency strategy that emphasizes a large scale economy is also an innovative proposal that is interesting and potentially promising to be applied to SMI in Bali. This is because there are not many SMI in Bali that collaborates between SMI that can provide more benefits but also reduce the costs needed because of the system of sharing the burden among SMI in collaboration.

Research on other competitiveness was carried out by Putra and Maulana (2018) with the result that efforts to improve the competitiveness of the footwear industry cluster in Tamansari District can be carried out with the following priority strategies, namely promotion and system of selling products online, implementing operational standards and product quality, foster good relationships with employees, buyers and suppliers, and foster good relationships with suppliers, and attend footwear exhibitions. Some of these strategies have been implemented by SMI in Bali, such as fostering good relationships with economic actors (suppliers, traders, buyers) because SMI in Bali to adopt a traditional family system and are close to each other. Another strategy is the affirmation of a more systematic work environment such as online marketing and sales. This is taking into account the economic situation of the MEA and globalization and the development of science and technology which has led to a shift in trends from offline to online business. In addition, the application of SOPs and quality control and actively participating in exhibitions can be innovative strategies that can be applied in the effort to develop the competitiveness of Bali SMI.

The results of other previous studies conducted by Hubeis and Pandjaitan (2012) show a strategy to increase SMI competitiveness by (1) increasing collaboration to maintain continuity of raw material availability between regions; (2) building SMI product industrial areas; (3) increasing the role of private and tertiary government through development research. With the large number and variety of SMI in Bali, the strategies used are not the same for each SMI.

The results of the Lestari et al. (2013) states that based on the Revealed Comparative Advantage (RCA) analysis method and the Competitive Profile Matrix (CPM) analysis the priority strategies that can be taken to improve the competitiveness of Indonesian processed tuna are to pay attention to production and marketing factors, such as (1) improving processed Indonesian tuna, (2) encouraging overcoming tariff and non-tariff barriers, (3) increasing market development and promotion knowledge. Strategic priorities for human factors and institutions are (1) increasing the government's role in developing the tuna processing industry, (2) increasing human resource capacity that is able to handle quality, (3) eradicating and controlling illegal fishing. Based on CPM analysis, the three factors of production and marketing greatly influence the competitiveness of tuna, namely (1) the quality of processed tuna produced, (2) tariffs and non-tariffs and (3) development and promotion markets.

Research by Sudaryanto et al. (2013) stated that the strategy to develop SMI in Indonesia was inseparable from banking support in lending. Currently, the credit scheme that is very familiar in the community is the People's Business Credit (KUR), which is specifically intended for SMI with a decent business category, without collateral. In addition, the strengthening of SMI companion institutions can be done through easy access and increased capacity building in the form of training and research activities that support the provision of credit to SMI. While the strategy to anticipate an increasingly open and competitive market mechanism, especially in the ASEAN region, is market control, which is a prerequisite for increasing the competitiveness of SMI. The way that can be done in order to master the

market is through the ease and speed of SMI to obtain information, both information about the production market and the production factor market to expand the product marketing network produced by SMI. Information technology applications in SMI will facilitate SMI in expanding markets both domestically and overseas markets efficiently. The establishment of an IT-based SMI Development Center is considered capable of encouraging the growth and development of micro, small and medium enterprises in the current era of information technology.

On the other hand, there have been debates that have arisen over the past few decades among scholars who consider Porter's principle of five forces to be irrelevant to the development of present economic conditions (O'shaughnessy, 1984; Speed, 1989; Dulčić et al., 2012). The most common argument from the counter side is that the rapid and rapid progress of science and technology has changed the conditions of the industrial and market environment. The study by Karagiannopoulos et al. (2005) emphasizes mainly about the magnitude of the impact of internet utilization on current economic developments. Pre the soaring popularity of the internet, in general, every industry has a separate physical body and information body, where these conditions result in difficulties in accessing information to the industry concerned and influencing the competitive potential of the developing industry. Another argument states that Porter's model of five forces is too static and inflexible to changing trends such as ethnic composition in an increasingly varied population and new technological innovations and does not consider time or time, so it is difficult to apply the principle of five forces to the environmental markets that have dynamic competitive properties (Dess et al., 2005). The five forces Poter model also tends to ignore the role of individual companies and only focus on industry and group structure (Indiatsy et al., 2014).

Nevertheless, the study by Dalken (2014) states that Porter's model of five forces is still relevant, even in the conditions of modern economic development today. Constantinides and Zalewska-Kurek argue that there are three new forces, namely Globalization, Digitalization and Deregulation. However, the three new forces only affect and do not restructure so that the five forces Porter model is considered still applicable to use. The basic principle by which a business runs based on elements of Buyers, Suppliers, Substitutes, New Entrants and Competitors is still valid and valid even in the current economic development. For example, Bargaining Power of Buyers is increasing because of very easy access to information through the presence of the internet. On the other hand, the Threat of New Entrants has been reduced due to the large investment demands, especially in the technological aspects, thus suppressing the potential for new competitors to emerge in the market.

CONCLUSION AND SUGGESTIONS

The magnitude of the potential of SMI in Bali needs to get attention for the progress of the Indonesian economy, so as to be able to prosper the community; one of them is due to reduced unemployment and the creation of new businesses. By utilizing five Porter models of strength or as a basis, SMI in Bali can understand the actions needed, such as implementation, other processes, and techniques that can contribute to creating a competitive advantage for the organization. By using this process, an organization has a guide to take the steps needed to achieve a fairly comprehensive strategy to create a competitive advantage. For this reason, Bali SMI need a competitive strategy that will make these SMI competitive, namely Porter's generic strategy, Cost Leadership, Product Differentiation strategy, and Focus strategy.

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PROMOTING ENTREPRENEURSHIP IN GREEK RURAL ORGANIZATIONS

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ABSTRACT

Despite being one of the most important productive sectors of the Greek economy, the Greek rural sector has always had significant pathogeneses, significantly reducing its growth capacity. The absence of a strategic plan, excessive support from European and national resources, the lack of expertise in agricultural production, the ailing cooperative organization and the significant entrepreneurship shortfall have turned the rural sector into a problematic sector. The economic crisis along with the increasing international competition has created a highly unfavorable environment for the Greek producers. In this context, it should be noted that important element of the agricultural sector in Greece is the participation of producers in private cooperatives. However, the shortcomings of these cooperatives regarding their organization and management, question their sustainability. This derives on one hand from the absence of private sector features and on the other hand, from the cooperatives missing an entrepreneurship spirit. This paper focuses on the beneficial effect of entrepreneurship in enhancing the economic efficiency of cooperatives thus adding to their productivity tools. The research methodology consists of secondary analysis and comparative benchmarking of successful business practices of various cooperative organizations. The main goal of the paper is to argue in favor of the theory that entrepreneurship may shield agricultural cooperatives by improving their economic performance.

KEY WORDS

Agricultural co-operatives, entrepreneurship, sustainability, rural sector.

Modern adverse working conditions in conjunction with the multi-dimensional possibilities offered by technological development and structural socio-economic changes have led to increased entrepreneurial activity focusing on innovation and entrepreneurship (Karagiannis *et al*, 2010). The Internet and wider access to diverse forms of financing (*often exceeding the domestic borders*) increases the possibilities of successful business development projects. The prospect of entrepreneurship development has prevailed in all sectors regardless of productivity. The agricultural sector which has operated for many years with outdated administrative methods, incomplete effectiveness criteria and obsolete technological systems has been significantly affected by the aforementioned changes. Nowadays the trend is the development of rural units following the patterns of modern business models. The business perspective except from the private financing practice has brought about radical changes in the strategic planning of economic units, i.e. gradually breaking down their investment portfolio financing now in addition to their basic farming and non-farming sectors, business activities of the secondary or even tertiary sector. This trend has begun to affect recently - to a significant extent - cooperative organizations of the agricultural sector which indeed display particularly impressive results by creating a

“*business activity*” stream, shielding their financial viability by limiting the risk arising from perishable agricultural produce (Van Bekkum, 2001).

Rural co-operatives. Cooperatives in Greece consist of autonomous associations formed voluntarily to address common economic, social and cultural needs and aspirations through their co-owners and democratically managed businesses (Papageorgiou, 2004; Papageorgiou, 1999). These principles are voluntary and free membership of persons with similar activities and common geographical location, democratic administration on behalf of members, financial contribution of its members, autonomy and economic and administrative independence, diffusion of information, education and practice, cooperation with other cooperatives, working for the benefit of the community (Nasioulas, 2012).

Rural cooperatives in Greece are a key axis for the development of Greek agriculture. The vast majority of farmers are involved in agricultural cooperatives through which they collect and sell most of their production. However, the serious deficiencies that characterize these organizations at the level of organization and administration, in conjunction with their special “*social*” orientation, hamper constantly their viability. This phenomenon originates from the very culture of cooperatives from which they removed the entrepreneurial spirit. In Greece, although the cooperative movement has contributed greatly to the battle of farmers for survival, it has been a highly pathogenic form of organization seeking constant support from financial bodies in order to ensure their sustainability. The governments never attempted to equip cooperatives with know-how and entrepreneurial dynamism so as to enable them to cope with the changing socio-economic conditions. More precisely and according to Dr. Iliopoulos, Director of the Institute of Rural Economy mentioned that “*The economic vulnerabilities of agricultural cooperatives were created, to an important extent by governmental subsidies policies instead of policies to strengthen collective entrepreneurship. The fact is that throughout the developed world, agriculture ministries are limited to providing technical assistance to cooperatives, training programs, a flexible legal and institutional framework and finance research actions on cooperative economy. Unlike Greece, the relative approach in rural development and food Ministry constantly degraded*” (according to the website <http://www.agreri.gr/>). The fact is that cooperatives being the main assertion of the interests of the farmers and taking into account that farmers are among the most vulnerable social groups, contributed to an increased state interventionism in order to ensure their sustainability. This trend has created a situation of inactivity which dismissed the cooperative organizations from forming an entrepreneurial spirit which could lead to a sound economic course (Nasioulas, 2012).

The main critics of cooperatives focus their comments just to this negative economic path as demonstrated by key financial figures that shape the financial picture co-ops (*ie excessive borrowing, the accumulated losses, the result, negative financial results, adverse predictions, negative markers traffic fluidity*). As it is evident, the problematic financial picture of cooperatives was created by incomplete business dynamics characterizing the cooperative organizations. Limited distribution channels (*zero attempts to export the disposal or dispersal of customers or entering into strategic partnerships*), the complete lack of modern know-how, the impossibility of monitoring market trends, the antiquated forms of cultivation, the lack of essential infrastructure, the lack of training of their members, the early depreciation of fixed assets, are just a few of the “*business failures*” of administrations of cooperatives. The above-mentioned situation coupled with the numerous phenomena of corruption and mismanagement, led to extremely unfavorable situations for the Greek agricultural cooperatives (Fefes, 2017; Papageorgiou, 2004).

According to the Greek Constitution (article 5, §§ 5, 6) “*5. Agricultural and urban cooperatives of all types shall be self-governed according to the provisions of the law and of their statutes; they shall be under the protection and supervision of the State which is obliged to provide for their development. 6. Establishment by law of compulsory cooperatives serving purposes of common benefit or public interest or common exploitation of farming areas or other wealth producing sources shall be permitted, on condition however that the equal treatment of all participants shall be assured*”.

Law 4015/2011 has attempted to mend some of the deficiencies by forcing cooperatives to submit business plans to their key financiers for evaluation (*quoting consolidation plans, future cash flows, restructuring measures, etc*), in order to determine their viability. As it can be seen from the political and economic developments, it was in the government's intentions to turn to entrepreneurship and cooperatives. Nevertheless, the inherent problems of specific organizations have not allowed them to adapt to modern developments and thus embracing their new role (Fefes, 2017).

According to the conclusion of research conducted in 2013 from the Field of Agricultural Economics in Aristotle University of Thessaloniki, entitled "*Strategy of unions of agricultural cooperatives in Greece to increase their competitiveness*", agricultural cooperatives "*do not love the entrepreneurial risk*". The majority of partnerships (82%) chooses to follow a wait-and-see attitude towards investment and development plans in order to minimize possible errors that would harm their members. 31% of cooperatives do not consider that they have aggressive stance against competitors. The majority of cooperatives in Greece are mainly interested in their ability to offer low-cost products to specific geographic areas and then develop new products. Half (47%) cooperatives are skeptical about the changes they can make to existing products and introducing new products to the market, following mostly other leading food companies, i.e., they rely more on products that have already been accepted by consumers. More precisely, (56.2%) gives greater emphasis in the already proven products, such as fruits, vegetables, olive oil, is cautious, avoiding the risk of introducing innovative products. The turnout of the products of the cooperative, constitutes the criterion for the frequency of introducing new products to the market (according to the website <https://www.heritage.org/index/pdf/2019/countries/greece.pdf>).

Overall, as indicated by research, cooperatives that opt to sell differentiated products at higher prices, dare to risk, seeking to be pioneers in their industry. Unlike them, cooperatives that sell low-cost products, appear more cautious on the market due to the nature of products traded, and often do not have processing capacities. It is worth noting that cooperatives constitute a particularly important institution because they have always constituted of development actors in the countryside, of significant economic and social contribution at the individual level of their members but also at local level. As supports research, cooperatives contribute to the exploitation of local resources, prevent monopoly practices for the benefit of society, the preservation and promotion of cultural heritage, the support of the social fabric of society and cultivate containment of population Today, they are called to support people who return to the countryside to take up farming (Nasioulas, 2012).

The business of agricultural co-operatives. The development of entrepreneurship in agricultural co-operatives is common in the international scene (Schilthuis *et al*, 2000). The co-operative organizations in most developed countries evolve into competitive economic units which apply modern business practices as follows:

- Enhance their productive cycle (*using modern technology, promoting new crops, developing their infrastructure*);
- Adjust the areas and ways of conducting sales;
- Implement strategic management (*designing vision and mission, outlining long-term goals, attempting to identify opportunities/weaknesses/risks/threats*);
- Focus on modern business management models (*using successful models of HRM, ISO etc*);
- Attempt to adapt their orientation by aiming on profitability of their funds, to achieve positive financial results, i.e. economic progress and ultimately to the realization of a form of perpetual economic viability.

Many successful European rural cooperatives have used their entrepreneurial spirit to assert business excellence. The additional activation in other business activities constitutes a modern trend of cooperatives internationally, improving their financial results and securing their survival. For instance, a number of cooperatives have developed their business activities utilizing further raw materials from their production operation or downstream or tertiary trade. In recent years particularly innovative cooperative organizations have evolved

in areas not related to their main products taking advantage of inactive inputs. This paper focuses on the beneficial effect that entrepreneurship may offer in the economic efficiency of cooperatives, strengthening the “*quiver*” of productive tools and ensuring their viability. These trends are shaping a framework for modern business activity which responds to the necessity of modern rules and private-finance in the Greek agricultural cooperatives in order to survive the domestic and international competition (Rossidis, 2014).

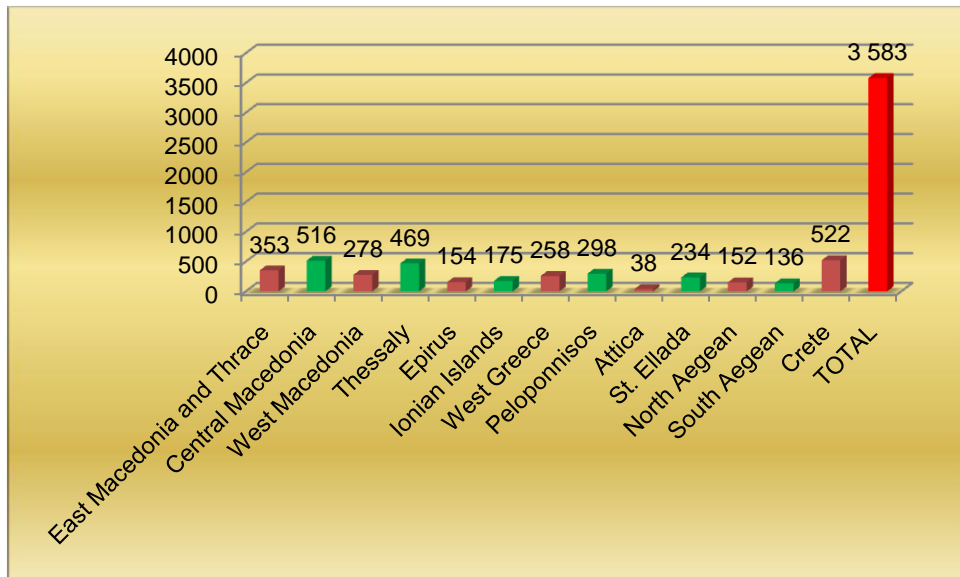


Figure 1 – Number of Agricultural Co-operatives per Region in Greece (Source: Ministry of Rural Development and Food, 2013)

Best practices. There are several cases of Greek co-operatives which, thanks to the insight and expertise of their administrations, as well as the undisputed quality of their production, have managed to distinguish themselves in their area, presenting high business perspectives. These cooperatives manage their productive circuit and their assets in such a way that they achieve significant levels of economic efficiency, productivity and quality. Modern management methods turn them into more competitive business units rather than traditional cooperative organizations. Their main objective (*in addition to the promotion of the interests of their members*) is to ensure the economic viability and the development of their business dynamic. The following case studies are elements that make up the progressive business perspective of certain cooperatives (Garayannis *et al*, 2015; Schilthuis *et al*, 2000).¹

The agricultural cooperative of Zagora. The agricultural cooperative of Zagora is the most important institution of commercial activity and development in the region of Pelion and one of the most dynamic cooperative organizations. On 27 October 1916, 199 Zagorians founded the cooperative called “*Selling agricultural products Cooperative of Zagora*”. During its first period of operation, the basic crops cultivated were potato and hazelnut. In the course of history, the cooperative experienced many swings, acme and decline, sometimes due to the specific conditions of the region of Zagora and sometimes due to general conditions of the country. The latest phase starts from the mid-60s and is tied to the spread in the region of the apple variety “*Delicious Starkin*”, which has been proved to be ideal for the climate and soil conditions of Zagora, resulting in apples of high quality and taste. Since then, the cooperative has rapidly expanded getting really explosive in the 1980’s gathering today 98% of producers. In 1982, the Cooperative of Zagora was proclaimed “*Pilot*” Cooperative by the Ministry of Agriculture, while in 1985 the Cooperative enters a new phase of action, turning into a commercial enterprise (*according to the website www.zagorin.gr*).

¹You may study also the co-operative of Greek Red Saffron (*Krokos Kozanis*) (<http://www.safran.gr/index.asp>), the Rural Cooperative Producers Organization (A.S.O.P.) «*Dimitra*» in Velvento (<http://dimitracoop.gr/en/>), the Chios Mastiha Growers Association (<https://www.gummastic.gr/en/>) etc.

In the 1990's, the Cooperative takes a series of highly progressive decisions. With the adoption of a new statute, it changes its brand name to "*agricultural cooperative of Zagora*" with insignia and logo branding. Apples became amongst the best in the world, recognized in 1996 by the European Union "*protected designation of origin*" (Regulation 1107/96 Vet), an important distinction given to high quality products (*trade name: ZAGORIN – ZAGORIN*). At the same time, the Cooperative collected and handled all agricultural products produced in the region, including other varieties of apples, pears, Kiwis, chestnuts, olives, cherries, etc. They designed new product packaging with their logo and the transportation vehicles are circulating with the new corporate identity. The AS applying TQM principles, produces 100% of apples "*Zagorin*" with the method of "*integrated production*", guaranteeing that they are free of residues of pesticides and fertilizers (*being certified by the official Greek agency AGROCERT*). At the same time, the cooperative due to the limited cultivation area, follows the method of dense planting apple trees, which have a higher yield by 10% – 20%. These production systems succeeded by the intervention of individual production processes of members with nurseries, analyses, cultivation tips of specialized scientific personnel, educational trips in similar productive areas (i.e. N. Italy) and quality policies certified by ISO and HACCP process (*according to the website www.zagorin.gr*).

The cooperative of Zagora has a sophisticated proprietary refrigerator- Screeners complex, which is among the biggest in the Balkans and demonstrates the continuous investment carried out in the area of modernization of the logistical infrastructure (*according to the website www.zagorin.gr*). Modern cooling areas of 55,000 m³ (ULO controlled atmosphere Chambers in excess of 50%) have storage capability, maintenance over 10,000 tons, while the sorting is done by automatic electronic houses with possibility of 180 tons in 8 hours (*depending on the weight and color*). Electronic micro-machines also operate at the premises of refrigerators. Today the agricultural cooperative of Zagora collects, preserves, and distributes the packs 100% of Apple production in the region (10.000-15.000 tons/year), as well as of other products produced and is one of the most important economic units of magnesia with annual turnover of over 15.000.000 €.

There are 700 members with cooperative serving 1.200 € and overall cooperative capital 840.000 €. The A.S. Zagora confirms the excellent financial track record by acquitting on 31-12-2008 all of its debt to its exclusive Bank loaner, the Agricultural Bank of Greece. Each year, it implements operational plans of 800.000€ - 900.000€ which are structured as 50% grants and 50% participation of Plus/borne me partner with levy 4 cents/kg of product.

According to Balassas, Director of the Cooperative (*according to the website www.paseges.gr*), the five-year development program of the Cooperative includes the processing of apples for juice production, in principle by creating a small processing unit. It is estimated that the production of juices after three years, as demonstrated by market research, with the prospect of expansion in the production of sweets, jam, Apple snacks, will allow the A.S. Zagora to annually implement modernization investments of refrigerators – warehouses. These refrigerators- warehouses apply new controlled atmosphere technology, which reduces the rate of oxygen from 21% to 2.5%, thus preventing the ripening of fruit. Until now, the new technology implemented in 60% of storage cubicles area 2.5 acres. It is estimated that an additional 2 million € will be made available for this purpose (*according to the website www.zagorin.gr*).

A.S. Zagora extends the progressive vision of active business and in other areas other than those directly related to agriculture such as tourism and retail. In particular, the cooperative runs super markets with products of the cooperative and of members of the local community as well as hotel facilities in the region of Zagora, Pelion, thus taking advantage of the high touristic interest in the region. These investments have significantly shielded the economic dynamics of the cooperative forming a sort of "Web" shelter compared to the perishable agricultural products. Regarding the fiscal year 2011, the sales of apples totaled 12 million €. The year 2012 due to adverse weather conditions, the production and the corresponding sales amounted to 9 million pounds of apples affecting the financial results of the cooperative. However, the total turnover increased by the other activities, reaching 18 million (*according to the website www.zagorin.gr*).

The agricultural cooperative of Kalavryta. The agricultural dairy cooperative, Kalavryta, is the transformation of the Union of agricultural cooperatives of Kalavryta, 34 were former members of the Union (*L. 4015/2011 imposed the merging of first level cooperatives*). The Union was founded in 1963 by farmers of the region of the province of Kalavryta, through the primary level credit and dairy cooperatives (*according to the website www.kalavritacoop.gr*). Initially they offered credit and supply services for their members, grants management, accounting services etc. In 1972, it was decided the establishment of milk processing plant for production of dairy products through the collection and exploitation of the region's milk on cooperative basis. In 1974 the factory started its operation with the production of mainly traditional draught slice, known as "FETA Kalavryta". From 1982 until 2007, the Union came under development and investment programs as well as reinvestment available, for the modernization of units and creating modern infrastructure. In this context, inter alia, production plant ferments in Kalavryta was created in 1986, the 2004 corresponding in Klitoria. Adaptation to the provisions of L. 4015/2011, was completed in September of 2013 on which has evolved at primary cooperative, merging/absorbing parallel 34 primary cooperatives (Fefes, 2017).

The A.S. Kalavryta according to the business culture, promotes strategic actions for strengthening economic and business, assuming the role of leading agency who actively contributes to the formulation of sectoral developments. In particular:

- Gathers sheep milk from at least 1,100 farms, producer members and not-, in the wider area of the camp, as well as from neighboring producers in mountain areas, with proprietary isothermal milk tankers fleet;
- Has a modern factory on manufacture of dairy products, which operates in accordance with the requirements of national regulations and the EU, applying HACCP and ISO 9001;
- Uses proprietary complex refrigerators covered an area of about 3.000 square meters and a capacity of 18.000 kg m for the maturation and storage of products;
- Operates modern fully equipped chemical and microbiological control laboratory raw material milk, feed materials and finished products;
- Produces high quality traditional draught FETA protected designation of origin KALAVRYTON as well as goat cheese, semi-hard cheese, cheese, dry myghthra, yogurt and dairy butter;
- Products available in the domestic market, while in the service of producers in the region have: a) 2 complexes storage and feed mixtures production, b) 4 branches feed, fertilizers and marketing of propagating material, Kalavryta, Kleitoria, psophis and Laurel, c) shop the veterinary and agricultural pesticides, Kalavryta, d) retailer of dairy products;
- December 2011 the NDP Kalavryton proceeded to mechanical expansion and modernization of the unit, which increases the production of 62 to 95 tons of raw material per day;
- The partnership has made the strategic choice to sells its products exclusively in the retail chain "Sklaenitis" (*according to the website www.kalavritacoop.gr*).

The A.S. Kalavryton featuring equity over 8.000.000 €, constant turnover of more than € 18 million (*for the year 2013 the turnover exceeded 20.000.000 €*) and profitability close to 1.500.000 €, is one of the most profitable and constantly evolving cooperative organizations, constitutes a lever of growth for the region. The Dpt forms a high performance unit displaying excellent levels of quality by offering a select range of products, with top all the FETA of Kalavryta (*according to the websites <http://www.paseges.gr>, www.kalavritacoop.gr*).

CONCLUSION

The development of entrepreneurship in agricultural cooperatives could contribute drastically to the viability of cooperative organizations by streamlining administration, aiming to achieve highest levels of efficiency and profitability and not just serve the interests of

members. It should be noted that, the enterprise incitement is not a panacea for the functioning of economic units. It constitutes an important guide and technocratic administration which will contribute actively to the implementation of predetermined objectives. This perspective can bring the necessary economic and entrepreneurial dynamism to agricultural cooperatives in order to enable them to survive and continue growing by forming independent, healthy economic units that can carry out the cooperative role and preserve high levels of competitiveness.

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MEASUREMENT MODEL OF BEHAVIORAL INTENTION TO SUBSCRIBE YOUTUBE CHANNEL CONTENT USING UTAUT 2 MODEL

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ABSTRACT

This study research about measurement model of behavioral intention to subscribe YouTube Channel content named Kidz with SEM-PLS. Kidz is a Youtube Channel content that share videos for kids. The samples of this research were Kidz users aged 7-12 through online form. There are 11 latent variables and 72 manifest variables. Latent variable of this study are performance expectancy, effort expectancy, social influence, facilitating condition, hedonic motivation, habit, e-lifestyle, promotion, behavioral intention to use, usage behavior, and behavioral intention to subscribe. The result shows about the recommendation contribution of manifest variable to latent variable.

KEY WORDS

Behavioral intention, contribution, manifest variable, latent variable, subscribe, YouTube channel content.

Internet started entering Indonesia since 1990. In fact, for the time being, Indonesia became one of the biggest internet user's countries in the world. Based on data survey published by Asosiasi Penyelenggara Jasa Internet Indonesia (APJII), the growth of internet users reached 143.26 million from total 262 millions of Indonesian population. Internet users are increased for around 22.5 million users during 2015 to 2016, while in period 2016 to 2017 it increased for around 10.56 million users. The growth of Indonesia's internet users in 2017 presented in Figure 1.

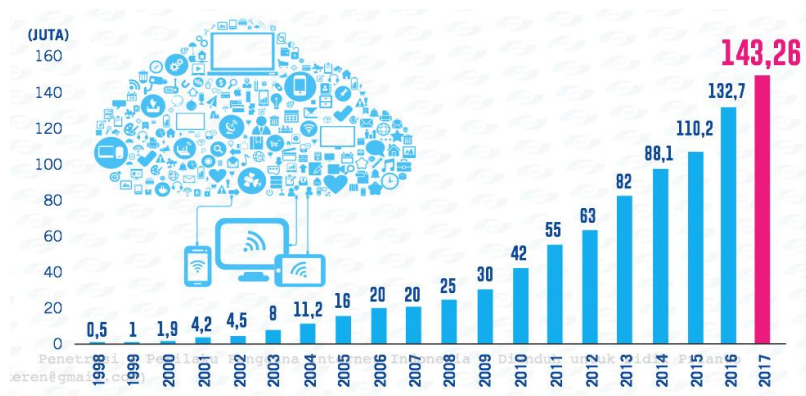


Figure 1 – The growth of Indonesia's internet users in 2017 (Source: APJII, 2017)

Internet is not only used as media of communication, but also maximize as a media of marketing. Social media is much used with internet in business activity too, since it becomes very popular way among modern society. One type of social media is YouTube. People use YouTube to get an entertainment, tutorial, product's review and information. It makes YouTube as a media to share many kinds of creative videos as tutorial, review product,

entertain and informative. This phenomenon brings out business opportunities to make content in YouTube Channel. AXY Studio as a creator of Kidz content has been produced and published many kinds of interesting videos in YouTube. Until Feb 14th 2019, this content had already 111.274 subscribers.

Video that had been uploaded on YouTube Channel means it can bring the viewers. When the viewers are getting interests in one of the video, they possible to watch another similar video in the same content (Helianthusonfri 2014). The number of subscribers is very important because it can affect the reach of the video. The more subscriber joined the content, the more people will watch video on that content, means it will automatically increase the interaction occurs on the video. The interaction can be like, comments or even share. The more video shared, the more video being popular, and watched by many people.

Consumer behavior on finding an entertainment and product review in the right place are important thing for a content branding process. In previous research, there was an observed about consumer behavioral intention to subscribe some application music streaming service (Helkkula 2016). Helkkula was doing some of a research about the factors that affect behavioral intention to subscribe music streaming service application. It used UTAUT2 as a model of the research and the effect of behavioral intention.

Keushen as a Managing Director of Google Indonesia said that YouTube consumption in Indonesia has been increase in 2017. It can be seen from watching duration that reached until one million hour. The number of uploaded video by local creator was increase significantly. In 2016, YouTube has an increase in watching duration 155 percent and uploading video 279 percent. YouTube then has a commitment to support the growth of Indonesian content creators.

Indonesian smartphone users which are 30 percent of total population are watching video from internet (smartphone, tablet, or computer) more often than from television. YouTube give an opportunity for every creator to make a creative content. Keusgen predicted that gadget technology growth with affordable price, and easy to use will make a quality of YouTube content video similar with the quality of television or movie content. Social media, including YouTube, is a democracy technology facility that erase barrier of entry in creativity world. To share creativity, a creator was not have to rely to the conventional media like television.

Based from their official website, YouTube has a program named YouTube Partnership Program. This program was made to every people that want become a permanent creator of YouTube. To join this program, creator should have a Google account and AdSense account for payment. Next, a creator should have some videos, viewing activity, viewers, and subscribers that increase consistantly. A creator that has be a member of YouTube Partnership Program will get profit (money) from advertisement and showing activity (Labas and Yasmine 2017). Based on the growth of social media, author makes a research about the factors that affect behavioral intention to subscribe YouTube Channel content.

The model of this study used UTAUT2. There are 11 latent variables, such as performance expectancy, effort expectancy, social influence, facilitating condition, hedonic motivation, habit, e-lifestyle, promotion, behavioral intention to use, usage behavior, and behavioral intention to subscribe. The purpose of this research is to analyse factors that affect behavioral intention to use content and behavioral intention to subscribe YouTube Channel by knowing the contribution of manifest variable to latent variable.

METHODS OF RESEARCH

Data collection was conducted over four months (May-August 2018). The approaching used in this research is quantitative research with associate method. The samples of this research were Kidz users, age 7-12 years old. This study used non probability sampling and convenience sampling technique. All respondents were given an online questionnaire by google form. Likert was used as a measurement scale. Technique dataprocess that used in this research is SEM-PLS and description analysis by PLS 3.0 software.

RESULTS AND DISCUSSION

There are five manifest variable of performance expectancy, such as a good video (PE1), the comprehensive information in description box (PE2), the clarity of content video (PE3), the quality of video images (PE4), the interest of content video (PE5). All relationship among manifest variable and latent variable are valid. Loading factor value of performance expectancy (before and after elimination) presents at Table 1.

Table 1 – Loading factor value of performance expectancy

Indicator Variable	Loading Factor	T Statistic	Description
Good video cover (PE1)	0.563	6.096	Valid
Comprehensive information in description box (PE2)	0.777	14.467	Valid
Clarity of content video (PE3)	0.745	12.515	Valid
Quality of video images (PE4)	0.595	6.698	Valid
Interest of content video (PE5)	0.816	21.797	Valid

Base on the result, a sequence of manifest variable that have a contribution from highest to lowest are the interest of content video (PE5) with loading factor value 0.816, the comprehensive information in description box (PE2) with loading factor value 0.777, the clarity of content video (PE3) with loading factor value 0.745, the quality of video images (PE4) with loading factor value 0.595, and a good video cover (PE1) with loading factor value 0.563. The interest of content video as a highest contribution for performance expectancy becomes a consideration of content users to enjoy Kidz channel better than another channel. Kidz always maintain the quality of video so the viewers will be enjoyed.

Effort expectancy expectancy have a three manifest variable, such as understanding how to operate content (EE2), clarity knobs information (EE2), and Easy to study content (EE3). All relationship among manifest variable and latent variable are valid. Loading factor value of effort expectancy (before and after elimination) presents at Table 2.

Table 2 – Loading factor value of effort expectancy

Indicator Variable	Loading Factor	T Statistic	Description
Understanding how to operate content (EE1)	0.916	5.595	Valid
Clarity knobs information (EE2)	0.900	5.317	Valid
Easy to study content (EE3)	0.941	6.777	Valid

Base on the result, a sequence from the highest to lower contribution of manifest variable are easy to study content (EE3) with loading factor value 0.941, understanding how to operate content (EE1) with loading factor value 0.916, and clarity knobs information (EE2) with loading factor value 0.900. Easy to study content as the highest contribution of effort expectancy giving a meaning that information to use content from YouTube are easy, so the users can maximize all the content facilities.

There are 16 manifest variable of social influence, such as parents recommendation to like content video (SI2), parents recommendation to comment content video (SI3), parents recommendation to share content video (SI4), siblings recommendation to watch content video (SI5), siblings recommendation to like content video (SI6), siblings recommendation to comment content video (SI7), siblings recommendation to share content video (SI8), friends recommendation to watch content video (SI9), friends recommendation to like video content (SI10), friends recommendation to comment video content (SI11), friends recommendation to share video content (SI12), Kidz actor/actress recommendation to watch content video (SI17), another youtuber recommendation to like content video (SI18), another youtuber recommendation to comment content video (SI9), and another youtuber recommendation to share content video (SI20). Loading factor value of social influence (before and after elimination) presents at Table 3.

In Table 3, four manifest variable of social media that have highest contribution are parents recommendation to share content video (SI4) with loading factor value 0.848, another youtuber recommendation to share content video (SI20) with loading factor value

0.847, another youtuber recommendation to comment content video (SI19) with loading factor value 0.838, and another youtuber recommendation to like content video (SI18) with loading factor value 0.837. The parents of users are affecting behavioral intention their kids to share Kidz video they like most in social media. Share means a recommendation video from content users to their friends in social media. The more sharing video activity happened, the most it confirmed that the video content is recommended to be watched and enjoyed by everybody.

Table 3 – Loading factor value of social influence

Indicator Variable	Loading Factor	T Statistic	Description
Parents recommendation to like content video (SI2)	0.601	10.516	Valid
Parents recommendation to comment content video (SI3)	0.673	9.628	Valid
Parents recommendation to share content video (SI4)	0.848	27.779	Valid
Siblings recommendation to watch content video (SI5)	0.554	6.657	Valid
Siblings recommendation to like content video (SI6)	0.644	8.520	Valid
Siblings recommendation to comment content video (SI7)	0.648	8.057	Valid
Siblings recommendation to share content video (SI8)	0.827	16.249	Valid
Friends recommendation to watch content video (SI9)	0.576	6.004	Valid
Friends recommendation to like content video (SI10)	0.634	7.596	Valid
Friends recommendation to comment content video (SI11)	0.679	7.879	Valid
Friends recommendation to share content video (SI12)	0.753	10.984	Valid
Kidz actor/actress recommendation to share content video (SI16)	0.595	8.392	Valid
Another youtuber recommendation to watch content video (SI17)	0.781	15.102	Valid
Another youtuber recommendation to like content video (SI18)	0.837	25.903	Valid
Another youtuber recommendation to comment content video (SI19)	0.838	23.872	Valid
Another youtuber recommendation to share content video (SI20)	0.847	23.671	Valid

Facilitating condition have three manifest variable, such as the availability of internet (FC1), the availability of computer/laptop (FC2), and the availability of smartphone (FC3). All relationship among manifest variable and latent variable are valid. Loading factor value of performance expectancy (before and after elimination) presents at Table 4.

Table 4 – Loading factor value of facilitating condition

Indicator Variable	Loading Factor	T Statistic	Description
The availability of internet (FC1)	0.741	7.953	Valid
The availability of computer/laptop (FC2)	0.788	8.225	Valid
The availability of smartphone (FC3)	0.835	11.850	Valid

Base on the result, the highest contribution manifest variable is the availability of smartphone (FC3) with loading factor value 0.835. Next, the availability of computer/laptop (FC2) with loading factor value 0.788, and the availability of internet (FC1) with loading factor value 0.741. The availability of a smartphone unit has been enough for content user to enjoy Kidz video. Smartphone more simple, easily to use, and little bit cheap, so it is possible for everybody to have it and bring it everywhere, everytime.

There are three manifest variables on hedonic motivation, such as content video is fun (HM1), content video is enjoyable (HM2), and fun intrection (HM3). All relationship among manifest variable and latent variable are valid. Loading factor value of performance expectancy (before and after elimination) presents at Table 5.

In Table 5, a sequence of manifest variable that have a contribution from highest to lowest are content video is fun (HM1) with loading factor value 0.892, content video is enjoyable (HM2) with loading factor value 0.878, and fun interaction (HM3) with loading factor value 0.615. The higher manifest variable is a pleasurable feeling fun interaction when watching Kidz video. That feeling affect behavioral intention to use Kidz content.

There are eight manifest variable in habbit, such as addicted to open content (H1), addict to watch content video (H2), addict to like content video (H3), addict to comment content video (H4), addict to share content video (H5), directly watch a new video (H6), know the new video uploaded schedule (H7), and repeat to watch the same video (H8). All relationship among manifest variable and latent variable are valid. Loading factor value of performance expectancy (before and after elimination) presents at Table 6.

Table 5 – Loading factor value of hedonic motivation

Indicator Variable	Loading Factor	T Statistic	Description
Content video is fun (HM1)	0.892	41.057	Valid
Content video is enjoyable (HM2)	0.878	27.155	Valid
Fun interaction (HM3)	0.615	6.221	Valid

Table 6 – Loading factor value of habit

Indicator Variable	Loading Factor	T Statistic	Description
Addict to open content (H1)	0.768	15.348	Valid
Addict to watch content video (H2)	0.814	21.874	Valid
Addict to like content video (H3)	0.813	23.819	Valid
Addict to comment content video (H4)	0.817	18.953	Valid
Addict to share content video (H5)	0.744	16.489	Valid
Directly watch a new video (H6)	0.820	24.835	Valid
Know the new video uploaded schedule (H7)	0.663	8.831	Valid
Repeat to watch the same video (H8)	0.776	19.639	Valid

Base on Table 6, two manifest variable that has a highest contribution are directly watch a new video (H6) with loading factor value 0.820 and addict to comment content video (H4) with loading factor 0.817. The way that can be taken by creator to increase habit are creating a routine and consistant schedule on uploading new video, so the viewers know the new video uploaded schedule. The fix schedule will create the habit. In line with that, addict to comment video means that Kidz users are often comment Kidz videos. They comment about variety of toys, quality of performance Kidz actor or actress, the answer of question from Kidz actor or actress on video, etc.

E-lifestyle has three manifest variables, such as access internet with smartphone (EL1), interest to use internet (EL3), and the existence of internet that helps daily activity (EL4). Loading factor value of performance expectancy (before and after elimination) presents at Table 7.

Table 7 – Loading factor varibel e-lifestyle

Indicator Variable	Loading Factor	T Statistic	Description
Access internet with smartphone (EL1)	0.831	2.889	Valid
Interest to use internet (EL3)	0.882	3.139	Valid
The existence of internet that helps daily activity (EL4)	0.773	2.438	Valid

Base on Table 7, a sequence of manifest variable that have a contribution from highest to lowest are interest to use internet (EL3) with loading factor value 0.831, access internet with smartphone (EL1) with loading factor value 0.831, and the existence of internet that helps daily activity (EL4) with loading factor value 0.773. In e-lifestyle, the highest contribution manifest variable is interest conternt users to use internet (EL3). This feeling create a profit for Kidz which is based online with internet.

Promotion has four manifest variable, such as a good promotion banner (PR1), recommendation to watch from another social media (PR2), giveaway quiz (PR4), and impression live video (PR5). Loading factor value of performance expectancy (before and after elimination) presents at Table 8.

In Table 8, a sequence of manifest variable that have a contribution from highest to lowest are impression live video (PR5) with loading factor value 0.786, recommendation to watch from social media (PR2) with loading factor value 0.778, a good promotion banner (PR1) with loading factor 0.657, and giveaway quiz (PR5) with loading factor value 0.786. The highest contribution manifest variable of promotion is about the interest of Kidz users with Kidz live video from on other social media (Facebook). Live video shares about behind the scene of Kidz video or live interaction between actor and actress Kidz with Kidz users and viewers. In live video the actor or actress can directly answer the question from viewers, so it makes the viewers more happily.

There are ten manifest variable of behavioral intention to use, such as intention to open content (BITO1), intention to watch content video (BITO2), intention to like content video

(BTO3), intention to comment content video (BITO4), intention to share content video (BITO5), plan to open content (BITO6), plan to watch content video (BITO7), plan to like content video (BITO8), plan to comment content video (BITO9), and plan to share content video (BITO10). All relationship among manifest variable and latent variable are valid. Loading factor value of performance expectancy (before and after elimination) presents at Table 9.

Table 8 – Loading factor value of promotion

Indicator Variable	Loading Factor	T Statistic	Description
A good promotion banner (PR1)	0.657	8.549	Valid
Recommendation to watch from another social media (PR2)	0.778	11.604	Valid
Giveaway Quiz (PR4)	0.748	14.377	Valid
Impression live video (PR5)	0.786	15.529	Valid

Table 9 – Loading factor of behavioral intention to use

Indicator Variable	Loading Factor	T Statistic	Description
Intention to open content (BITO1)	0.858	25.945	Valid
Intention to watch content video (BITO2)	0.817	21.688	Valid
Intention to like content video (BITO3)	0.862	29.104	Valid
Intention to comment content video (BITO4)	0.824	23.494	Valid
Intention to share content video (BITO5)	0.840	24.883	Valid
Plan to open content (BITO6)	0.845	24.010	Valid
Plan to watch content video (BITO7)	0.766	14.219	Valid
Plan to like content video (BITO8)	0.876	30.193	Valid
Plan to comment content video (BITO9)	0.875	39.789	Valid
Plan to share content video (BITO10)	0.860	32.594	Valid

In Table 9, four manifest variable which has the highest contribution are plan to like content video (BITO8) with loading factor 0.876, plan to comment content video (BITO9) with loading factor value 0.875, intention to like content video (BITO3) with loading factor value 0.862, and plan to share content video (BITO10) with loading factor 0.860. The highest contribution manifest variable of behavioral intention to use gives an information that Kidz users have a plan to like Kidz video. They are happy, enjoy, and they get a new information from video.

Table 10 – Loading factor value of usage behavior

Indicator Variable	Loading Factor	T Statistic	Description
Often to open content (UB1)	0.842	32.918	Valid
Often to watch content video (UB2)	0.854	33.011	Valid
Often to like content video (UB3)	0.779	13.509	Valid
Often to comment content video (UB4)	0.744	11.533	Valid
Often to share content video (UB5)	0.739	12.544	Valid
Often to watch video "Top model Penghias Wajah" (UB6)	0.802	20.406	Valid
Often to watch video "Es Kepala Milo Viral" (UB7)	0.756	15.041	Valid
Often to watch video "Tobot Z Bersama Kak Bella" (UB8)	0.672	9.961	Valid
Often to watch video "Monster Slime Cokelat" (UB9)	0.771	14.629	Valid
Often to watch video "Timun Mas Dongeng Rakyat Jawa Tengah" (UB10)	0.822	22.332	Valid

Ten manifest variable of usage behavior such as often to open content (UB1), often to watch content video (UB2), Often to like content video (UB3), Often to comment content video (UB4), Often to share content video (UB5), Often to watch video "Top model Penghias Wajah" (UB6), Often to watch video "Es Kepala Milo Viral" (UB7), Often to watch video "Tobot Z Bersama Kak Bella" (UB8), Often to watch video "Monster Slime Cokelat" (UB9), and Often to watch video "Timun Mas Dongeng Rakyat Jawa Tengah" (UB10). Loading factor value of performance expectancy (before and after elimination) presents at Table 10.

Based on Table 10, two highest contribution manifest variable of usage behavior are often to watch content video (UB2) with loading factor value 0.854 and often to open content (UB1) with loading factor 0.842. The next contribution are Often to watch video "Timun Mas

Dongeng Rakyat Jawa Tengah” (UB10) with loading factor value 0.822, Often to watch video “Top model Penghias Wajah” (UB6) with loading factor value 0.802, Often to like content video (UB3) with loading factor value 0.779, Often to watch video “Monster Slime Cokelat” (UB9) with loading factor value 0.771, Often to watch video “Es Kepala Milo Viral” (UB7) with loading factor value 0.756, Often to comment content video (UB4) with loading factor value 0.744, Often to share content video (UB5) with loading factor value 0.739, and Often to watch video “Tobot Z Bersama Kak Bella” (UB8) with loading factor value 0.672.

There are two manifest variable of behavioral intention to subscribe, such as intention to subscribe content (SS1) and plan to subscribe content (SS2). Loading factor value of behavioral intention to subscribe (before and after elimination) present at Table 11.

Table 11 – Loading factor value of behavioral intention to subscribe

Indicator Variable	Loading Factor	T Statistic	Description
Intention to subscribe content (SS1)	0.955	95.208	Valid
Plan to subscribe content (SS2)	0.938	38.860	Valid

In Table 11, all relationship among manifest variable and latent variable in behavioral intention to subscribe are valid. Intention to subscribe content (SS1) with loading factor value 0.955 is higher than plan to subscribe content (SS2) with loading factor 0.938. It means that behavioral intention to subscribe Kidz content has a higher contribution than plan to subscribe Kidz content.

CONCLUSION AND RECOMMENDATIONS

This research found the important manifest variable as a base of forming behavioral intention to subscribe. Manifest variable that affect in UTAUT2 are the level of respondent trust of a good video cover, comprehensiveness of information, clarity of content video, quality of video images, interest of content video, level of understanding how to operate content, clarity knobs information, easy to study content, recommendation from parents, siblings, friends, Kidz actor or actress, and another youtuber to watch, like, comment, and share content video, availability of internet, computer or laptop, smartphone, happy and enjoy feeling from fun video and interaction, addict to open, watch, like, comment, and share video content, directly watch a new video, know the new video uploaded schedule, and repeat to watch the same video, access internet with smartphone, interest to use internet existence of internet that helps daily activities, a good promotion banner, recommendation to each from another social media, giveaway quiz, impression live video, intention to open, watch, like, comment, and share content video, plan to open, watch, like, comment, and share content video, often to open, watch, like, comment, and share video content, intention and plan to subscribe content. All manifest variables are recommended for UTAUT2 related of YouTube Channel content subscribe.

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EFFECT OF ACCOUNTING INFORMATION AND NON-ACCOUNTING INFORMATION ON UNDER-PRICING IPO AND FIRM VALUE: A STUDY OF COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE DURING PERIOD OF 2008-2014

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ABSTRACT

Underpricing phenomenon occurs in stock markets in the world, including in the UK, in Australia, in the United States, in South Africa, in Korea in, China, in Malaysia and in Indonesia. Previous studies that discussed the effect of Accounting Information and Non-Accounting Information variables on Underpricing IPO and Corporate Value gave different results, the effect of Underpricing IPO variables on long-term corporate value experienced a lot of underperformance. This study aims to obtain empirical evidence on the effect of Accounting Information and Non-Accounting Information on Underpricing IPO and Firm Value, for companies listed on the Indonesia Stock Exchange in 2008 - 2014. The population of this study is all companies that conduct Initial Public Offering (IPO) and listings on the Indonesia Stock Exchange from 2008 to 2014 as many as 105 companies. The population that meets the criteria to be sampled is 70 companies. The research method used in this study is Warp-PLS. The results showed that the effect of (1) Accounting Information on Underpricing's IPO was not significant (2) Non-Accounting Information on Underpricing's IPO was negative and significant (3) Accounting Information on Firm Value was positive and significant (4) Non Accounting Information on Firm Value is not significant (5) Underpricing's IPO information on Firm Value is negative and significant.

KEY WORDS

Accounting information, non accounting information, underpricing, firm value.

The Underpricing phenomenon occurs in many stock markets throughout the world. Previous research that discussed the effect of Accounting Information variables on Underpricing's IPO still gave different results, Rasheed and Datta (1997), Melnik, et al (2003), Daljono (2000), Hasan, et al (2013), had a significant negative effect while research by Daugherty and Thadavillil (2012), Martani (2012), Razafindrabinina, et al (2013), Agathee, et al (2012), Durukan, et al (2002), Thanyawee (2012), Dominique and Kwan (2013) have no effect significant.

The effect of the variable Non Accounting Information on Underpricing's IPO results is also different, the research of Zahn, et al (2008), Chisty (2012), Mohamad and Annuar (1997), Martani (2012), and Thanyawee (2012) have no significant effect. The study of Dominique and Kwan (2013), Daugherty and Thadavillil (2012) and Agathee, et al (2012) have a significant positive effect, Brau and Carpenter (2012), Kim, et al (1993), Caster and Manaster (1990), How , et al (1995), Beatty (1989) and Salim & Randy (2013) the results have a significant negative effect. The effect of Underpricing IPO variables on Corporate Value, assessing the long-term performance of companies on stocks that experience Underpricing gives almost the same results, Kooli and Jean (2001), Bachmann, (2004), Jay ritter (1991), Durukan, et al (2002), Bessler and Stefan (2007), Seal and Jasbir (2012) and

Schlag and Anja (2000) long-term performance underperformance, while Albert Corhay (2002) and Xia (2012) studies have experienced abnormal returns.

De Lorenzo and Fabrizio (2001), explained that almost all of the previous studies of Underpricing IPOs were the result of asymmetry of information on perpetrators of Initial Public Offering (IPO), namely Underwriters, Issuers and Investors. Signaling theory Ross (1977), that management has better information about its company and provides information to investors hoping that the company's stock price increases. Good signals are given by the company for the company's performance for the future, but past financial performance is not good, the market will not believe it. Wolk, et al (2001).

Empirically in this study, is the development of previous research, discussing and developing the main concepts, explaining the Accounting Information Variables and Non Accounting Information Variables, their effects on Underpricing IPO and Corporate Value.

LITERATURE REVIEW

Accounting Information, Bushman, et al. (2001), is a product of the company's accounting system and reporting system for external measures and openly discloses quantitative data regarding the financial position and performance of public companies. The balance sheet, income statement and audited statement of cash flows are the basis of company-specific information available to Investors and regulators. The Accounting Information variable in this study uses 4 indicators, namely: Return On Assets (ROA), Return on Equity (ROE), Debt to Equity Ratio (DER) and Earning per Share (EPS).

Non Accounting Information, is company information in addition to the quantitative values contained in financial statements. Non-Accounting information includes Underwriters Reputation, Auditor Reputation, inflation rate, currency exchange rates, interest rates, macroeconomics, government policies and government ownership (BUMN). In this study Non Accounting Information uses the Reputation of Underwriters and Reputation of Auditors.

Underpricing, Beatty (1989) IPO, Underpricing phenomenon has a different impact between issuers and Investors, companies are disadvantaged by Underpricing conditions because the funds obtained from go-public cannot be maximum, if there is overpricing Investors will be harmed, because they do not accept Initial Return. Initial Return is the profit obtained by shareholders on the difference in the price of shares purchased in the primary market with the selling price of shares on the first day on the secondary market. Underpricing is used to describe the difference between the price of offering shares in the primary market and the price of shares in the secondary market on the first day (Beatty, 1989). De Lorenzo and Fabrizio (2001), almost all previous studies have explained the occurrence of underpricing as a result of information asymmetry between issuers, underwriters, and investors. For issuers, Underpricing can be detrimental because the funds obtained cannot be maximized. Underpricing can also be used as a marketing strategy to increase interest Investors invest in shares at the Initial Public Offering (IPO) by giving a high Initial Return. Kim and Shin (2001), the possibility of Underpricing is due to the intentions of the Underwriter to set the bid price below the secondary market price, the aim of minimizing the loss that the underwriter must bear if the shares are not sold.

Corporate Value, Gitman (2006), is the actual value per share that will be received if the company's assets are sold in accordance with the stock price. If a high corporate value means increasing the prosperity of shareholders. Firm value is also defined as Investor's perception of the company, which shows the price to be paid by the Investor. High stock market prices also make high corporate value and vice versa. The Firm value in this study is proxied by Book Value (BV), Price to Book Value (PBV), Closing Price, Price Earning Ratio (PER) and Tobin's Q which will be described as below.

The research hypothesis is as follows:

H1: Accounting Information has an effect on Underpricing's IPO;

H2: Non Accounting Information has an effect on Underpricing's IPO;

H3: Accounting Information has an effect on Firm Value;

H4: Non Accounting Information has an effect on Firm Value;

H5: Underpricing IPO has an effect on Firm Value.

RESEARCH DATA AND OPERATIONAL DEFINITIONS

This type of research data is timeseries secondary data which is data collected in a time sequence. This research data was obtained from the Indonesia Stock Exchange (IDX) and published through the Indonesia Capital Market Directory (ICMD) in 2008-2014 in the form of financial statements of companies whose shares experienced underpricing. The population in this study were all companies that made Initial Public Offering (IPO) on the Indonesia Stock Exchange for the period 2008-2014. The population of this study was taken from all companies that conducted Initial Public Offering (IPO) and experienced underpricing on the Indonesia Stock Exchange from 2008 to 2014 as many as 105 companies. Samples were taken from populations that met the criteria after deducting companies with overpricing of 18 companies, minus the type of banking and financing companies of 8 companies, minus companies with incomplete 9 companies, so that the research sample amounted to 70 companies. Sources of research data and formulas are grouped based on the research variables as follows.

Figure 1 – Research Variables, indicators and formulas

No	Variable	Indicator	Data Source	Formula
	1	2	3	
1	Accounting Information	Return on Asset (ROA) Return on Equity (ROE) Debt to Equity Ratio (DER) Earning per Share (EPS)	ICMD	ROA = $\frac{\text{Earning After Tax}}{\text{Total Assets}}$ ROE = $\frac{\text{Earning After Tax}}{\text{Total Equity}}$ DER = $\frac{\text{Total Debt}}{\text{Tot Share Equity}}$ EPS = $\frac{\text{Earning After Tax}}{\sum \text{ Saham Beredar}}$
2	Non-Accounting Information	Underwriter Reputation (RU) Auditor Reputation (RA)	Blomberg Directory KAP	Dummy Variable Dummy Variable
3	IPO Underpricing	Initial Return	www.idx.co.id	$\frac{\text{CP H1} - \text{Harga IPO}}{\text{Harga IPO}}$
4	Firm Value	Book Value (BV) Price to Book Value (PBV) Closing Price (CP) Price to Earning Ratio (PER) Tobin's Q	ICMD	BV = $\frac{\text{Total Equity}}{\text{Out standing Share}}$ PBV = $\frac{\text{Current Price}}{\text{Book Value}}$ CP = Log Closing Price PER = $\frac{\text{Current Price}}{\text{EPS}}$ $(\text{EMD} + \text{D}) / (\text{EBV} + \text{D})$

METHODS OF RESEARCH

Data analysis methods used include financial ratio analysis, descriptive statistical analysis and inferential statistical analysis. Inferential statistical analysis of this study uses Warp-PLS analysis. Warp-PLS is used based on the fact that the research concept model is a multi-influential and tiered influence. In addition, the variables analyzed in this study are latent with the indicator model reflective and formative. The effect model between variables in this study is described by the system of equations as follows:

$$Y_1 = a_1 + b_1X_1 + b_2X_2 + e_1$$

$$Y_2 = a_2 + b_3X_1 + b_4X_2 + b_5Y_1 + e_2$$

Where: X_1 - Accounting Information; X_2 - Non-Accounting Information; Y_1 - IPO Underpricing; Y_2 - Firm Value.

Exploration Indicator Loading and Weights, The weight value of the factor (weight indicator) describes the strength of the indicator (dimension) as a measure of the variable. Dimensions (indicators) with a large value of weight factors indicate the dimensions (indicators) have a strong ability to reflect variables. Dimensions (indicators) with the weight value of the biggest factor is the most powerful (dominant) dimension as a measure of the variable concerned. A positive or negative sign indicates the direction, as found in the path coefficient (regression).

The results of the analysis of the weight of the factor (indicator weight) in full are presented in the following table.

Table 1 – Indicator Loading for Non Accounting Information Variables

No	Indicator	Loading	p value	Remarks
Non Accounting Information Variables				
1	Underwriter Reputation (RU)	0.836	<0.001	Strong
2	Auditor Reputation (RA)	0.836	<0.001	Strong

The RU and RA indicators in the table above are equally strong, RU and RA have balanced strength reflecting Non Accounting Information.

Table 2 – Weight Indicator for Variable Accounting Information and Firm Value

No	Indicator	Weight	p value	Remarks
Accounting Information Variables				
1	ROA	0.387	<0.001	-
2	ROE	0.360	<0.001	-
3	EPS	0.415	<0.001	Strongest
Firm Value Variables				
1	BV	0.377	<0.001	-
2	PBV	0.342	0.001	-
3	CP	0.424	<0.001	Strongest

EPS indicator is the strongest indicator in forming Accounting Information variables, then ROA and ROE, but the strength is relatively balanced, because the difference in weight values is only the second digit behind comma. CP indicators are the strongest indicators in forming Corporate Value variables, followed by BV and PBV.

RESULTS AND DISCUSSION

Hypothesis testing is done using Warp-PLS analysis, the results of hypothesis testing can be seen in the following figure.

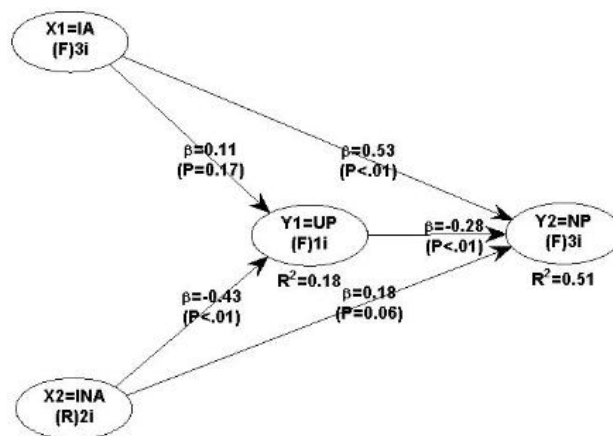


Figure 1 – Hypothesis Testing Results

Table 3 – The results of hypothesis testing

No	Effect between Variables		Path Coefficient	p-value
	Independent Variables	Dependent Variables		
1	Accounting Information	IPO underpricing	0.110 ^{ns}	0.172
2	Non Accounting Information	IPO underpricing	-0.434 ^{***}	<0.001
3	Accounting Information	Firm value	0.528 ^{***}	<0.001
4	Non Accounting Information	Firm value	0.179 ^{ns}	0.058
5	IPO Underpricing	Firm value	-0.279 ^{**}	0.006

Notes: *** = significant on α 0.01 (highly significant); ** = significant on α 0.05 (significant); ns = not significant.

The results of the analysis of the effect of Accounting Information on Underpricing IPO, path coefficient value = 0.110 and p-value = 0.172 results are not significant. This result illustrates that the good and bad of Accounting Information will not determine the Underpricing IPO. The theory of information asymmetry, Baron (1982), explains that differences in information held by issuers, underwriters, and investors result in underpricing. This study is consistent with the research of Martani, et al (2012), and supports the research of Razafindrabinina, et al (2013).

The results of the analysis of the effect of Non Accounting Information on Underpricing IPO, path coefficient value = -0.434 and p-value <0.001 results are significant. The negative path coefficient shows that the better Non Accounting Information, the lower Underpricing IPO. This study is consistent with the study of Carter and Manaster (1990), consistent with the research of Brau and Carpenter (2012). However this study does not support the research of Annuar (1997) and Martani, et al (2012) whose results are not significant.

The results of the analysis of the effect of Accounting Information on Firm Value, path coefficient value = 0.528 and p-value <0.001 the result is significant. The path coefficient is positive, indicating the better information on accounting. The higher the Firm Values. This study is consistent with Blessing's research (2015).

The results of the analysis of the effect of Non Accounting Information on Firm Value, path coefficient value = 0.179 and p-value = 0.058 the results are not significant. These results indicate the good or bad of Non Accounting Information does not determine the high or low Firm Values. This study supports the results of the study of Martani, et al (2012), but does not support the research of Razafindrabinina, et al (2013).

The results of the analysis of the effect of Underpricing IPO Information on Firm Value path coefficient value = -0,279 and p-value = 0.006 the results are significant. The path coefficient is negative, indicating that the higher the Underpricing IPO, the lower the value of the Company. This study proves the theory of Long-run Underpricing, Ritter (1991) which states that Underpricing IPO, in the long-term performance underperformance and abnormal returns occur. This study also proves empirically the Overreaction Theory, which states that the initial share price set by the underwriter is appropriate, and the positive Initial Return that arises is a result of irrational investor overreaction, Ritter, et al (1991).

CONCLUSION

The conclusions of the results of this study using Warp-PLS are: 1). The effect of Accounting Information on Underpricing's IPO is insignificant. 2). The effect of Non Accounting Information on Underpricing's IPO is negative and significant. 3). The effect of Accounting Information on Firm Values is positive and significant. 4). The effect of Non Accounting Information on Firm Values is not significant. 5). The effect of Underpricing's IPO Information on Firm Values is negative and significant.

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CONSUMER CHARACTERISTICS RELATED TO WILLINGNESS TO PAY FOR ORGANIC RICE

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ABSTRACT

Rice is one of the staple foods which are one of the great potentials to be produced in premium. Premium rice is rice that is free of artificial chemicals which can endanger the health of consumers so that premium rice is healthy for consumption. There is a new fact that the demand for organic rice products is more increasing. The aims of this study are to identify the preferred type of organic rice in the market and to identify the characteristics of its consumers. The analysis method uses descriptive analysis and to calculate the value of willingness to pay (WTP) consumer using Contingent Valuation Method (CVM). The results show the most demand for organic rice is N 790 and riceya. The type of consumer of organic rice is entrepreneur and government employees. Finally, the willingness to pay for organic rice is based on the reason for the positive impact on the environment and health.

KEY WORDS

Willingness to pay, organic rice, consumers, characteristics, health.

Increasing population and along with the times have also led to an increase in demand for food products, one of which is rice. Rice is a staple food that is needed by all people to meet their calorie needs. For Indonesian people, rice is known as the main food ingredient which is not easily replaced by other food ingredients. In line with the increasingly high standard of human life and the increasing population of the world, the protection of land resources is becoming a concern. Efforts to increase productivity are finally faced with the problem of how to limit environmental damage and further resources through an environmentally friendly organic farming system. People are beginning to realize the dangers of modern farming systems with the use of chemical fertilizers so that they are now turning to organic farming systems (Verma et al., 2011). The transition of people to a healthier lifestyle is increasing along with the increase in demand for organic products.

Public awareness of health is more tend to consume organic rice. Organic rice, which is rice that does not contain harmful chemicals (Takei, N. 2019; Pantoja, et al., 2016). The use of chemical pesticides and chemical fertilizers is replaced by the use of organic pesticides and fertilizers, so organic farming no longer relies on chemical pesticides alone but uses biological pesticides so it is safer to consume. Organic food products have many advantages compared to inorganic food products namely environmentally friendly and do not endanger the health of consumers (Novandari, 2011). However, in obtaining organic rice there are still some obstacles, namely the lack of information available to consumers regarding organic food and its limited supply also causes organic food products not to develop evenly and the price of organic rice is more expensive than non-organic rice (Jukes & Anderson Stout, 1977). Nevertheless, the potential demand for organic food products, one of which is organic rice in Indonesia, has increased considerably in recent years. Based on the institute's strategic planning study in Garretson et al. (2002) found that quality products will be more profitable and have the largest market share.

The willingness or willingness to pay according to Fauzi (2006) can be defined as the amount that a consumer can pay to obtain a good or service. Sure (1997) defines the willingness of consumers to pay (Willingness to Pay) as the amount of money someone wants to give to obtain an improvement in environmental conditions. Thus, willingness to pay is the maximum value that consumers want to pay to get a product (Balogh et al., 2016) or can also be interpreted as the willingness of consumers to pay more for the premium price of a product or service. This connotation takes into account the degree of sacrifice for what consumers have acquired (Shin et al., 2017). Purchasing decision theory according to Engel (1995) says that the buying decision making process refers to consistent and prudent actions taken to meet needs. There are various types of organic rice sold on the market. This indicates the existence of competition in marketing organic rice. Producers are required to determine the right marketing strategy to get customer loyalty. One of the ways is to analyze the value of willingness to be paid or willingness to pay (WTP) by consumers to organic rice. Consumers who consume organic rice certainly have different characteristics. Thus the clustering of WTP values based on consumer characteristics can help in determining the market segment. From the description above, it is obtained the purpose of this study to identify organic rice which circulating in the market and identify the characteristics of consumers who purchase organic rice using descriptive analysis, calculating the willingness to pay (WTP) of consumers by using the Contingent Valuation Method (CVM) method.

METHODS OF RESEARCH

This research was conducted in a modern market that sells organic rice in the city of Malang. Site selection is done intentionally, because in the city of Malang has different characteristics of society, either at the level of education, employment and income. In this study, 80 respondents were chosen. Data analysis used is descriptive analysis to describe the characteristics of organic rice consumers and quantitative analysis using willingness to pay (WTP) to determine the value that consumers want to pay. WTP calculations for goods that have market prices do not have a special calculation method. Thus, several steps are used to find the best results, so there are several steps that are the same as the CVM method as revealed by Hanlay and Spash (1993) in Simanjutak (2006).

RESULTS OF STUDY

Organic Rice which Circulating in Malang City Market is one of the big cities located in East Java. Malang City has a diversity of population starting from the level of education, employment and income. In recent years, a healthier lifestyle has become increasingly popular. One of the ways is to choose organic processed foods, including rice. Organic rice is rice that is free from preservatives and bleach, thus producing rice that has a softer texture and a more natural aroma. In the city of Malang there are also various modern markets that sell a variety of organic rice, such as Hypermarket, Mall Olympic Garden, Avia, Carrefour and outlets that sell organic rice. As for some organic rice sold in the modern market, among others, the brand of riceya, N790, coklat organic, pandan wangi and mentik wangi delangu. From each organic rice brands have different prices as presented in Table 1.

Based on Table 1 the brand of organic rice that has the highest price of one kg, which is 25.000 IDR/ Kg, N790 brand organic rice and mentik wangi delangu brand has a selling price of 20.000 IDR/ kg, while the organic rice of the coklat organic brand and the pandan wangi brand has the lowest price among the prices of other organic rice, which is 17.000 IDR. High and low prices on organic rice will also affect consumers in buying organic rice. This is in accordance with Castro&Knoke (2015) opinion in his research which states that the high and low prices of organic rice will affect consumers in making decisions. While according to Liang (2016) relation to low-price scenarios, consumers required more confidence to purchase higher-priced goods, meaning that the relational embeddedness in a channel exerted more influence on purchase intentions. By contrast, compared to the high-price scenarios, consumers tended to choose lower-priced goods based on personal

preferences, e.g., making the purchase decision based on trust in the organic label and attitudes toward organic food.

Table 1 – List of Organic Rice Prices

Organic Rice Brand	Price (Kg)
Riceya	25.000
N 790	20.000
Coklat organic	17.000
Pandan Wangi	17.000
Mentik Wangi Delangu	20.000

Source: Primary Data, 2018.

Consumer Characteristics. The characteristics of respondents can be an illustration in identifying consumer behavior. Respondents in this study can be described by their characteristics, such as gender, age, marital status, education, occupation, income, consumption level. In the research conducted by Levy and Maheswaran (1990) it was found that there were differences in the behavior of the types of respondents male and female. These differences include the process of receiving information, differences in attitude so that there is an influence on behavior in making purchases.

Table 2 – Characteristics of Respondents by Gender

Gender Person	Number (Person)	Distribution (%)
Male	30	37.5
Female	50	62.5
Total	80	100

Source: Primary Data, 2018.

Respondents of organic rice in Malang city of male gender amounted to 30 people or 37.5%, while female respondents were 50 people or 62.5%. From the data, it can be seen that the difference between male and female respondents is about 25%. Here it is considered that women tend to influence decisions in the purchase of organic rice. Ginigaddara et al, 2017 also proved that the awareness and the purchasing decision making for organic foods are higher among females than males.

Characteristics of organic rice respondents in Malang City are spread based on several age levels. According to Peter and Olson (1999) states that the characteristics attached to each individual is different and may affect the behavior patterns in determining the purchase.

Table 3 – Characteristics of Respondents by Age

Age (Year)	Number (Person)	Distribution (%)
< 30	20	25
30-39	35	43.75
40-49	15	18.75
50-59	10	12.5
Total	80	100

Source: Primary Data, 2018.

Based on the table above, 20 people under 30 years old, 30-39 years old as many as 35 people, 40-49 years old as many as 15 people and 50-59 years old as many as 10 people, with different ages will be able to influence in making decisions to buy organic rice.

Marital status is considered important as a category of characteristics of respondents assessed. In Peter and Olson (1999), it is stated that an individual's marital status can influence behavior patterns in determining purchasing decisions, this is due to the influence of the family and the environment that determines the behavior of individuals as consumers.

Table 4 – Characteristics of Respondents by Marriage Status

Marriage Status (Year)	Number (Person)	Distribution (%)
Not Married	25	31.25
Married	55	68.75
Total	80	100

Source: Primary Data, 2018.

According to the data in the table above, the respondents in this study were 25 unmarried people and 55 married people. Organic rice consumers are very diverse both those who are married or not married. Education is one characteristic that is good enough to describe the identity of respondents.

Table 5 – Characteristics of Respondents according to Level of Education

Level of Education	Number (Person)	Distribution (%)
Senior High School	20	25
Diploma	15	18.75
Bachelor	45	56.25
Total	80	100

Source: Primary Data, 2018.

Be aware of the table above there are some respondents who only have the last education of Senior High School and Diploma, but most respondents are educated, the last education of Bachelor there were as many as 45 people or 56.25%. With the existence of differences in the last educational range carried by the respondents, it will also influence the decision to buy organic rice.

Distribution of respondents based on work, then there are several classes of work, i.e. entrepreneurs, civil servants, private employees and students/ college students.

Table 6 – Characteristics of Respondents by Job Type

Type of Job	Number (Person)	Distribution (%)
Entrepreneur	30	37.5
Government employees	25	31.25
Private employees	15	18.75
Student	10	12.5
Total	80	100

Source: Primary Data, 2018.

Table of respondents according to the type of work above shows that the entrepreneur respondents are 37.5%, civil servants are 31.25% and the rest are private employees and students at 18.75% and 12.5%. This is related to the modern paradigm that highly educated people have a level of consumption of organic rice, because it is influenced by their lifestyle.

Respondents' income is very diverse, the high and low income influences lifestyle. Thus in this study the income of the respondents is grouped as in the table below.

Table 7 – Characteristics of Respondents according to Income

Income	Number (Person)	Distribution (%)
≤ 1.000.000	5	12.5
1.000.000 – 1.900.000	10	37.5
2.000.000 – 2.900.000	35	18.75
≥ 3.000.000	30	31.25
Total	80	100

Source: Primary Data, 2018.

The table above shows that respondents who earn less than 1 million as many as 10 people, 1 - 1.9 million as many as 30 people, 2 - 2.9 million as many as 35 people and those with income above 3 million as many as 30 people. In this case not only high-income people who want to buy organic rice, but who only middle income also want to buy organic rice for health and environmental reasons. While the level of consumption of respondents to organic rice in one month in one high-low family is influenced by lifestyle, and awareness of health and environment and the number of family members. According to research Stobelaaret al, 2006 the majority of organic rice consumers have a high income in their sample having an average monthly income of less than 30,000.00KRR (147 LKR = 1 USD). Organic rice which circulating in the market there are several kinds of certain brands, while the brands are as follows in the table.

Table 8 – Characteristics of Respondents according to Organic Rice Brands

Organic Rice Brand	Number (Person)	Distribution (%)
Riceya	25	31.25
N 790	25	31.25
Coklat organic	5	6.25
Pandan Wangi	15	18.75
Mentik Wangi Delangu	10	12.5
Total	80	100

Source: Primary Data, 2018.

Based on the table organic rice brand above, the most sought after by consumers is organic rice of the riceya brand and the N790 brand which each respondent is 25% and 25%. For brands of Coklat organic is 5%, Pandan Wangi is 15% and Mentik Wangi Delangu is 10%. It turns out that high prices are not a barrier for consumers to buy organic rice. While in the study of Nie et al 2018, revealed that consumers give high value to branded organic rice that have government certification. As for some reasons consumers to consume organic rice can be seen in the following table.

Table 9 – Characteristics of Respondents According to the Reason to Consume Organic Rice

Reason to consume	Number (Person)	Distribution (%)
Lifestyle	20	25
Health	25	31.25
Environment	25	31.25
Rice Flavor and Texture	10	12.5
Total	80	100

Source: Primary Data, 2018.

Based on the above table, the reason of the respondent to consume organic rice is due to the lifestyle is 25%, because the health is 31.25%, because the environmentally friendly is 31.25%, because the taste and texture of organic rice is 12.5%. Thus the reasons for consumers to consume organic rice tend to lead to health and the environment. Because they know that organic rice is processed in an organic way, without preservatives, without dye or other chemical ingredients, resulting in rice with a pulsating texture and an appetizing fragrance. The study of Becke et al 2015, also shows health benefits as the main motive for buying organic food, with concern for the environment and taste mentioned as a secondary reason, our research found that environmental problems are the main factors that influence whether to buy organic or not.

Willingness to Pay. Respondents of this study amounted to 80 people. As many as 72 people (90%) said they were willing to pay higher than the current price to obtain organic rice products. This is because respondents are aware of the health and a healthy environment so they prefer to consume organic rice. From the study of Lavanya, B., & Saraswathi, S. 2018, it can be concluded that consumers have a positive perception towards the usage of the

organic products. The main reasons for choosing the organic products are concern for health and environment, while the remaining 8 people (10%) are not willing to pay for this quality improvement. The main reason for respondents not providing to pay more is that the current price is high and the respondent is not someone who must always consume organic rice food products.

Table 10 – Willingness to Pay Consumers

Willingness to Pay	Number (Person)	Distribution (%)
Ready	72	90
Not Available	8	10
Total	80	100

Source: Research Primary Data, 2017.

As many as eight respondents who were not willing to pay consisted of several reasons; the distribution of reasons for respondents' unwillingness to pay can be seen in Table 11.

Table 11 – Unwillingness to Pay Consumers

Unwillingness to Pay	Number (Person)	Distribution (%)
Feel satisfied with non-organic rice	5	62.5
Cannot afford 5	3	37.5
Total	8	100

Source: Primary Research Data, 2017.

Respondents stated that not being able to pay for the price increase due to quality improvement, and the non-organic rice purchased is now able to satisfy their current physical needs, so there is no need to increase their purchasing power on products considered as similar products. Based on the percentage of price increases that respondents are willing to pay can be seen in the following table.

Table 12 – Maximum average of WTP

Organic Rice Brand	Price (IDR/Kg)	Average WTP (IDR)
Riceya	25.000	28.494
N 790	20.000	22.358
Coklat organic	17.000	19.358
Pandan Wangi	17.000	18.970
Mentik Wangi Delangu	20.000	21970

Source: Primary Research Data, 2017.

Based on Table 12 it can be seen that the maximum average value of WTP is different for each organic rice brand depending on the price and willingness of the consumers to pay higher. The riceya organic rice brand has the highest maximum average value among other organic rice brands, which is 28.494 IDR. This is consistent with the opinion of Krystallis and Chryssohoidis (2005) which states that the maximum value that consumers are willing to spend depends on the type and price of the food product itself.

The respondent's WTP curve is formed using the cumulative amount of the number of individuals who choose a WTP value. The relationship of the curve illustrates the level of PAP that is willing to be paid by the number of respondents who are willing to pay at the level of the PAP. The WTP curve per organic rice brand is presented in Figure 1.

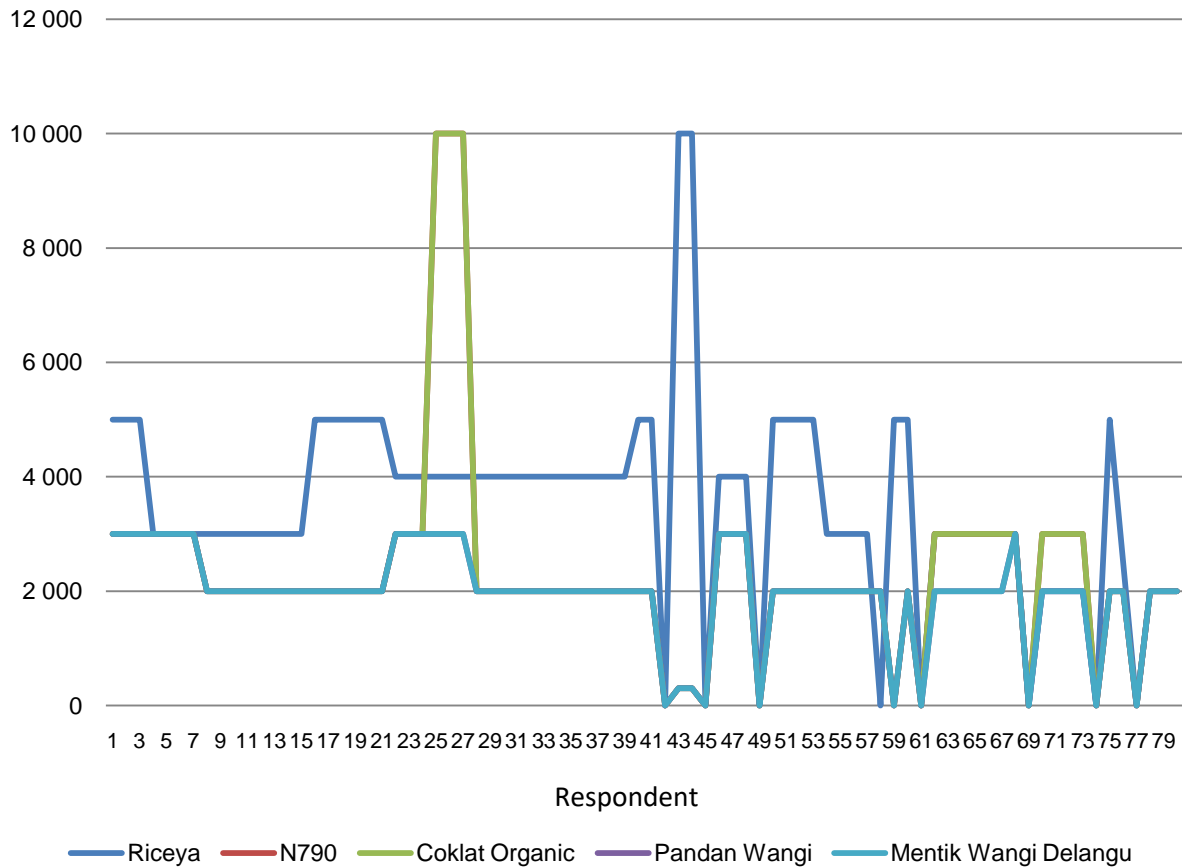


Figure 1 – Curve of WTP of Organic Rice

This relationship curve is to describe the level of PAP that is willing to be paid by the number of respondents who are willing to pay at the WTP level. The WTP curve in this study has a negative slope, the higher the WTP value; the fewer people are willing to pay.

CONCLUSION

Organic rice which circulating in the city of malang there are some brands such as the brand of riceya, N 790, coklat organik, pandan wangi and mentik wangi delangu. Characteristics of consumers of organic rice are mostly women/female; the average is married and is in the age range of 30-39 years. Consumer characteristics mostly work as self-employed and civil servants (PNS), earning an average of over three million as well as with an average Bachelor's degree of the last education. Consumers want to pay more to obtain or buy organic rice for the health and environmental reasons. The maximum average value of WTP for each kilogram of organic rice with the riceya brand is 28.494 IDR; brand of N790 is 22.35 IDR; coklat organik brand is 19.358 IDR; pandanwangi brand equal to 18.970 IDR; and mentik wangi delangu brand is 21.790 IDR.

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**MANAGEMENT STATUS OF MACKAREL (*RASTRELLIGER SP.*) RESOURCES
IN THE FISH RESOURCES DOMAIN OF REMBANG DISTRICT, CENTRAL JAVA
PROVINCE OF INDONESIA, AS A PART OF ECOSYSTEM APPROACH
OF FISHERIES MANAGEMENT**

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ABSTRACT

Mackerel is an economically high and dominant fish caught in the waters of Rembang District. Its production volume is the third largest in 2017, by 2,013 tons. Mackerel is commonly caught using a small pelagic – one boat operated purse seine with a 30 GT boat down. Intensive fishing efforts will endanger the population of this fish, so management is needed so that fish resources can be sustainable. The study was conducted in Rembang District to see the status of mackerel (*Rastrelliger* sp.) resource management in the domain of fish resources with an ecosystem approach. It lasted from December 2018 to February 2019. It employed a survey method. The indicators used in the domain of fish resource are standard CPUE, trends in fish size, proportion of juvenile fish caught, catch species composition, range collapse of fish resources, and ETP species. The results showed that standard CPUE, trends in fish size, catch species composition, proportion of juvenile fish caught, and ETP species are in good condition with a score of 3 (green modeling flag). While the range collapse of fish resources is in a moderate condition, with a score of 2 (yellow modeling flag). The composite score of 97 shows that management status of Mackerel resources in the domain of fish resource in Rembang District is in very good condition (dark green flag modeling).

KEY WORDS

Mackerel, EAFM, Rembang, indicator, composite.

Rembang District at Central Java Province, Indonesia, having a coastline of 63.5 km in length, makes fisheries the dominant livelihood for its population. The coastal area is 35.5% of its total area, amounting to 355.95 km². Of the 14 sub-districts, 6 of them are coastal sub-districts, i.e., Kaliori, Rembang, Lasem, Sluke, Krangan, and Sarang sub-districts. According to Minister of Marine Affairs and Fisheries Regulation (Permen) No.18/PERMEN-KP/2014, Rembang waters are included in the WPPNRI 712 or the Java Sea with utilization rates of 0.38 or classified as moderate (Ministerial Decrees of Marine Affairs and Fisheries Number or Kepmen Number 50/KEPMEN-KP/2017).

Rembang District has 10 (ten) active fishing ports, i.e., Tunggulsari, Tanjungsari, Tasikagung I, Tasikagung II, Banggi Market, Pangkalan, Pandangan, Karang Lincak, Karanganyar, and Sarang (Rembang Department of Maritime Affairs and Fisheries or DKP Rembang, 2017). A total of 6 (six) fishing ports are included in the Ministerial Decrees of Marine Affairs and Fisheries No. 6/KEPMEN-KP/2018, i.e., Karanganyar, Pandangan, Pangkalan, Sarang, Tanjungsari, and Tasikagung Fishing Ports.

The total production of marine fisheries in Rembang District in 2017 amounted to 36,243 tons with a production value of Rp.410.8 billion. The dominant types of fish are Layang fish (*Decapterus macrosoma*), Black Bawal (*Formio niger*), Mackerel (*Restrelliger brachysoma*), Selar (*Selaroides leptolepis*), Tembang/Jui (*Sardinella fimbriata*), Eastern little tuna (*Auxis thazard*), Spanish Mackerel (*Scomberomous lineatus*), and Squid (*Loligo* sp.).

Mackerel (*Rastrelliger brachysoma*) production is the third largest by 2,013 tons with a production value of 30.5 billion rupiahs (DKP Rembang, 2017).

Mackerel (*Rastrelliger brachysoma*) production trend in Rembang in 9 (nine) years showed a decline, which was 3,847 tons in 2009 and 2,013 tons in 2017. As proposed by Suwarso, *et al.* (2007) in Suwarso, *et al.* (2015) that in the last few years, there has been a shift in the fishing area to the west accompanied by changes in fishing targets due to the lower catch. Although in the macro scale, the potential of pelagic fish resources in WPPNRI 712 is in the moderate status.

One model of fisheries management is Fisheries Management with an Ecosystem Approach. This model was developed with a balanced purpose among all components of habitat and ecosystem including involving the community at large (Ward *et al.* 2002; Berkes, 2012) and socio-economic (FAO, 2003). According to Yulianto (2010), this model takes into account all the linkages between fish resources, habitats, fisheries actors' interventions, government, and economic actors related to fish resource commodities, and to improve the existing management quality (conventional management) (Gracia and Cochrane, 2005). Thrush and Dayton (2010) suggested that EAFM was to address the increasingly complex problems of managing coastal and marine resources while taking into account the socio-economic and ecological aspects.

Based on the background above, it needs to do research to develop a concept of sustainable resource management with an ecosystem approach. This study focuses on the domain of fish resources. The domain uses 6 indicators, namely (1) standard catch per unit effort (CPUE), (2) size of fish, (3) proportion of juvenile caught, (4) species composition, (5) range collapse of fish resources, and (6) ETP (Endangered, Threatened, and Protected) species. These six indicators will indicate the management status of Mackerel resources (*Rastrelliger* sp.), so the further management action plans can be formulated.

MATERIALS AND METHODS OF RESEARCH

Some criteria set by the writers to be the object of the research are (1) to be the fishing boat owners/captain/crew domiciled in Rembang District, (2) to have a ship with ≤ 30 GT with small pelagic – one boat operated purse seine, (3) to have fish landing base in Sarang, Karanganyar and Pandangan, (4) to target mackerel as the catch.

This study employed a survey method. It is carried out through a purposive sampling approach, which is by contacting and interviewing respondents considered to have extensive information and knowledge about the development of fish catches in the observed waters. Respondents were fishermen (owners/captain/crew) domiciled in the study area as many as 48 people.

Purposive sampling was used to determine the location based on the dominance of ships with small pelagic – one boat operated purse seine in Central Java, precisely Rembang District. Meanwhile, random sampling was applied for ships and fish. It depends on the ship landing the catch at the time of sample collection. The number of samples obtained was 25 ships and 503 fish. Sampling was carried out from December 2018 to February 2019 (3 months) at Sarang, Karanganyar, and Pandangan Fish Landing Base.

The data collected is primary and secondary data. Primary data includes the length and weight of mackerel caught, catchment area, and the type of ETP species caught. Secondary data includes the number of active vessels, the number of production (2009-2017), and the number of trips (2009-2017). Primary data was obtained through interviews and measurements of sample fish lengths. Interviews were conducted with respondents using a questionnaire guide. Measuring the length and weight of fish, for example, is done once a week in December 2018-February 2019 using block millimeter and digital scales. Secondary data was obtained through reference studies from Central Java Marine Affairs and Fisheries Department, Rembang Marine Affairs and Fisheries Department, Cilacap PSDKP (Maritime and Fisheries Monitoring Task Force) Station, and Rembang Central Bureau of Statistics. Briefly, the methods and criteria are presented in Table 1.

Table 1 – Indicator, Methodology, and Domain criteria of Fish resource

No	Indicator Attribute	Methodology / Data collection	Criteria
1	Standard CPUE	Statistical data of time series minimum of 5 years	1 = CPUE drops sharply (> 25%) 2 = CPUE decreases slightly (< 25%) 3 = CPUE is stable or increases
2	Fish size	Interviews and sampling of length measurements at fish auction houses	1 = Crab size is getting smaller 2 = relative fixed size 3 = bigger size
3	Proportion of juvenile fish caught	Interview	1 = numerous (> 60%) 2 = lots (30 - 60%) 3 = little (<30%)
4	Species composition	Interview and observation	1 = target fish proportion is smaller 2 = target fish proportion is similar to the non target 3 = non-target fish proportion is greater
5	Range collaps	Interview	1 = Fishing ground is very far away 2 = Fishing ground is far away 3 = Fishing ground is relatively fixed
6	ETP Species	Interview	1 = ETP species caught but not released; 2 = caught but released 3 = there are no ETP species caught

Source : Adrianto, et al (2014).

This study used a method that refers to the Implementation Instructions of Indicator Assessment of Fisheries Management with Ecosystem Approach composed by Adrianto, et al. (2014) and ratified in the Decree of Directorate General of Capture Fisheries Number 18/KEP-DJPT/2014.

Flag modeling technique uses a multi-criteria analysis (MCA) approach. A set of criteria is built as the basis for performance analysis of fisheries management areas viewed from the Ecosystem Approach to Fisheries Management (EAFM), through the development of composite index with the following stages: (Adrianto, Matsuda, and Sakuma. 2005).

- Determine criteria for each indicator in each domain of fish resource;
- Score on each indicator using ordinal based Likert Scores 1, 2, and 3;
- Determine the weight for each indicator.

From those six indicators, standard CPUE is the most important indicator with a weight value of 40%. Then, it is followed by trends in fish size (20%), proportion of juvenile fish caught (15%), species composition (10%), range of collapse of fish resources (10%) and ETP species (5%).

Later on, it was analyzed using simple arithmetic-average based composite analysis with the values between 100 and 8700. Later on, the values of 100-8700 are classified as 1-100 percent. The percentage value obtained is plotted in table 2 below.

Table 2 – Flag Modeling Category for EAFM Assessment

Range of Values (in percent)		Flag Model	Description
Lowest range	Highest range		
1	21	Red	Not applying EAFM yet
22	41	Light yellow	Less applying EAFM
42	60	Yellow	Is applying EAFM
61	80	Light green	Good to apply EAFM
81	100	Dark green	Excellent to apply EAFM

Source : Adrianto, et al (2014).

RESULTS AND DISCUSSION

Production, trip, and catch per trip (CPUE) of Mackerel based on small pelagic – one boat operated purse seine and *cantrang* (seine nets) in Rembang District are presented in Table 3 and Figure 1. While production and trip relations are presented in Figure 2.

Table 3 and Figure 1 shows that production tends to increase, while the number of standard trips tends to decrease, so CPUE tends to increase for 7 years (2010-2016). The average value of CPUE changes by 26.8% means that the CPUE indicator tends to increase

(Adrianto, *et al.* 2014). Maximum Sustainable Yield (MSY) value by 66,244 tons/year and Optimum Yield by 52,979 tons/year reveal that mackerel resources are thought to have overfishing. Based on the description above, the CPUE indicator is scored 3.

According to the interview results, the minimum number of catches by 5310.3 kg/trip using small pelagic – one boat operated purse seine and an average boat size of 24 GT does not damage fishermen or at least reaches Break Even Point (BEP). The number of catches is strongly influenced by boat engines and fishing gear. Diah *et al.* (2018) state that the factor of technological advancement of the fishing fleet (engines and fishing gear) also influence the increase in catches.

Table 3 – Production data and CPUE

No.	Year	Total production (kg)	Total trip	Standard CPUE	Percentage of changes (%)
1	2010	37.775.613	5.151	7.334,29	
2	2011	56.100.875	3.420	16.405,51	123,7%
3	2012	64.894.513	3.191	20.334,42	23,9%
4	2013	63.770.611	3.363	18.964,47	-6,7%
5	2014	67.612.628	3.053	22.143,65	16,8%
6	2015	66.522.874	2.650	25.100,39	13,4%
7	2016	72.757.867	3.234	22.500,96	-10,4%
Average				18.969,10	26,8%

Source : Statistical data of DKP Rembang in 2010-2017.

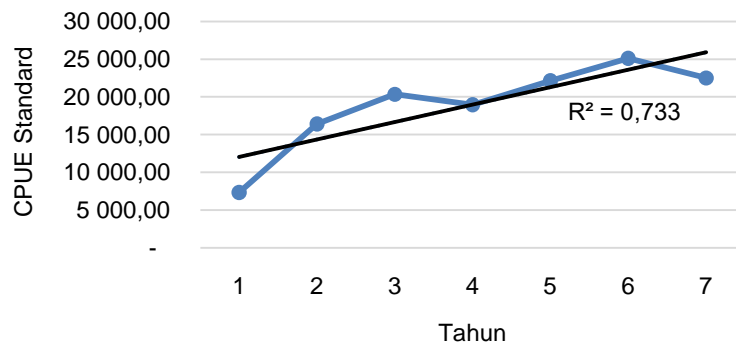


Figure 1 – Standard CPUE graph of 2010 - 2016

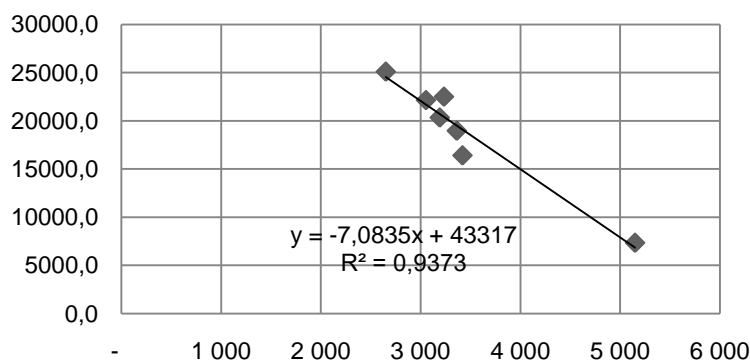


Figure 2 – CPUE relationship graph with total capture effort

Trends in fish size. The research data shows that from 48 respondents, 65% (31 respondents) said that in the last 5-10 years, trends in mackerel size caught and landed at Sarang, Karanganyar and Pandangan Fish Landing Base was relatively constant. Total Length (TL) data of sample fish is mostly 21.34 cm. Compared to the data of first fish size mature gonads (Lm) at www.fishbase.org by 17 cmTL and the study by Suwarno, *et al.* (2015) of 16.4 cm, so the value obtained at this time is higher. Therefore, it can be assumed that the average fish is those allowed to catch and the fishing equipment used is

environmentally friendly. Such conditions indicate that fish have enough time to grow up, even to spawn. This is in accordance with what Diah, *et al.* (2018) state that stuck fish size for 5 years indicates that fish have enough time to grow before being caught and have a small threat to the sustainability of fish resources. Therefore, trends in fish size indicator are scored 3.

Juvenile proportion caught. Of the 48 respondents, as many as 39 or 81% of them answered to catch a very little juvenile fish. Based on this, the score of this indicator is 3. This is because the fishing gear used is the environmentally friendly one with the mesh size of 25 mm, 800 buoys, and 210 m rope length. As stipulated in Permen KP Number 71/MEN-KP/2016, that small pelagic – one boat operated purse seine have mesh size specifications \geq 1 inch, rope rises \leq 400 meters, and use ABPI in the form of lights with a total power of \leq 8000 watts. Suhartono, *et al.* (2013) propose that one of the most effective fishing gears is a purse seine or trawl ring.

Catch Species Component. According to the interview result, mostly fish caught with small pelagic – one boat operated purse seine is Layang fish, Mackerel, Small Tuna, Juwi fish, Spanish mackerel, and squid. These fish are the target of fishing vessels with small pelagic – one boat operated purse seine. Based on statistical data, the average production of mackerel is 5.5% of the total production fish caught using small pelagic – one boat operated purse seine and *cantrang*. This is because the fishing gear is environmentally friendly as stipulated in Permen KP No.71/MEN-KP/2016. Based on the description above, the indicator score of catch species composition is 3.

Range collapse of fish resource. Based on the results of interviews, 18 or 37% of respondents said that fishing ground is getting further. They are looking for a fishing ground based on the information of fish presence from other fishermen. They dominate Karimunjawa Island, Masalembu Island, and Bawean Island, or generally, the northern sea of Java. This can be suspected because of environmental change, especially oceanography factor. As submitted by Suhartono, *et al.* (2013) that oceanography causes fish to choose places according to their physiological conditions as a form of adjustment to the environment that is beneficial to their existence.

Legally, fishermen are actually not allowed to catch up to around Bawean and Masalembu Island. That is because the ship used is 30 GT down. That kind of ship can only be operated at line II and III in WPPNRI 712 in Central Java Province (Permen KP Number 71/2016). It signifies that the fishing areas change according to the target species. Based on the description above, the score is 2.

ETP Species. Based on the results of interviews with 48 respondents, all respondents (100%) said that there are no ETP species caught using small pelagic – one boat operated purse seine, so the indicator score was 3. The fishing gear used by fishermen is still environmentally friendly one and according to specifications stipulated in Permen KP Number 71/MEN-KP/2016. Therefore, fishing activities with certain gears do not have a negative impact on ETP species (Adrianto, *et al.* 2014).

Aggregate Assessment. Assessment results of the domain in Mackerel (*Rastrelliger* sp.) resources consisting of several indicators: (1) Standard catch per unit effort (CPUE), (2) Size of fish, (3) Proportion of juvenile fish caught, (4) Composition species, (5) Range collapse of fish resources, and (6) Endangered, Threatened or Protected species (ETP) are presented in Figure 4.

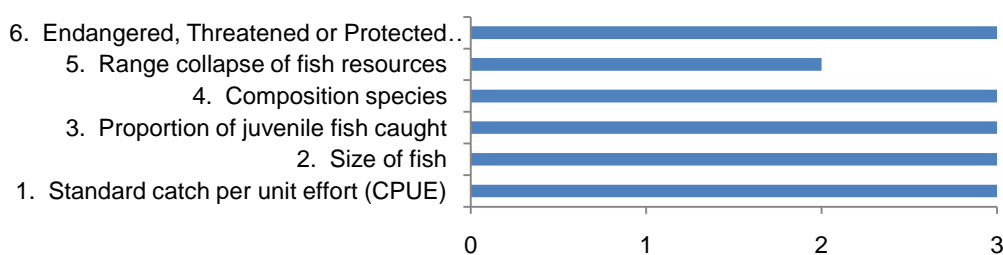


Figure 4 – Score assessment graph on the fish resource domain

Figure 4 shows that the indicator of fish resources domain for mackerel resource management is in good condition. Range collapse indicator of fish resources is 2 or having yellow flags. Standard CPUE, fish size trends, catch species composition, juvenile fish proportion caught, and ETP worth 3 or having green flags. From these results, the indicators that are taken into account are the yellow indicators, namely the range collapse of fish resources. It is followed by calculating the composite value, as presented in Table 4.

Table 4 – Composite value calculation of fish resources domain

Indicator	Score	Weight	Rank	Density	Value
Standard CPUE	3	40	1	29	3480
Trends in fish size	3	20	2	29	1740
Proportion of juvenile fish caught	3	15	3	29	1305
Capture species composition	3	10	4	29	870
Range collapse of fish resources	2	10	5	29	580
ETP Species	3	5	6	29	435
Total Score					8410
Lowest total score					100
Highest total score					8700
Composite value					97
Description					Excellent

Action plan for improvement. Assessment results of the indicators above are an illustration of EAFM-based Mackerel resource management from the fish resource domain. The next step is the preparation of a corrective action plan for each EAFM indicator. The action plan for this improvement is in the form of recommendations for plans/activities to be carried out in order to improve fisheries management from the bad category (red) to moderate (yellow), and from the medium category (yellow) to the good category (green). The implementation of the management action plan is carried out in several stages (short, medium and long term) prioritizing those categorized bad (red). The corrective action plan for each indicator is presented in Table 5.

Table 5 presents a remedial action plan for short-term management of Mackerel resources. This domain is one of the other 6 domains in EAFM-based management, i.e., habitat and ecosystem domains, fishing technique, social, economic, and institutional.

Standard CPUE indicator is worth 3, meaning that the CPUE trend tends to increase. This is in accordance with Kepmen KP Number 50/KEPMEN-KP/2017 that the utilization rate of small pelagic fish in the Java Sea (WPP-712) is 0.38 and the number of catches allowed is 291,730 tons. Steps to maintain the conditions for the next 5 years are controlling the allocation of fishing vessels with small pelagic – one boat operated purse seine through licensing in accordance with Law Number 23 Year 2014. In addition, it is possible to carry out a study of fish resource allocation and allocation of fishing businesses based on the Decree of Directorate General for Capture Fisheries Number 86/KEP-DJP/2018.

Trend in fish size is worth 3, meaning that it is getting bigger. Steps to try to maintain fish size like the current condition is to familiarize fishermen to keep using small pelagic – one boat operated purse seine with a minimum mesh size of 1 inch according to the Permen KP Number 71/2006. According to Boesono, *et al.* (2016), the mini purse seine fishing gear must refer to the existing technical provisions. In addition, in case of a long-term period, it can protect nursery ground, among others, by zoning.

Proportion of juvenile fish caught is worth 3, meaning that its proportion to catch is small. This means that the net size used by fishermen is in accordance with what required by the Minister of Marine and Fisheries Regulation Number 71/2016. This needs to be maintained by familiarizing and raising awareness about the use of the environmentally friendly fishing gear (Budiarto, 2015; Saputra, 2008). In addition, it is necessary to conduct regular supervision by the law enforcement officers (APH) both Maritime and Fisheries Monitoring Task Force (PSDKP), Provincial Department of Marine Affairs and Fishery (DKP), Water police (Sat-polair), and Navy.

Indicators of catches species composition are worth 3, meaning that the composition of target proportion is much more (31% > of total volume) and there is no non-target species

caught. Steps taken by disseminating information of fishing technology is able to reduce non-target species. Diah, *et al.* (2018) state that it needs to control the capture of non-target species, assessment of fishing technology that reduces non-target species, and the application of fishing technology which reduces the capture of non-target species.

Table 5 – Corrective action plan for each indicator in the fish resource domain

Indicator	Actual Value		Reference Indicator		Tactical Step of Management
	Score	Criteria	Score	Criteria	
Standard CPUE	3	CPUE is stable or even increases	3	CPUE is stable or even increases	Control of additional ship allocations through licensing is in accordance with the authority (Law No.23/2014) begins in the 1st year
Fish size trend	3	The size trend is getting bigger	3	The size trend is getting bigger	Disseminating information to fishermen to keep using nets with a minimum size of 1 inch mesh begins from the 1st year.
Proportion of juvenile fish caught	3	The proportion of juvenile fish caught is small (<30%)	3	The proportion of juvenile fish caught is small (<30%)	Increasing awareness of the use of environmentally friendly fishing gear (Budiaro, 2015) begins in the 1st year
Catch species composition	3	Target composition of proportions is much more (> 31% from total volume).	3	The composition of the target proportion is more (> 31% of the total volume)	Fishing socialization technology to reduce non-target species (Diah, <i>et al.</i> , 2018) begins since year 1.
Range collapse of fish source	2	Fishing ground is far away, depending on the target species	3	Fishing ground is relatively fixed, depending on the target species	Socialization and regular installation of fish houses managed in groups start in the 1st year
ETP Species	3	There are no ETP species caught	3	There are ETP species caught	Raising awareness and conducting socialization to fishermen to not catch ETP species begins in the 1st year

Furthermore, at the range collapse indicator, fish resources are worth 2, meaning that the fishing area is far away from the target species. Fishermen catching fish around the Masalembu island has violated the license and can be sanctioned if caught. In order to revitalize fish resources, it can install fish houses in certain locations to provide space for fish to find food and grow large.

The value of ETP species is good. The steps must be maintained by increasing awareness and familiarizing fishermen to not catch ETP species. The awareness of the involved parties aims to ensure that regulations can be implemented properly (Saputra, 2008).

CONCLUSION

Management status of mackerel resource in the domain of fish resources in Rembang District with EAFM approach has a composite value of 97. Its flag modeling is dark green meaning that it is excellent at implementing fisheries management with an ecosystem approach. Some indicators of CPUE, trends in fish size, composition of fish caught, proportion of juvenile fish caught, and ETP species are worth 3. While range collapse of fish resources with medium criteria is worth 2.

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IDENTIFICATION OF FOOD SELF SUFFICIENCY SUPPORTING FACTORS OF LIVESTOCK SUBSECTOR IN BATU CITY

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ABSTRACT

Building the food self sufficiency is the best strategy to get out from the food crisis. This study aims to describe the supporting factors for food self-sufficiency in Batu city. Sampling was carried out using a purposive sampling method as many as 52 farmers or breeders and 11 farmer or livestock groups. The results of the research show that 1). The linkage of production factors according to natural resources in the form of land area has the high linkages with food independence/ self sufficiency, as well as the experience of farming-livestock business and the use of capital itself has a high linkage to the food independence/self-sufficiency of the livestock subsector 2). The nature of innovation in the form of conformity, complexity, and easy to see results have a moderate linkage with food independence/ self-sufficiency in the livestock subsector 3). Food quality factors assessed according to packaging, halal quality assurance and post-harvest have high linkages to food independence in the livestock sub-sector in Batu City in terms of availability, stability of availability, affordability, security, and dependency of the food. 4). The factor of community empowerment obtained that non-formal education, capital aid and assistance together have high linkages with food independence in the availability, stability of availability, affordability, security, and dependency of the food in Batu City.

KEY WORDS

Livestock sub sector, food self-sufficiency, strategy, halal.

In the era of autonomy, the regions were given extensive authority to develop economic, social, political and cultural potential. One form of opportunity is the sharpening of development orientation based on regional potential, where each region is encouraged not only to be better able to take roles and initiatives in development planning, but also to be able to explore and exploit resources optimally to prosper the local people/community (Hudang, 2018).

The agricultural sector has also been shown to has an important role in the development of the economy of a nation (Gani & Scrimgeour, 2019; Reardon et al., 2019; Beugelsdijk et al., 2019; Paudel et al., 2019; Salmora et al., 2019; Svanbäck et al., 2019; Altieri, 2019). This is based on the contribution of the agricultural sector which does not only play a role in the formation of GDP, the creator of employment opportunities, the increase of people's income and the acquisition of foreign exchange (Kurniawan et al., 2017). The role of the agricultural sector in economic development is very important because some members of society in poor countries depend their lives on this sector (Dorosh & Thurlow, 2018; Ligon & Sadoulet, 2018; Santangelo, 2018; Emami et al., 2018; Diao et al., 2018; Mahmood & Munir, 2018). If the planners seriously pay attention to the welfare of the people, then the only way is to pay attention to the welfare of the community (Rompas, et al., 2015).

Simanjorang, et al (2017) argue that the livestock subsector is not the only superior sub-sector in the agricultural sector, so that in the development of each economic sub-sector in the agricultural sector, competition can occur between the superior subsectors. The impact is an important thing, either directly (in the sub-sectors) and indirect (in other sectors due to

the economic activity). Indirect impacts of livestock sub-sector can be known by analyzing the linkages between economic sectors by observing from the output side and from the input side. The linkage from the output side due to the production result of the livestock subsector will be used as input for other sectors (forward linkage) while the linkages from the input side arise because the livestock sub-sector also uses inputs originating from other sectors (backward linkage).

Food is one of the basic human needs so that its fulfillment becomes one of the human rights that must be met jointly by the state and its people (Davila & Dyball, 2018; Singh et al., 2019; Song et al., 2019; Vita et al., 2019; Kangmennaang & Elliott, 2019; O'Connell & Brannen, 2019). The availability, access and absorption of food is a sub-system that must be fulfilled in its entirety. One of the subsystems is not fulfilled, so a country cannot be said to have good food security. Although food is available sufficiently at the national and regional levels, but if the individual's access to meet his food needs is uneven, then food security is still said to be fragile (Hanani, 2012). Food self-sufficiency is very dependent on the empowerment of farmers in improving productivity (Meinzen-Dicet et al., 2019; Barik & Das, 2019), product quality, and added value from local food so that it has a high bargaining position and competitiveness (Yuliatmoko, 2012).

Livestock as part of the agricultural sector also has a role in economic activities in Batu City. Livestock can generally be divided into large livestock, small livestock and poultry. The population of large and small livestock such as beef cattle, dairy cows or horses, as well as goats and sheep all increase. Even the smallest livestock, rabbits, also increased (Batu City Central Bureau of Statistics, 2015). From the above explanation then it is necessary to identify the potential of the livestock sub-sector and the supporting factors for food self-sufficiency in Batu City.

METHODS OF RESEARCH

This research approach uses descriptive analysis aimed to describe the supporting factors for food self-sufficiency in Batu City by considering the following: Batu City has implemented several community empowerment programs, especially the livestock sub-sector, in realizing food independence (Bumiaji Subdistrict, Batu Subdistrict and Junrejo Subdistrict). In addition, Batu City is a tourist city with domestic and foreign tourist arrivals, making it a place for potential livestock food transactions and distribution. Sampling was carried out using a purposive sampling method of 52 farmers or breeders and 11 farmer or livestock groups. The Data Collection Technique is done by filling out the questionnaire which is done by structured interview technique. Structured interviews in the form of interviews using written questions that are alternative answers already exist and can be in the form of questionnaires.

RESULTS AND DISCUSSION

Food independence/self-sufficiency through community empowerment can be achieved by various factors that influence it. These factors are food potential, innovation, food quality, and community empowerment. The identification of the influence of these factors for food independence/self-sufficiency in Batu City is described in the following discussion.

Food production determines food availability. High and low food production is influenced by various factors of production (Ilham & Sinaga, 2007; Mun'im, 2016). In this study, factors of production consist of natural resources, namely land, and human resources, namely age, length of farm-livestock business, and management. As stated by Darwanto (2015) that the food security program is directed at the independence of the community / farmers based on local resources which are operationally carried out through programs to increase food production; maintain adequate, safe and halal food availability in each region at any time; and anticipation to avoid food insecurity.

The community has land that is used for various needs in its farming activities. There are several land areas owned by farmers in Batu City. Most have more than 0,5 hectares of

land, but not a few have land with an area ranging from 0,15 hectares to 0,25 hectares. Not only rice fields for food crops, but also gardens to cultivate horticulture plants. In addition, land is also used to build cages for livestock. There are also dry fields that are used to grow feed crops. Mr Syaiful Zulkifli, age 45, is a junior high school graduate living in Beji Village, Junrejo Subdistrict, revealing:

The land that I have is not wide, less than 1 hectare that I share the allotment. I use the biggest for rice fields, then to plant feed crops for my livestock, there are few gardens, and I also use them for cages. The land that I use to grow feed crops is rent, so it's not mine (Interview January 24th, 2018).



Figure 1 – Cage of Beef cattle (Left) and Dairy Cattle (Right)

Some types of livestock that are cultivated in Batu City include large livestock, small livestock, and poultry. The details can be seen in Table 1.

Table 1 – Types of Livestock Cultivated in Batu City

No	Large Livestock	Small Livestock	Poultry and Others
1	Dairy cows	Goat	Chicken
2	Beef cattle	Sheep	Land Fisheries
3	-	Rabbit	-

Source: Primary Data Processing, 2018.

The capital used in farming business is from its own capital and only a few make loans. The capital is used to purchase agricultural production facilities such as seeds/seedlings, polybags, fertilizers, medicines, agricultural equipment, building cages, livestock breeds, and others. This is as stated by Mr Sumari, a 45-year-old farmer with senior high school as the last education who lives in Tlekung Village, Junrejo Subdistrict:

The capital that I use is my own capital, not borrowing. For livestock, I use the capital for the construction and maintenance of cages, buy concentrates, then buy medicines for my livestock, etc. In addition to livestock, I also have to share the capital for farming. For this farm, I use the capital to buy seeds, fertilizers, farming tools, medicines, and other necessities. I also use it to grow feed crops for my livestock (Interview January 22nd, 2018).

Most of the livestock-farming business actors in Kota Batu have been doing business for more than 16 years. But there are also some who have less than 15 years experience in farming-livestock. Farmers who are active in conducting livestock-farming business on average are 49 years old; most of them are in the 45 to 53 years age group. Education is mostly high school (SMA) even though there are also quite a few who have graduated from elementary school (SD).

Management of livestock-farming is one of the factors of production which is also studied. The management carried out by livestock-farming actors in Kota Batu is already quite good. Things that have been done in managing livestock-farming business include planning the input use, using modern and traditional cultivation techniques, post-harvest treatment, diversification of food, owning a production market, but there are still some who have not yet done the bookkeeping.

Based on the description of the production factors above, the linkages between production factors according to natural resources in the form of land area are high related to food independence, as well as farming-livestock experience and the use of own capital have

a high linkage to food independence/self-sufficiency in the livestock sub-sector in Batu City. The findings of this study are supported by Chapman & Slaymaker (2002); Pretty et al. (2012); Rangkuti (2017); Knickel et al. (2009); Waisbord, (2018); Vicol et al. (2018); Reardon et al. (2019); Jayne et al. (2019); McCluskey et al. (2019); Tanner et al. (2019); Eitzinger et al. (2019); that the role of agricultural development communication is increasingly important in realizing food self-sufficiency and food diversification as the foundation for creating food independence and reliable food security. Food independence can only be realized if development is carried out on the initiative of the community as a form of awareness to build a modern farming business supported by effective and efficient communication strategies (Rivera et al., 2003; Meera et al., 2004; Xiao-Pan et al., 2019; Jacobi et al., 2019; Zucchella & Previtali, 2019). More detailed assessment results are presented in Table 2.

Table 2 – Linkage of Parameters of Production Factors with Food Independence/self-sufficiency of the Livestock Subsector in Batu City

No	Food Distribution	Food Independence/self-sufficiency									
		Availability		Stability		Affordability		Security		Dependency	
		B	K	B	K	B	K	B	K	B	K
1	Natural resources:										
	Land Area	60	T	60	T	60	T	60	T	60	T
2	Human resources:										
	Experience	60	T	60	T	60	T	60	T	60	T
	Age	30	S	30	S	30	S	30	S	30	S
3	Capital:										
	Own	60	T	60	T	60	T	60	T	60	T
	Loans	10	R	10	R	10	R	10	R	10	R
4	Management	30	S	30	S	30	S	30	S	30	S

Source: Primary Data Processing, 2018.

Note: B – Bobot / Weight; K – Kriteria / Criteria, where if the value of B = 10 then K = Low / Rendah (R); B = 30 then K = Medium / Sedang (S); the value of B = 60 then K = Tinggi (T).

Based on Table 2, the age of business actors and management of livestock-farming business have a medium linkage. The use of loan capital has a low linkage with food independence/self-sufficiency in the livestock sub-sector in Batu City in terms of availability, stability of availability, affordability, security and dependency of the food.

Innovation is defined as an idea, practice or object that is considered new by someone or by another adoption unit (Peshin et al., 2019; Borges et al., 2019; Scheller et al., 2019). New criteria is the main criteria of an innovation. In relation to technology, as long as the technology is new to the user's view, technology in this case can be considered an innovation. Adopting an innovation is based on four things, namely the willingness to do something, know how will to do it, know how to do it, and have the means to do it. Factors that influence the speed of adoption of innovation are relative advantages, compatibility, complexity, can be tried, and easily seen. (Roger, 1995)

Relative advantage means that innovation will be quickly adopted if it provides benefits compared to pre-existing technology. The Acceleration of Diversification of Food Consumption/Percepatan Penganekaragaman Konsumsi Pangan (P2KP) is a program to support the livestock subsector in order to increase nutritional intake in Batu City. The innovation offered is to utilize the potential that exists around the community, such as home yards, to be used in livestock-farming activities. Mr. Supriyanto, 47, a farmer who lives in Junrejo Village, Subdistrict of Junrejo, revealed:

The instructor gave us knowledge about the P2KP and encouraged us to try on the land we owned. In addition to science, we were also given assistance in the form of seeds, polybags, fertilizers, and medicines so that we could immediately practice the knowledge on our own land. Incidentally, I have enough yard. I also tried planting the yard with fruit and vegetable plants. I am thankful that the results of the yard can be consumed with my family. The result is not bad, we don't need to buy fruits and vegetables because they are available in the yard. (Interview January 3rd, 2018).

Another program carried out by the government to support food self-sufficiency in the livestock sub-sector is Special efforts of Broodstock Mandatory Pregnant/Upaya Khusus Sapi Indukan Wajib Bunting (Upsus Siwab). The program is an effort to increase the population of beef cattle through Artificial Insemination/Inseminasi Buatan (IB) and Intensification of Natural Mating/Intensifikasi Kawin Alam (Inka). The program uses the community's active role approach by optimizing available livestock resources so that the desired level of pregnancy is achieved.

The advantage of innovation given still less when viewed in terms of cost. Most said that the program costs less than 50 percent cheaper and only a few people said that the costs incurred were more than 90 percent cheaper compared to previous innovations. In addition, in terms of profits only produce less than 50 percent when compared to previous innovations.

Innovation will be adopted if it has conformity with the values of pre-existing trust or habits (Carolan, 2006). These values can be seen in terms of ethics, aesthetics, intellectuality, religion, and social. The empowerment program provided is considered to be in accordance with the values previously mentioned by most people. Meanwhile, if viewed in terms of conformity with previous ideas or innovations, there are still many people who say that the program or innovation is not appropriate because it only has conformity between 50-60 percent. In addition, this program is also not in accordance with community needs.

Adoption of technological innovation will increase productivity and product quality (Chavas, 2001; Sunding & Zilberman, 2001; Hall Khan, 2003, Abebe et al., 2013; Barnes et al., 2019; Reardon et al., 2019; Oliveira et al., 2019); increase added value with the approach of empowerment and farmer participation and strengthen institutions and competitiveness (Rangkuti, 2017).

Innovation will be fast and can be adopted if it is easy to try on existing situations and conditions. Limited land requires innovation to be able to be tested on a small scale of less than 250 square meters. Most say innovation can be tried on a very small scale with a land area ranging from 250 to 875 square meters. In addition to being able to be tried on a small scale, the visibility of innovation results is located at a level that is rather fast to quickly be seen. Innovation which slows to see it results will certainly make people reluctant to adopt it. Mr. M. Sururi, 45 years old, who lives in Pesanggrahan Village said:

I am very happy about the new innovations provided by the government. Like the Upsus Siwab program that taught me how to breed the beef cattle through IB and Inca. For farmers and small breeders like me this innovation is very helpful if it can be applied to limited land and the results can be quickly seen so as to increase my income. Certainly such programs must be held sustainably and if possible other programs must be sustainable with existing programs, so we don't need to learn from the beginning (Interview January 17th, 2018).

Table 3 – Linkage of Parameters of Innovation with Food self-sufficiency of the Livestock Subsector in Batu City

No	Nature of Innovation	Food self-sufficiency									
		Availability		Stability		Affordability		Security		Dependency	
		B	K	B	K	B	K	B	K	B	K
1	Advantage	10	R	10	R	10	R	10	R	10	R
2	Conformity	30	S	30	S	30	S	30	S	30	S
3	Complexity	30	S	30	S	30	S	30	S	30	S
4	Experimentality	60	T	60	T	60	T	60	T	60	T
5	Easily Seen	30	S	30	S	30	S	30	S	30	S

Source: Primary Data Processing, 2018.

Note: B - Bobot/ Weight; K - Kriteria/ Criteria, where if the value of B = 10 then K= Low / Rendah (R); B= 30 then K= Medium/ Sedang (S); the value of B= 60 then K= High/ Tinggi (T).

Explanation of the factors or nature of innovation above is then used to assess the linkage of innovation with food independence/self-sufficiency in the livestock sub-sector in Batu City. The informants who have been interviewed argue that innovation has a moderate

linkage, where the nature of innovation, namely trial, has a high linkage, while the benefits of innovation has the low linkage to food independence/ self-sufficiency in the livestock sub-sector in Batu City. An assessment of innovation can be seen in Table 3.

Based on Table 3 it shown that the nature of innovation in the form of conformity, complexity and easily seen results has a moderate relationship/linkage with food independence/self-sufficiency in the livestock sub-sector in Batu City judged by indicators of food availability, stability of food availability, food affordability, food security, and food dependency.

Some treatments are needed to be able to ensure the quality of food to be guaranteed. One such treatment is to conduct packaging on food products produced. Packaging aims to avoid contamination of foreign objects or substances that can reduce food quality. Most of the livestock-farming businesses in Batu City have already carried out product packaging in accordance with applicable standards.

As one of the processes of a series of post-harvest activities, packaging plays an important role in influencing consumers. Not only must be safe from foreign object contamination, but the packaging of a product must also be attractive. This is of course to make consumers interested in buying the product when they first see it. According to the recognition of livestock-farming business actors in Batu City, most of them have made attractive packaging for their products. In addition, their products already have halal quality assurance standards for the products they produce. Consumers do not need to worry about the halal products they buy. Mr. Sumadik, 49 years old, a farmer who breeds as a side business lives in Giripurno Village, Bumiaji Subdistrict, reveals:

In order to meet the demands of buyers, I always try to do the packaging of my crop product according to the standards they want. I also guarantee that my product is halal. The product I pack attractively so that consumers are interested in buying. I realized that with such treatment, my products were increasingly in demand by buyers (Interview January 29th, 2018).

A good and standard post-harvest treatment will be able to increase the income of farmers-breeders. Not only maintaining food quality, but also being able to increase it so that it can add value to the sale of products. The quality of food products has been considered by livestock-farming businesses in Batu City so that this factor has a high linkage. The results of the assessment are presented in Table 4.

Table 4 – Linkage of Food Quality Parameters to Food Self-Sufficiency of Livestock Subsectors in Batu City

No	Food Quality	Food Self-Sufficiency									
		Availability		Stability		Affordability		Security		Dependency	
		B	K	B	K	B	K	B	K	B	K
1	Packaging	60	T	60	T	60	T	60	T	60	T
2	Quality Assurance	60	T	60	T	60	T	60	T	60	T
3	PostHarvest	60	T	60	T	60	T	60	T	60	T

Source: Primary Data Processing, 2018.

Note: B – Bobot / Weight; K – Kriteria / Criteria, where if the value of B = 10 then K= Low / Rendah (R); B= 30 then K= Medium/ Sedang (S); the value of B= 60 then K= High/ Tinggi (T).

Based on Table 4. that the food quality factors assessed according to packaging, halal quality assurance, and post-harvest have high linkage to food independence of livestock sub-sector in Batu City in terms of availability, stability of availability, affordability, security, and dependency of the food.

Community empowerment is a series of planned efforts that aim to make changes to a community in order to change society from a state of helplessness to empowerment by emphasizing the activities of community-owned potential development carried out through non-formal education / extension activities (Fraser et al., 2006; Dillon, 2016; Christens, 2019).

The extension program as a manifestation of the community empowerment program of livestock-farmers actor in Batu City is carried out once every month on average. Furthermore, there are also groups of livestock-farming businesses actor visited by extension agents every two or one week. Others get counseling every two or three months.

Assistance made to livestock farming business actor is carried out by agricultural instructors. According to the livestock-farming business actors in Batu City, the quality of the material provided by the instructor is good. Extension agents are also considered to have performed their roles well. In general, the extension/counseling activities of livestock farming business in the city of Batu have provided satisfaction for livestock-farming business actors when viewed in terms of process, material and human resources of the extension agent.

The aspect of empowerment in addition to non-formal education through counseling is the provision of capital. The capital provider institution that serves the livestock-farming business in Batu City is Bank Rakyat Indonesia (BRI). Submission of capital funds to BRI can be done by farmer groups that already have a valid notary deed. The process of submitting and channeling funds for livestock-farming business actors can be started from the submission of requests for funds through Gapoktan then the funds obtained by farmer groups will be distributed to members of farmer groups of one million rupiah to each member.

Farming-livestock business actors are able to get average capital assistance once a year and others get twice capital assistance in one year. Only small percentages get capital assistance every two years or more than once every two years.

Farming-livestock business actors in the city of Batu also receive government assistance in the form of Special efforts of Broodstock Mandatory Pregnant/ Upaya Khusus Sapi Indukan Wajib Bunting UPSUS SIWAB to dairy farmers. Assistance also comes in the form of the giving 2-5 cows per farmer group which are intended to be treated together by members of the farmer group in the same location. The livestock-farming business actors is considered to have enough enthusiasm in accessing assistance and participating in empowerment activities. The enthusiasm of livestock-farming business actors is quite high as described by Darmadji 48 from the village of Junrejo.

Community the members of farmer groups tend to welcome the presence of empowerment activities in the form of teaching and material assistance. Examples in this Junrejo, in 2016 there was once the assistance of procurement of beef cattle seedlings. Beside that there has also been capital assistance for the development of farmer groups. If the assistance comes regularly every year the members of the farmer group also become helped because the business is also supported by the government (Interview Results January 4th, 2018).

Livestock farming business actors get assistance from government agencies/institutions. The intensity of extension activities carried out by institutions/agencies is on average once a month. Some others are conducted every three months. In the counseling, farmers get material about cultivation business. In general, the role of extension agents has been considered good by livestock-farming business actors. The quality of assistance provided by agencies / institutions is also considered good. An assessment of the parameters of changes in behavior of livestock farming actors in Batu City can be seen in Table 5.

Table 5 – Linkage of Parameters for Community Empowerment with Food Independence/Self-Sufficiency of the Livestock Subsector in Batu City

No	Community Empowerment	Food Self-Sufficiency									
		Availability		Stability		Affordability		Security		Dependency	
		B	K	B	K	B	K	B	K	B	K
1	Non-formal Education	60	T	60	T	60	T	60	T	60	T
2	Capital Assistance	60	T	60	T	60	T	60	T	60	T
3	Mentoring	60	T	60	T	60	T	60	T	60	T

Source: Primary Data Processing, 2018.

Note: B – Bobot / Weight; K – Kriteria / Criteria, where if the value of B = 10 then K= Slow / Rendah (R); B= 30 then K= Medium / Sedang (S); the value of B= 60 then K= High / Tinggi (T).

Based on Table 5, it can be concluded that non-formal education, capital assistance and assistance/ mentoring together have high linkage with food independence/ self-sufficiency in the availability, stability of availability, affordability, security, and dependency of the food in Batu City.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of this study, it can be concluded that 1). the linkage of production factors according to natural resources in the form of land area has the high linkages with food independence/ self sufficiency, as well as the experience of farming-livestock business and the use of capital itself has a high linkage to the food independence/self-sufficiency of the livestock subsector, the nature of innovation in the form of conformity, complexity and easily seen results has a moderate relationship with food independence in the livestock sub-sector in Batu City judged by indicators of food availability, stability of food availability, food affordability, food security, and food dependence. In addition, based on food quality factors assessed according to packaging, halal quality assurance, and post-harvest have high linkage to food independence/self-sufficiency in the livestock sub-sector in terms of availability, stability of availability, affordability, security, and dependency of the food. Furthermore, for community empowerment factors obtained that non-formal education, capital assistance and assistance/mentoring together have high linkages with food independence/self-sufficiency in terms of availability, stability of availability, affordability, security and dependency of the food in Batu City.

This study recommends the importance of realizing food self-sufficiency in the livestock sub-sector in Batu City, efforts are needed to improve the quality of content and intensity of extension, providing production facilities, optimizing capital assistance programs, intensifying the use of breeding technology and facilitating the marketing of livestock products.

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ENTREPRENEURIAL CHARACTERISTICS ON ENTREPRENEURIAL TENDENCIES AS AGE MODERATED: A STUDY ON UNIVERSITY INDONESIA

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ABSTRACT

Having the spirit of entrepreneurial is very important for the young generation, seeing the number of unemployed and the lack of land for new workers. But not all young people have the spirit as an entrepreneur or a tendency to entrepreneurial. Especially for young students, they should have more enthusiasm to build their own business. Entrepreneurial has been carried out especially in universities, with the intention that young people are formed who are entrepreneurial oriented and live independently and of course the young generation who have their own business lines will increase the country's social economic growth. Therefore, the purpose of this study is to know the influence of entrepreneurial characteristics (innovativeness, achievement, locus of control, risk taking, tolerance for ambiguity and self confidence) towards entrepreneurial tendencies moderated by age-based demographics. Respondents involved in this study were 120 students. Data analysis was done using General Linear Model (GLM) method. The results showed innovativeness increased entrepreneurial tendencies, innovativeness increased entrepreneurial tendencies but was not moderated by age, achievement did not increase entrepreneurial tendencies, achievement did not increase the tendency of entrepreneurial be moderated by age, locus of control increasing entrepreneurial tendencies, locus of control increasing the tendency of entrepreneurship but not moderated by age, risk taking increased the tendency of entrepreneurial, risk taking increased the tendency of entrepreneurial but not moderated by age, tolerance for ambiguity increased the tendency of entrepreneurial, tolerance for ambiguity increased the tendency of entrepreneurial but not moderated by age, self confidence increased the tendency of entrepreneurial and self confidence increased the tendency of entrepreneurial but not moderated by age to students.

KEY WORDS

Innovativeness, achievement, locus of control, risk taking, tolerance for ambiguity.

Entrepreneurial has become an important issue among academics regarding its positive contribution to social and economic life. The nature of entrepreneurial personality is learned in order to know the characteristics of individuals who distinguish an entrepreneur and not an entrepreneur. To be able to achieve its goals, it requires attitude and supportive behavior in an entrepreneur. Some characteristics that have been of particular concern in the entrepreneurial literature are among others the need for achievement, locus of control, tolerance for ambiguity, self-confidence, creativity or innovation, the tendency to take risks and independence or freedom (Bezzina, 2010). But not all students have the spirit to be an entrepreneur or a tendency to entrepreneurship. This is due to the lack of experience, lack of business capital and faced with uncertainty causing anxiety to start a business independently.

Entrepreneurial education should be given to economic units through education modules as well as individuals who have a college level education degree. Entrepreneurial has been done a lot, especially in universities, with the intention of forming young people who are oriented towards entrepreneurship and independent living. But it is not uncommon to find some students who have received entrepreneurial education with a tendency to build their own business. Based on the research conducted by Gurol and Atsan (2006) a number of students in Turkey found no significant relationship between entrepreneurship learning in the classroom with the growing tendency of entrepreneurship that will continue to act in a

real business. But the results of the study showed that, except for tolerance to ambiguity and self-confidence, all entrepreneurial traits were found to be higher in students who tended to be entrepreneurial, compared to students who tended to lack independence. This means, these students were found to have a tendency to take a higher risk, locus of control, higher needs for higher achievement and innovation.

Yusof, Sandhu and Jain (2008), its research aimed to know the extent to which young people tend to be entrepreneurial to Abdul Razak University students, Malaysia and the results showed young students were more likely to be entrepreneurs; they had a strong desire to own a business (85%) and were interested to start their own business (71%). Kume, Kume and Shahini (2013) analyzed entrepreneurship trends among students in Albania. The results of the study concluded that there is a relatively healthy level of interest in entrepreneurship among students in Albania. In this paper, students' tendency to entrepreneurship was examined together with several related variables (locus of control, entrepreneurial self-efficacy, independence motive and innovation).

Asamani and Mensah (2013), its research examined the level of entrepreneurial tendencies among Ghanaian university students, and the results of the study concluded that students in Ghana universities had a high level of entrepreneurial tendency. However, age, gender and academic programs of students were found to have no influence on their entrepreneurial tendencies. Meanwhile, students' personal characteristics such as leadership attributes, task performance attitudes, achievement attitudes and risk-taking attributes were found to have an influence on entrepreneurial tendencies.

Zaman (2013), analyzed the characteristics of entrepreneurship on entrepreneurial tendencies in students in Pakistan and the research showed that the need for achievement, locus of control, risk taking propensity, self-confidence, tolerance of ambiguity, and innovativeness influenced entrepreneurial tendencies in students in Pakistan. Furthermore, Edirisinghe and Nimeshi (2016), its study aimed to know the influence of entrepreneurial characteristics on entrepreneurial tendencies in Sri Lankan students. The results of the study conclude: need for achievement, locus of control, risk taking propensity, self confidence, and innovativeness influence entrepreneurial tendencies in the students of Kelaniya University, Sri Lanka. But the tolerance of ambiguity has no influence on entrepreneurial tendencies. Ibrahim and Saili (2017), its research was to assess the attitude of seaweed operators towards entrepreneurial tendencies. The results show that achievement, innovation and personal control are statistically significant towards temporary entrepreneurial tendencies, self-esteem does not show a significant relationship to entrepreneurial tendencies.

Referring to the research of Gurol and Atsan (2006); Asamanai and Mensah (2013), researchers tried to examine entrepreneurial trends and characteristics of entrepreneurship (the need for achievement, locus of control, tendency to take risks, tolerance for ambiguity, innovation and confidence) of regular students and executives at Esa Unggul University in Jakarta. But researchers tried to add demographic variables based on age, which students are the younger generation must be able to master the times and develop the potential and character in capturing various business opportunities to become a successful and qualified person at a young age. With regard to Esa Unggul University graduates, it is expected to have strong entrepreneurial awareness and desire. The many unique characteristics, the education business at Esa Unggul University faces severe challenges. Along with the rapid technological advances in the education business in this era of globalization

Based on the background stated, our aim in this study is to know the influence of entrepreneurial (innovativeness, achievement, locus of control, risk taking, tolerance for Ambiguity and self confidence) on entrepreneurial tendencies moderated by age-based demographics at Esa Unggul University Students, Indonesia.

DEVELOPMENT OF HYPOTHESIS

Innovation can be said to be the search for new ideas. Innovation is taken as one of the main characteristics in entrepreneurship (Gurol and Astan, 2006). Gurol and Atsan's (2006) research showed that there is an influence of innovation on entrepreneurial tendency, which

means that there are significant differences between students who tend to be entrepreneurial and those who are not inclined to entrepreneurship related to innovation. Similarly, the research by Edirisinghe and Nimeshi (2016) showed that there is a positive influence between innovations on entrepreneurial tendency. Thus, increased innovation is expected to lead to greater entrepreneurial tendencies. Likewise with the research conducted by Yusof, et al. (2007); Kume, et. Al. (2013); Zaman (2013), which showed that there is an influence between achievement needs on entrepreneurial tendencies. From the literature above, the hypothesis that can be proposed is:

H1: Innovativeness increases the tendency of entrepreneurial in students.

Achievement motivation can be instilled through training in independence, respecting hard work and perseverance in achieving goals, and creating interest in excellence. McClelland's (2012) theory of the need for achievement is the most important of various psychological theories about entrepreneurship. In McClelland's theory (2012) emphasizes the relationship of achievement motivation or the need to excel in the development economy through entrepreneurial activities. Gurol and Atsan's research (2006) showed that there is an influence of achievement needs on entrepreneurial tendencies which means that there are significant differences between students who tend to be entrepreneurial and those who do not have entrepreneurship regarding the need for achievement. Similar to Yusof's research, et al. (2007); Zaman (2013), Edirisinghe and Nimeshi (2016) showed that there is a positive influence between achievement needs on entrepreneurial tendencies. Based on this explanation, the hypothesis that can be proposed is:

H2: Achievement increases the tendency of entrepreneurial in students.

The concept of personal control, although relatively new, has received much attention in the study of psychological differences (Phares, 1976). Personal control refers to one's beliefs about control over life events (Findley and Cooper, 1983). Gurol and Atsan's (2006) research showed that there is a locus of control influence on entrepreneurial tendencies which means that there are significant differences between entrepreneurial tendencies of students and those who do not tend to be entrepreneurial regarding personal control. Similar to Yusof's research, et al. (2007); Kume, et. Al. (2013); Zaman (2013); Edirisinghe and Nimeshi (2016), which concluded that there is an influence of locus of control with entrepreneurial tendencies. From the literature above, the hypothesis that can be proposed is:

H3: Locus of control increases the tendency of entrepreneurial in students.

The tendency of risk taking can be said to be an individual's current tendency to take or avoid risk (Petrakis, 2005). Employers are usually considered to be at risk when pursuing opportunities, and are often associated with creative and innovative actions (Koh, 1996). Therefore entrepreneurs are always confronted, either voluntarily or by force, challenges of uncertainty and financial potential and social losses when running their business. Gurol and Atsan's (2006) research showed that there is an influence between risk taking on entrepreneurial tendencies which means that there are significant differences between entrepreneurial tendencies of students and those who do not tend to be entrepreneurial with respect to taking risks. Similar to Yusof's research, et al. (2007); Asamani and Mensah (2013); Zaman (2013), Edirisinghe and Nimeshi (2016), which concluded that there is a risk-taking influence with entrepreneurial tendencies. From the literature above, the hypothesis that can be proposed is:

H4: Risk taking increases the tendency of entrepreneurship in students.

Entrepreneurs not only operate in an uncertain environment, entrepreneurs eagerly do things that are unknown and voluntarily seek and manage uncertainty (Mitton, 1989). Dinis, et al. (2013) the results of his research, tolerance for ambiguity can be considered as an entrepreneurial characteristic and those who are more entrepreneurial are expected to display more tolerance for ambiguity than others. Yusof's research, et al. (2007); Zaman (2013); Edirisinghe and Nimeshi (2016) concluded that there is an influence between tolerance for ambiguity and entrepreneurial tendencies. From the literature above, the hypothesis that can be proposed is:

H5: Tolerance for ambiguity increases the tendency of entrepreneurial.

Employers usually have confidence that is abundant in their ability to succeed. They tend to be optimistic about their chances of success. Gurol and Atsan's (2006) research showed that there is an influence between confidence in entrepreneurial tendencies which means that there are significant differences between entrepreneurial tendencies of students and those who do not tend to be entrepreneurial regarding self-confidence. Similar to Yusof's research, et al. (2007); Zaman (2013); Edirisinghe and Nimeshi (2016), which concluded that there is an influence between self-confidence and entrepreneurial tendencies. From the literature above, the hypothesis that can be proposed is:

H6: Self confidence increases the tendency of entrepreneurial.

Research by Ibrahim and Saili (2017) concluded that it is not surprising that data shows that most of the age of seaweed operators is actually between 30-39 years (34.6%). The results are consistent with research conducted by Nor, Gary, Caldwell, and Stead (2016) where they found this age category to be the most common in seaweed cultivation in Semporna. Ali, et al. (2015) has explained that younger people do not like to look for agricultural jobs because they offer higher income and have better jobs compared to seaweed cultivation. Although the definition of innovation may vary, but for this research, it refers to the ability to innovate. This is reinforced by Lunkapis and Danny (2016) finding that local seaweed operators in Tun Sakaran Marine Park are willing to try new technologies but display adaptations that are slower than new changes. From the literature above, the hypothesis that can be proposed is:

H7: Innovativeness increases the tendency of entrepreneurial to be moderated by age demographics in students.

Research by Ibrahim and Saili (2017), concluded that the need for achievement shows an influence on entrepreneurial tendencies, there is a high level of achievement among seaweed operators. Similarly Collins, Hanges, and Locke (2004) found that achievement as an attitude is very important because it is able to accurately predict individual entrepreneurial activities. Interpretation can be justified through their perceived view of seaweed farming as energy. With regard to this, they must have high motivation and achievement commitments if they continue to work on agriculture. So it is not surprising that the data shows that most of the age of actual seaweed operators is between 30-39 years (34.6%). Where they found this age category as the most common in seaweed cultivation in Semporna. Younger people do not like to look for agricultural jobs because they offer higher income and have better jobs compared to seaweed cultivation. From the literature above, the hypothesis that can be proposed is:

H8: Achievement increases the tendency of entrepreneurial to be moderated by age demographics in students.

Research by Ibrahim and Saili (2017), concluded that *locus of control* reflects a person's beliefs about how far they are able to influence their results or success. The results showed significant personal control among seaweed operators. Therefore, as suggested, when their personal control increases, the tendency towards entrepreneurship will also increase proportionally. This is similar to research conducted by Bulut and Sayin (2010) where they found that people with high personal control tend to be entrepreneurs. So it is not surprising that the data shows that most of the age of actual seaweed operators is between 30-39 years (34.6%). The results are consistent with research conducted by Nor, et al. (2016) where they found this age category to be the most common in seaweed cultivation in Semporna. Younger people do not like to look for agricultural jobs because they offer higher income and have better jobs compared to seaweed cultivation. From the literature above, the hypothesis that can be proposed is:

H9: Locus of control increases the tendency of entrepreneurial to be moderated by age demographics in students.

Fathoni's research (2015) concluded that a person's chronological age related to entrepreneurial age (the length of time a person becomes an entrepreneur). This means, with the increasing age of an entrepreneur, then the person would possess more experience in the field of business. With increasing experience when a person's age increases, age is indeed related to success. Dare to take risks, consisting of: being able to take risks and like

challenges. In addition, psychological capital is also needed, namely psychological basic capital and personality that supports the characteristics of the entrepreneur to have an influence on business development. This is in accordance with research conducted by Staw in Riyanti (2003), age can be related to success when associated with the length of time a person becomes an entrepreneur. From the literature above, the hypothesis that can be proposed is:

H10: Risk taking increases the tendency of entrepreneurial to be moderated by age demographics in students.

Fathoni's research (2015) concluded that tolerance for ambiguity influences entrepreneurial tendencies, namely the characteristics of human-oriented entrepreneurship, consisting of: socializing with others, being flexible, responsive to suggestions/criticisms. Other conclusions confirm that a person's chronological age is related to entrepreneurial age (the length of time a person becomes an entrepreneur). This means, with the increasing age of an entrepreneur, then the person would possess more experience in the field of business. With the increasing experience when a person's age increases, age is indeed related to success. This is in accordance with research conducted by Staw in Riyanti (2003), age can be related to success when associated with the length of time a person becomes an entrepreneur. From the literature above, the hypothesis that can be proposed is:

H11: Tolerance ambiguity increases the tendency of entrepreneurial to be moderated by age demographics in students.

Ibrahim and Sali's research (2017) concluded that self-confidence influences entrepreneurial tendencies, in other words those who want to be decision makers must have higher self-confidence, a stronger mental focus and be very aware of what and where decisions will change. Research by Bulut and Sayin (2010) where they found that people with high self-confidence tend to be entrepreneurs. So it is not surprising that the data shows that most of the actual age of seaweed operators is between 30-39 years (34.6%). The results are similar to those of Nor, et al. (2016) where they found that this age category to be the most common in seaweed cultivation in Semporna. Younger people do not like to look for agricultural jobs because they offer higher income and have better jobs compared to seaweed cultivation. From the literature above, the hypothesis that can be proposed is:

H12: Self confident increases the tendency of entrepreneurial to be moderated by age demographics in students.

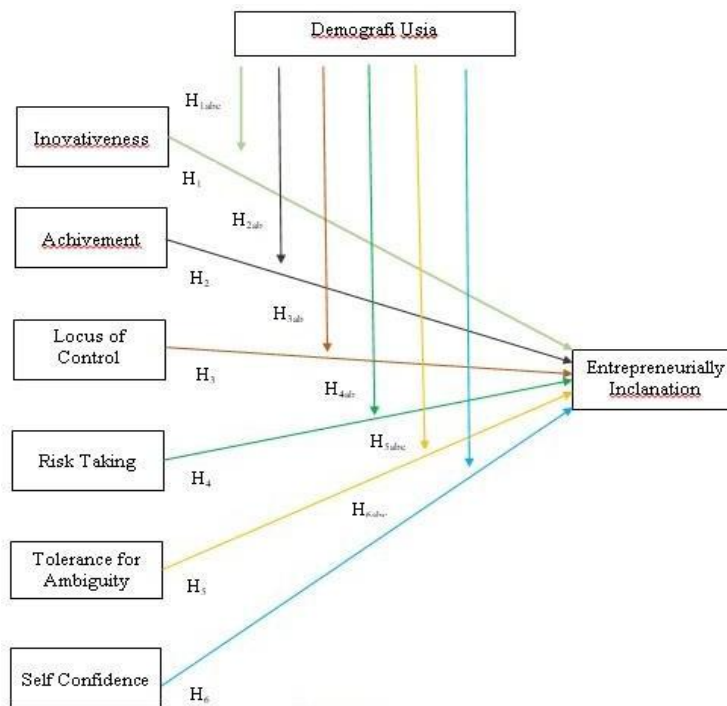


Figure 1 – Research Model

METHODS OF RESEARCH

This research was conducted at Esa Unggul University executive and regular class students and female students. The aspects studied were the characteristics of entrepreneurial (innovativeness, achievement, locus of control, risk taking, tolerance for ambiguity and entrepreneurial inclination self confidence) and age-based demographics. The study was conducted in August 2018 with survey method. This research is descriptive. Data collection was carried out by distributing questionnaires to students and students of the executive and regular classes at Esa Unggul University, Indonesia. Data analysis method in this study used non-hierarchical statistics; the data was processed with the GLM (General Linear Model) statistical software. According to Agung (2006) the sample size used is the total number of cells averaged multiplied by 30 (minimum), where the number of cells was four (Table 1) thus $4 \times 30 = 120$ respondents.

Furthermore, the determination of the middle value or the median split from the variables innovativeness, achievement, locus of control, risk taking, tolerance for ambiguity, self confidence and age, which aims to divide the groups in cells from the respondents studied. To determine the median split, obtained from 120 respondents examined with valid results and the value of each respondent. Innovativeness, achievement, locus of control, risk taking, tolerance for ambiguity, self confidence and age, which aimed to divide the groups in cells from the respondents studied. To determine the median split, obtained from 120 respondents studied with valid results and the value of each respondent, as shown in the following table, is needed:

Table 1 – Result of Total Median Split

n/n		Value Label	N
<i>Innovativeness</i>	1.00	High	53
	2.00	Low	67
<i>Achievement</i>	1.00	High	67
	2.00	Low	53
<i>Locus of control</i>	1.00	High	64
	2.00	Low	56
<i>Risk taking</i>	1.00	High	59
	2.00	Low	61
<i>Tolerance for ambiguity</i>	1.00	High	65
	2.00	Low	55
<i>Self confidence</i>	1.00	High	60
	2.00	Low	60
Age	1.00	Young	60
	2.00	Old	60

In our study, the independent variable are *innovativeness*, *achievement*, *locus of control*, *risk taking*, *tolerance for ambiguity*, *self confidence*, dependent variable is entrepreneurial tendencies while the role of motivation variable as a moderating variable that influences the independent variable and dependent variable. Measurement of innovativeness was adapted from Jackson (1994) in Mueller and Thomas (2000), variable of achievement the measurement was adapted from Rasheed (2003); Azis, Ishak, Ghani and Othman (2009); Bonnett and Furnham (1991); Taormina and Lao (2007). Measurement of *locus of control* was adapted from Rasheed (2003); Azis, *et al.* (2009); Bonnett and Furnham (1991); Luthje and Franke (2003); Birdthistle (2008). Measurement of *risk taking* was adapted from Sexton and Bowman (1985); Luthje and Franke (2003); Josien (2012). In measuring tolerance for ambiguity it was adapted from Yusof, *et al.*, (2007) and measurement of *self confidence* was adapted from Bezzina (2010), then tested for validity and reliability.

This study used confirmatory factor analysis by validity testing to know the value of Kaiser-Meyer-Olkin sampling size (KMO) and sampling adequacy size (MSA). In this study, the value obtained must be greater than 0.500 with a component matrix one, which means that the analysis factor is correct or suitable for use, and can be further processed (Malhotra, 2007). The innovativeness scale consisted of 8 questionnaires, not all were valid IN8 (0.466),

IN7 (0.573), IN1 (0.633), achievement scale consisted of 4 questionnaires and all were valid, locus of control scale consisted of 4 questionnaires and not all were valid, namely at LC4 (0.416), Risk taking scale consisted of 4 questionnaires and not all were valid, namely RT4 (0,516), tolerance for ambiguity scale consisted of 4 questionnaires and all were valid, self confidence scale consisted of 2 questionnaires and all were valid. While on entrepreneurial scale inclination consisted of 6 questionnaires and invalid in KW1 (0.570). Reliability test with Cronbach Alpha value > 0.5 which means reliable (Sugiyono, 2012), thus the questions of all variables can be said to be reliable as a data collection tool in research.

RESULTS OF STUDY

Innovativeness Increases Entrepreneurial Tendency Moderated by Age Demography. In this study, as can be seen in Table 2 where hypothesis H1 was tested by using the statistical F test on the lines of 'innovativeness and entrepreneurial tendencies' where $F_0 = 90.973$ (Sig. 0,000) with a degree of freedom of 1/116.

This indicates a rejection against H_0 , thus it can be concluded that the data supported the proposed hypothesis. This shows that innovativeness increases entrepreneurial tendencies in students at Esa Unggul University in Jakarta. The results of hypothesis 1 moderation found the results of the values to be tested to see the difference in entrepreneurial inclination (Y) mean gap which was formed by high innovativeness (IN) (IN = 1), low innovativeness (IN = 2) good for young respondents (U = 1) and the respondents of old age (U = 2) after calculating the same influence of linear innovativeness (X) on entrepreneurial inclination (Y) in all cells.

The results of the analysis supported hypothesis H1a, specifically for the respondent group with the level of old age, the group of respondents with high innovativeness had a greater entrepreneurial tendency compared to the group of respondents who had low innovativeness (β_1) with sig. values. 0.000 (<0.05). In the results of the hypothesis test 1b, found the results of the analysis did not support the hypothesis that specifically for groups of respondents with high innovativeness, the group of respondents with a young age level had a tendency to entrepreneurship greater than old age (β_2) with a sig. value. 0.785 (> 0.05). In the results of the hypothesis 1c test, it was found that the results did not support hypothesis H1c, specifically for the group of respondents with low innovativeness, the group of respondents with a young age level had a greater tendency to entrepreneurship compared to old age (β_3) with a sig. value 0.146 (> 0.05).

Table 2 – Test of Between-Subject Effects Innovativeness

Dependent Variable: EI.

Source	df	F	Sig
Corrected Model	3	30.956	0.000
Intercept	1	15349.656	0.000
INMEDIAN	1	90.973	0.000
INMEDIAN*USIA	2	1.110	0.333
Error	116		
Total	120		
Corrected Total	119		

Source: Test results on data analysis tools.

Achievement does not Increase Entrepreneurial Tendency Moderated by Age Demography. In this study, as can be seen in Table 3 where the hypothesis H2 test used statistical F test on the line 'achievement and entrepreneurial tendencies' where $F_0 = 1,299$ (Sig. 0,257) with a degree of freedom of 1/116. This indicates the presence of H_0 was accepted, so it can be concluded that the data did not support the hypothesis proposed. This shows that achievement does not increase entrepreneurial tendencies in students at Esa Unggul University in Jakarta. The results of hypothesis 2 moderation found the results of the values to be tested to see differences in the average entrepreneurial inclusion gap (Y)

formed by high achievement (ACH) (ACH = 1), low achievement (IN = 2) both in young respondents (U = 1) and the respondents of old age (U = 2) after calculating the same influence of linear innovativeness (X) on entrepreneurial inclination (Y) in all cells.

The results of the analysis supported hypothesis H2a that specifically for the respondent group with the old age level, the high achievement group of respondents had a greater entrepreneurial tendency compared to the low achievement respondents group (β_1) with sig. values 0.404 (> 0.05). On the results of hypothesis 2b testing, found the results of the analysis did not support the hypothesis, that was specifically for groups with high achievement respondents, groups of respondents with a young age had a greater tendency to entrepreneurship than old age (β_2) with sig. values 0.489 (> 0.05). In the results of the hypothesis 2c test, found the results did not support the hypothesis that specifically for the low achievement group of respondents, the group of respondents with a young age level, had a greater tendency to entrepreneurship compared to the elderly (β_3) with sig. values 0,572 ($>0,05$).

Table 3 – Test of Between-Subject Effects Achievement

Dependent Variable: *EI*.

Source	df	F	Sig
Corrected Model	3	0,668	0,573
Intercept	1	8474,101	0,000
ACHMEDIAN	1	1,299	0,257
ACHMEDIAN*USIA	2	0,401	0,670
Error	116		
Total	120		
Corrected Total	119		

Source: Test results on data analysis tools.

Locus of Control Increases Entrepreneurial Tendency Moderated by Age Demography. In this study, as can be seen in Table 4 where hypothesis H3 was tested using the statistical F test on the line "locus of control and entrepreneurial tendencies" wherein $F_0 = 37,291$ (Sig. 0,000) with a free degree of 1/116. This indicates the existence of H_0 was rejected, so it can be concluded that the data supported the proposed hypothesis. This shows that locus of control increases the tendency of entrepreneurship in students at Esa Unggul University Jakarta. The results of hypothesis 3 moderation found the results of the values to be tested to see differences in the average entrepreneurial inclination gap (Y) formed by high locus of control (LC) (LC = 1), low locus of control (LC2 = 2) both at young respondents (U = 1) and old age respondents (U = 2) after calculating the same linear locus of control (X) influence on entrepreneurial inclination (Y) in all cells.

Table 4 – Test of Between-Subject Effects Locus of Control

Dependent Variable: *EI*.

Source	df	F	Sig
Corrected Model	3	12.746	0.000
Intercept	1	11140.976	0.000
LCMEDIAN	1	37.291	0.000
LCMEDIAN*USIA	2	0.693	0.502
Error	116		
Total	120		
Corrected Total	119		

Source: Test results on data analysis tools.

The results of the analysis supported hypothesis H3a that was specifically for the group of respondents with the level of old age, the group of respondents with high locus of control had a greater tendency to entrepreneurship than the group of respondents who had a low locus of control (β_1) with sig. values. 0,000 ($<0,05$). In the results of hypothesis 2b testing,

the results of the analysis found that it did not support the hypothesis, specifically for the group of respondents with high locus of control. Respondents with a young age group had a greater entrepreneurial tendency than old age (β_2) with sig. values 0.473 (> 0.05). In the results of hypothesis 2c test, found the results did not support the hypothesis that specifically for the group of respondents with low locus of control, the group of respondents with a young age level, had a tendency towards entrepreneurship greater than the elderly (β_3) with sig. 0.353 ($>0,05$).

Risk Taking Increases Entrepreneurially Tendency Moderated by Age Demography. In this study, as can be seen in Table 5 where hypothesis H4 was tested using statistical F test on the line "risk taking and entrepreneurial tendency" where $F_0 = 46.798$ (Sig. 0,000) with a free degree of 1/116. This indicates the existence of H_0 was rejected, so it can be concluded that the data supported the proposed hypothesis. This shows that risk taking increased the tendency of entrepreneurship for students at Esa Unggul University Jakarta. The results of hypothesis 4 moderation found the results of the values to be tested to see the difference in the average entrepreneurial inclination (Y) gap that was formed by high risk taking (RT) (RT = 1), low risk taking (RT = 2) both for the age respondents young (U = 1) and old age respondents (U = 2) after calculating the same linear risk taking (X) influence on entrepreneurial inclination (Y) in all cells.

The results of the analysis supported hypothesis H4a namely specifically for the respondent group with the level of old age, the high risk taking group of respondents had a greater entrepreneurial tendency compared to the group of respondents who had low risk taking (β_1) with sig. values 0,000 (<0.05). In the results of hypothesis 4b testing, the results of the analysis did not support the hypothesis namely specifically for the high risk taking group of respondents, the respondents with a young age group had a greater entrepreneurial tendency than old age (β_2) with sig. values 0.780 (> 0.05). In the results of hypothesis 4c test, the results found did not support the hypothesis namely specifically for the group of respondents with low risk taking, the group of respondents with a young age level had a tendency to entrepreneurship was greater than the elderly us (β_3) with a sig. value 0,595 (> 0.05).

Table 5 – Test of Between-Subject Effects Risk Taking

Dependent Variable: EI.

Source	df	F	Sig
Corrected Model	3	16.025	0.000
Intercept	1	11883.959	0.000
RTMEDIAN	1	46.798	0.000
RTMEDIAN*USIA	2	0.181	0.834
Error	116		
Total	120		
Corrected Total	119		

Source: Test results on data analysis tools.

Tolerance for Ambiguity Increases Entrepreneurially Tendency Moderated by Age Demography. In this study, as can be seen in Table 6 where the hypothesis H5 was tested by using statistical F test on the line "tolerance for ambiguity and entrepreneurial tendencies" where $F_0 = 74.767$ (Sig. 0,000) with a free degree of 1/116. This indicates the existence of H_0 was rejected, so it can be concluded that the data supported the proposed hypothesis. This shows the tolerance for ambiguity increases the tendency of entrepreneurship in students at University of Esa Unggul Jakarta. The results of hypothesis 5 moderation found the results of the values tested to see the difference in entrepreneurial inclination (Y) mean gap which was formed by high tolerance for ambiguity (TA) (TA = 1), tolerance for low ambiguity (TA = 2) both on young respondents (U = 1) and old age respondents (U = 2) after calculating the same influence of linear tolerance for ambiguity (X) on entrepreneurial inclination (Y) in all cells.

Table 7 – Test of Between-Subject Effects Self Confidence

Dependent Variable: *EI*.

Source	df	F	Sig.
Corrected Model	3	19.754	0.000
Intercept	1	12826.094	0.000
SCMEDIAN	1	56.551	0.000
SCMEDIAN*USIA	2	1.130	0.326
Error	116		
Total	120		
Corrected Total	119		

Source: Test results on data analysis tools.

Table 8 – Research Model Hypothesis Testing

Hypothesis	Statement of Hypothesis	Sig. Value	Note
Innovativeness			
H1	Innovativeness increases the tendency of entrepreneurial in students.	0,000	Data supports hypothesis
H1 Moderated	Innovation increases the tendency of entrepreneurial moderated by age demography in students.	0,333	Data does not support hypothesis
Achievement			
H2	Achievement increases the tendency of entrepreneurial in students.	0,257	Data does not support hypothesis
H2 Moderasi	Achievement increases the tendency of entrepreneurship moderated by age demography in students.	0,670	Data does not support the hypothesis
Locus of control			
H3	Locus of control increases the tendency of entrepreneurial in students.	0,000	Data supports hypothesis
H3 Moderasi	Locus of control increases the tendency of entrepreneurial moderated by age demographics in students.	0,502	Data does not support hypothesis
Risk taking			
H4	Risk taking increases the tendency of entrepreneurial in students.	0,000	Data supports hypothesis
H4 Moderated	Risk taking increases the tendency of entrepreneurial moderated by age demographics in students.	0,834	Data does not support hypothesis
Tolerance for ambiguity			
H5	Tolerance for ambiguity increases the tendency of entrepreneurial in students.	0,000	Data supports hypothesis
H5 Moderated	Tolerance for ambiguity increases the tendency of entrepreneurial moderated by age demography in students.	0,134	Data does not support hypothesis
Risk taking			
H4	Risk taking increases the tendency of entrepreneurial in students.	0,000	Data supports hypothesis
H4 Moderated	Risk taking increases the tendency of entrepreneurial moderated by age demographics in students.	0,834	Data does not support hypothesis
Tolerance for ambiguity			
H5	Tolerance for ambiguity increases the tendency of entrepreneurial in students.	0,000	Data supports hypothesis
H5 Moderated	Tolerance for ambiguity increases the tendency of entrepreneurial moderated by age demography in students.	0,134	Data does not support hypothesis
Self Confidence			
H6	Self confidence increases the tendency of entrepreneurial in students.	0,000	Data supports hypothesis
H6 Moderated	Self confidence increases the tendency of entrepreneurial moderated by age demography in students.	0,326	Data does not support hypothesis

The results of the analysis supported hypothesis H5a which is specifically for the group of respondents with the level of old age, the group of respondents with tolerance for high ambiguity had a greater entrepreneurial tendency than the group of respondents who had tolerance for low ambiguity (β_1) with sig. values 0,000 (<0.05). In the results of hypothesis 5b testing, found the results of the analysis did not support the hypothesis that was specifically

for the group of respondents with tolerance for high ambiguity, the group of respondents with a young age had a tendency to entrepreneurship greater than old age (β_2) with sig. values 0.052 (> 0.05). In the results of hypothesis 5c test, found the results did not support the hypothesis that specifically for the group of respondents with tolerance for low ambiguity, the group of respondents with a young age level, had a tendency to entrepreneurship greater than the old age (β_3) with sig. value 0.644 (> 0.05).

Self confidence Increases Entrepreneurially Tendency Moderated by Age Demography. In this study, as can be seen in Table 7 where the hypothesis H6 was tested by using statistical F test on the line "self confidence and entrepreneurial tendencies" where $F_0 = 56.551$ (Sig. 0,000) with a free degree of 1/116. This indicates the existence of H_0 was rejected, so it can be concluded that the data supported the proposed hypothesis. This shows that self confidence increases the tendency of entrepreneurship in students at Esa Unggul University, Jakarta. The results of hypothesis 6 moderated found the results of the values to be tested to see differences in the average entrepreneurial inclination (Y) gap that was formed by high self confidence (SC) (SC = 1), low self confidence (SC = 2) both in the age of young respondents (U = 1) and old age respondents (U = 2) after calculating the same influence of linear self confidence (X) on entrepreneurial inclination (Y) in all cells.

The results of the analysis supported hypothesis H6a namely specifically for the group of respondents with the level of old age, the group of respondents with high self-confidence had a tendency to entrepreneurship greater than the group of respondents with low self-confidence (β_1) with sig. values 0,000 (<0.05). In the results of hypothesis testing 5b, the results of the analysis did not support the hypothesis that specifically for the group of high self-confidence respondents, the group of respondents with a young age had a greater entrepreneurial tendency than old age (β_2) with sig. values 0.714 (> 0.05). In the results of the hypothesis 5c test, found that the results did not support the hypothesis that specifically for the group of respondents with low self-confidence, the group of respondents with a young age level, had a tendency towards entrepreneurship greater than the elderly (β_3) with sig. values 0,148 ($>0,05$).

DISCUSSION OF RESULTS

Analysis of Innovativeness Increases the Tendency of Entrepreneurial Moderated by Age Demography. In the test results, it showed innovativeness increased the tendency of entrepreneurship in students at Esa Unggul University Jakarta. Innovativeness increases entrepreneurial tendencies but not moderated by the age demography of students at Esa Unggul University Jakarta. Especially for the respondent group with the level of old age, the group with high innovation respondents had a greater tendency to entrepreneurship compared to the group of respondents who had low innovation. Namely specifically for the respondent group with high innovative, the group of respondents with a young age does not have a tendency to entrepreneurship that is greater than old age. The respondent group with low innovation, the group of respondent with a young age, did not have a tendency to entrepreneurship greater than the old age. Age demography is a life span measured by years, the level of maturity of a person in living life thus age is a benchmark in one's maturity in determining attitudes in entrepreneurship, although age cannot be used as someone to say successful or unsuccessful in entrepreneurship. Furthermore, the results of this study are in line with the research of Zaman (2013); Edirisinghe and Nimeshi, et al. (2016); Ibrahim and Saili (2017) concluded that there is a tendency of students to do entrepreneurship determined by innovativeness. And also researcher Yusof, et al. (2008); Kume, et al. (2013) concluded that young students are more likely to be entrepreneurs.

Analysis of Achievement Does Not Increase the Tendency of Entrepreneurial Moderated by Age Demography. The results of the study showed that achievement did not increase the tendency of entrepreneurship in students at Esa Unggul University Jakarta. Achievement did not increase the tendency of entrepreneurship moderated by age demography in students at Esa Unggul University Jakarta. Especially for the respondent group with the level of old age, the high achievement group of respondents did not have a

greater entrepreneurial tendency compared to the low achievement group of respondents. For group with high achievement respondents, group of respondents with a young age did not have an entrepreneurial tendency greater than old age. Low achievement group of respondents, group of respondents with a young age, did not have a greater entrepreneurial tendency compared to old age. The age demographic level on the results of this hypothesis showed that old age or mature was not a guarantee that students would be capable of things and brave to make decisions on entrepreneurship, because what is needed to be brave in making these decisions is a high achievement level, although the demographic level is younger. This research is not in line with Zaman (2013) and Kume, et al. (2013) which concluded that need for achievement influenced entrepreneurial tendencies.

Analysis of Locus of Control Increases the Tendency of Entrepreneurial Moderated by Age. In the test results showed locus of control increased the tendency of entrepreneurship in students at Esa Unggul University Jakarta. Locus of control did not increase the tendency of entrepreneurship moderated by age demography in students at Esa Unggul University Jakarta. Especially for the respondent group with the level of old age, the group of respondent with high locus of control had a greater tendency to entrepreneurship compared to the group of respondents who had a low locus of control. Especially for group of respondent with high locus of control, the respondent group with a young age did not have an entrepreneurial tendency greater than old age. For group of respondent with low locus of control, the respondent group with a young age level did not have a greater entrepreneurial tendency compared to old age. Young age courage in taking a business decision is sometimes not owned by students with maturity or old age. Older age is more consideration in making a decision. This study is in line with Kume, et al. (2013); Edirisinghe and Nimeshi (2016) which concluded that locus of control influences students' tendency to entrepreneurship.

Analysis of Risk Taking Increases the Tendency of Entrepreneurship Moderated by Age Demography. The test results showed that risk taking increased the tendency of entrepreneurship in students at Esa Unggul University Jakarta. Risk taking increased the tendency of entrepreneurship but was not moderated by the age demographics of students at Esa Unggul University Jakarta. Especially for the respondent group with the level of old age, the high risk taking respondents group had a greater entrepreneurial tendency compared to the group of respondents who had low risk taking. That is specifically for high risk taking groups of respondents, the group of respondents with a young age did not have an entrepreneurial tendency greater than old age. Respondent group with low risk taking, group of respondents with a young age level, did not have a greater entrepreneurial tendency compared to old age. Demographics of old age are directly proportional to high risk taking because, in this phase of old age it is usually in the decision making whether the decision is risky or not, the person is ready for the consequences that will occur. Therefore, in doing business and entrepreneurship someone's maturity is needed both age and understanding of risk taking. This is in line with Zaman (2013) which showed that risk taking is one indicator of students' tendency to entrepreneurship, and Edirisinghe and Nimeshi (2016), with the results of this study concluding that risk taking propensity influences entrepreneurial tendencies in students.

Analysis of Tolerance for Ambiguity Increases Tolerance for Ambiguity Increases the Tendency of Entrepreneurial Moderated by Age Demography. On the test results showed that tolerance for ambiguity increases the tendency of entrepreneurship in students at Esa Unggul University Jakarta. Tolerance for ambiguity increases the tendency of entrepreneurship but is not moderated by age demographics in students at Esa Unggul University Jakarta.

Especially for group of respondents with old age levels, group of respondents with tolerance for high ambiguity had greater entrepreneurial tendencies compared to the group of respondents with tolerance for low ambiguity. That is specifically for the respondent group with tolerance for high ambiguity, the group of respondents with a young age level had a greater tendency to entrepreneurship than old age. For groups of respondents with tolerance for low ambiguity, groups of respondents with a young age level had a greater tendency to

entrepreneurship compared to old age. Among UEU students, students with a tolerance for high ambiguity were proportionally straight with the old age demographics to try to do business and entrepreneurship due to the analysis of the possibilities of risk that is quite large, therefore it requires sufficient mindset and age maturity, so with this fact that old age and tolerance for high ambiguity among students is wide open to entrepreneurship compared to groups of students with tolerance for low ambiguity. This is not in line with the research by Zaman (2013) who stated tolerance for ambiguity influenced entrepreneurial tendencies in students.

Analysis of Self Confidence Increases the tendency of entrepreneurial moderated by age demography. On the test results showed self confidence increased the tendency of entrepreneurship in students at Esa Unggul University Jakarta. Self confidence increased the tendency of entrepreneurship but not moderated by age demographics in students at Esa Unggul University Jakarta. Especially for the respondent group with the level of old age, the group of respondents with high self-confidence had a tendency to entrepreneurship that was greater than the group of respondents who had low self-confidence. Namely specifically for the respondent group with high self confidence, the respondent group with a young age did not have an entrepreneurial tendency greater than old age. Hypothesis for the group of respondents with low self-confidence, the respondent group with a young age level did not have a greater entrepreneurial tendency compared to old age. Entrepreneurship can be done by anyone, especially someone who has high confidence in the business, but with a low level of confidence one can still conduct entrepreneurship if supported by a young age demographic level, because at a young age many opportunities can be achieved in the future ahead, therefore confidence in the cycle of time would grow one's confidence. This is in line with the researchers Edirisinghe and Nimeshi (2016), the results of the study concluded that self-confidence influences the entrepreneurial tendency of students.

CONCLUSION

The results that can be concluded from this study, first innovativeness can increase the tendency of entrepreneurial in students at UEU. The second conclusion from the results of this study is that achievement does not increase the tendency of entrepreneurial students at UEU, in relation to entrepreneurial students tend to be unsuccessful in achieving the highest because at the age level students will tend to be complacent even though the results have not been maximized. The third conclusion from the results of this study locus of control may increase the tendency of entrepreneurship in students at UEU Jakarta. The fourth conclusion from the results of this study is risk taking increases the tendency of entrepreneurship in students at UEU Jakarta. The courage of students in doing business or entrepreneurship certainly has taken into account the advantages and disadvantages, the courage in making decisions even though the decision is risky.

Furthermore, the conclusion of the five tolerances for ambiguity increases the tendency of entrepreneurship in students at UEU Jakarta. Uncertain circumstances will actually increase the tendency of entrepreneurship, because there are other things that are unpredictable that cause our entrepreneurship to be successful, with this uncertain situation we are required to manage it so that we can make it as new information, with the circumstances which is uncertain, we are required to be creative to plan other possible plans. The sixth conclusion from the results of this study, self confidence increases the tendency of entrepreneurship in students at UEU Jakarta. Self confidence is in the first position of the character that must be possessed by entrepreneur; self confidence is an attitude of confidence in one's own ability towards achievement and hope.

Limitations of this study can be considered for further research. This study used questionnaire as a measuring tool because of the need to save time and energy. However, the questionnaire has limitations such as bias in filling out questions. There is a possibility that the respondents did not answer the questionnaire in real terms or only filled out questionnaire answers based on the ideal conditions expected and not the actual conditions happening. This may influence the measurement used does not describe the variables

significantly. In addition, the limited number of samples and variables may also influence the characteristics of entrepreneurship on the tendency of entrepreneurship moderated by demography of age.

This research is still very limited because it only examined the characteristics of entrepreneurship towards entrepreneurial desires moderated by age demography, thus to develop research, it is suggested that future research add other variables that can influence entrepreneurial characteristics such as financial, capital or marketing variables. Subsequent research is also expected to be carried out on other research objects such as the public, for example, youth organizations, community social associations, who desired to improve the level of welfare of each individual.

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**TESTING THE EFFECTS OF HEALTHCARE ALLOWANCE COMPENSATION
ON NURSING PROFESSION AND JOB SATISFACTION ON WORK PERFORMANCE
THROUGH ORGANIZATIONAL COMMITMENT: A STUDY ON NURSING PROFESSION
AT TYPE-A HOSPITALS IN JAKARTA AREA**

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ABSTRACT

In healthcare system as in hospitals, nurses play integral role to provide all healthcare services in a hospital at its optimum. The nurses' twenty-four hours availability of services in hospitals has made them the most common healthcare persons. Nurses' work performance is nurses' activity in implementing command, tasks, and responsibilities at its best in order to achieve and manifest their professional goals and the organizational unit goals. The purpose of the study is to identify the effects of healthcare allowance compensation received by the nurses and the nurses' job satisfaction on their own work performance through organizational commitment as the mediating variable. The study applies questionnaire as the instrument to collect data and process the data by applying Structural Equation Model (SEM) to conduct empirical test on model of the study, which is respondents who work as nurses in type-A hospitals in Jakarta area. The results of the study indicate that the healthcare allowance compensation affects the organizational commitment; the job satisfaction affects the organizational commitment; the healthcare allowance compensation does not affect the nurses' work performance; the job satisfaction affects the nurses' work performance; the organizational commitment affects the nurses' work performance; and the organizational commitment mediates the correlation of the healthcare allowance compensation and job satisfaction on the nurses' work performance.

KEY WORDS

Healthcare allowance compensation, job satisfaction, work performance, organizational commitment, nurse.

Nurses, as part of healthcare system in every hospital, play integral role in order to provide healthcare services at its optimum. It is related to the nurses' twenty-four hours availability of services in hospitals has made them the most common healthcare persons with the percentage of 40 to 60 percent (Swansburg, 2000). There are fundamental factors that affect the nurses' work performance; one of them is the healthcare allowance compensation. It is fundamental because it affects the nurses' behavior as the employees of hospitals to do their best at work and it can excel their work performance. The charge nurses' work performance is the main factor in achieving the optimal service in hospitals. Nurses' work performance is nurses' activity in implementing command, tasks, and responsibilities at its best in order to achieve and manifest their professional goals and the organizational unit goals. A fair and reasonable compensation affects the level of a nurse's organizational commitment on one's job. The compensation that is investigated and analyzed in the current study is the healthcare allowance compensation. The researchers focus on the measurement of the effects of the healthcare allowance compensation, which is under the Indonesia laws and regulations (legally required benefit), namely the employees' participation in BPJS Kesehatan program (Indonesia's national healthcare allowance).

There are five factors that can be applied to improve a nurse's work performance like job promotion, job evaluation, working environment and supporting facilities, motivation and compensation, and opening the chance to continue the education to the next level (Fort dan Voltero, 2004). Job satisfaction on a nurse is an essential concept within the general job satisfaction level, even though some previous studies point out that every job satisfaction has

similarities based on several indicators like physical condition during work, the relation between nurses, salary, work insurance e.g. healthcare allowance, job promotion, and responsibility.

A study conducted by Gunlu et al. (2009) finds out that the job satisfaction affects the organizational commitment. Next, Anari et al. (2011) point out that the job satisfaction has positive effect on the organizational commitment. Furthermore, a study conducted by Nawab et al. (2011) underlines that the healthcare allowance compensation has positive effect on the level of the employees' organizational commitment. In addition, Obasan (2012) shows that the healthcare allowance compensation has positive effect on the employees' work performance. Khan et al. (2012) point out that the job satisfaction has positive effect on the employees' work performance. Then, a study conducted by Khan et al. (2016) underlines that the organizational commitment has positive effect on the improvement of the employees' work performance. Funmilola et al. (2013) show that the job satisfaction has positive effect on the employees' work performance. Additionally, Muhammad et al. (2016) find out that the organizational commitment has positive effect on the employees' work performance.

The current study might open some ideas in both academic and practical aspects. In academic aspect, the current study covers some impressions on the development in management studies. For examples, the policy implementation and an organization plan on the healthcare allowance compensation, the job satisfaction that in relation to the organizational commitment, the nurses' work performance, and the reference for further studies in management or other fields of study. Furthermore, in practical aspect, the current study might offer alternative solution of any problems faced by an organization, specifically private hospitals. The solution is expected to be effective if the problems are related to the healthcare allowance compensation and the job satisfaction that in relation to the nurses' organizational commitment and its effect on the nurses' work performance at the hospitals.

LITERATURE REVIEW

In general, literatures of related studies point out there are three types of compensation, i.e. direct compensation, indirect compensation, and incentive (Sinambela, 2016). Direct compensation is defined as a reward in a scheme of salary or fee, which is paid regularly based on a period of time that has been set by the organization. Indirect compensation is a plan to share profits or benefits to workers apart from fixed salary or fee, in a scheme of money or properties. Furthermore, incentive is a reward shared to the workers to motivate them so they are encouraged to raise their productivity. Incentive characteristic is not fixed, of which it is unexpectedly. Ruby (2012) defines indirect compensation as an indirect financial and/or non-financial payment received by the employees as long as they keep working for a company. The other words for indirect compensation are fringe benefits, employee services, supplementary compensation and supplementary pay. Ruby also states that indirect compensation or employee benefit is a part of remuneration elements shared to the employees as additional expenses of any payment by cash. In addition, Ruby (2012) underlines that there are many organizations offer some prevalent types of indirect compensation. First, social security that aims to provide financial security to the employees as they enter their retirement. Both the employers and employees play role in the social security payment by paying it based on the percentage that has been set by the government. Second, the disability insurance that aims to protect the employees from losing their income and accidents that happened to them or the illness that may disrupt their working activities.

Satisfaction is inseparable from an individual's attitude on someone or something. Many researchers state that an individual might have thousands of attitudes. In relation to the organizational behavior, the researchers divide it into three attitudes: job satisfaction, job involvement, and organizational commitment. Khuong and Tien (2013) define job satisfaction as a positive emotional statement as a result of an employee's job evaluation or job experience. A study conducted by Pandey (2012) defines job satisfaction as a positive attitude that occurs within an employee's self in relation to the job or job situation.

Furthermore, Robbins (2006) determines job satisfaction as a positive feeling on one's job based on its characteristic evaluation. Whereas Glinow and Mcshane (2008) underline that the job satisfaction manifests in the nurses' evaluation on their job and job contexts, which becomes the popular subject of research interests. Job satisfaction is an evaluation about the perception on the job characteristic, working environment, and emotional experience in the workplace. In relation to the current study, job satisfaction is the nurses' attitude on several aspects and contexts of the job.

Organizational commitment is essential factor of the success of organizational success. When employees are fully committed to the organization, they will be loyal to the organization and contribute their best at work. In relation to the current study, the nurses' loyalty is implemented in their willingness to perform their best at work and to keep themselves as a part of the organization. The concept of organizational commitment is related to the degree to which an individual's involvement in the organization one works for and still fully committed to stay in the organization. Sopiah (2008) also states another view on organizational commitment, of which a characteristic of commitment is not only passive loyalty, but also involve active interaction with the organization as a means to support the organization to achieve success.

Organizational commitment is a psychological relation between the employees and the organization they work for, which is implemented by accepting and doing any given tasks, and it encourages the employees strongly to stay in the organization (Anindita and Seda, 2017). Based on abovementioned definitions, organizational commitment can be defined as an event in which the employees' loyalty is demonstrated by keep working for the organization and exert their utmost effort to achieve the goals and values of the organization. In other words, organizational commitment is viewed as an attitude that depicts workers loyalty and their devotion to the continuity, success, and prosperity of the organization. Based on aforementioned point of views on the organizational commitment, it can be described as an employee's ability to identify oneself with the values, the rules, and the goal of the organization that covers loyalty and the involvement in any kind of job-related activities.

Work performance is a very essential aspect that needs special attention from the management, either in a small or large company. Any results achieved by an organization or employees are the reflection of the responsibility to the organization and public. Work performance cannot be functioned solely in contributing to the success of the company as it is always related to the employees' job satisfaction and the level of given rewards. Furthermore, it is supported by skills, abilities, and the personality traits of each individuals.

Sedarmayanti (2011) states that the work performance is defined as the work result done by an employee. For instance, a process in a management or the organization as a whole in which its result is tangible and measurable, when it is compared to the standard that has been set. If a work performance does not present, then the all units in an organization will far from achieving their goals.

Robbins (2006) states that other term of work performance is human output, of which it is measured from the productivity, absenteeism, turnover, citizenship, and satisfaction. Furthermore, Baron and Greenberg (1990) point out that work performance in an individual is also termed as job performance, work outcomes, and task performance. In addition, work performance can be viewed as a goal achievement of an organization, which is implemented in either quantitative or qualitative output, creativity, flexibility, trustworthy, and other outputs that are expected by the organization.

Work performance is applicable for both short term and long term period of time. It is also implemented within an individual, a group, or an organization. Work performance management is a process designed to create synchronization between the goal of the organization and the goal of the individual, so they are on the same page. In addition, work performance is also viewed as an action or accomplished assignment in a specific period of time, which is measurable.

There are four elements in work performance, i.e. results of the work function, factors that affect an employee's achievement, the goal achievement of the organization, and a specific period of time.

Mutual concession or give-and-take from the management regarding the tasks fulfilled by the nurses should be considered important in the first place, as it keeps the nurses' high commitment to the job. Every employee or every nurse in a hospital has a desire to receive compensation that meets each individual's ideal requirement. If their expectation fulfilled, it will encourage them to have high commitment at work. If the received healthcare allowance is worthy, the employees are satisfied and driven to achieve the vision and mission of the organization. Simamora (2004) states that a good compensation is a compensation share system that is responsive to a situation and able to motivate employees. Therefore, the available compensation system is expected to meet employees' desire to ensure their rights in receiving compensation are fairly shared. In addition, rewards are also set as it reflects their effort in doing their job for the organization. Hence, the fair and worthy compensation will motivate the nurses to do their best effort at work. Moreover, the employees perceive the appreciation for their best determination at work from the organization, as the result of fair and worthy shared compensation. The appreciation will generate high commitment within the nurses in doing their best at work. Any jobs executed with high commitment will result in great achievement as it resonates with the goals of the hospital management. Several researchers elicit that the healthcare allowance compensation can increase the organizational commitment of the nurses or the employees when they do their job. Nawab et al. (2011) point out that the indirect compensation has positive correlation on the organizational commitment. The more deserving the given indirect compensation, the more the nurses increase their organizational commitment. The other study conducted by Ahmad et al. (2016) also underlines that the indirect compensation is a vital factor that has impact on the increase of the organizational commitment.

Based on the previous explanations and the empirical evidence in the abovementioned studies, researchers propose a statement that is formulated in the following hypothesis:

H₁: A worthy shared healthcare allowance compensation can increase the organizational commitment

The job satisfaction and the organizational commitment are related, but both principles are different attitudes. For instance, there is a brief period of time when a nurse may feel discouraged in doing one's task, but still fully committed to the organization. In previous studies, the researchers point out that the high job satisfaction can increase the nurses or the employees' organizational commitment in an organization. Wang et al. (2012) underline that the high job satisfaction can increase the nurses' commitment on the organization. A study conducted by Anari (2011) also highlights that the high job satisfaction supported by several parameters such as salary, supervision, working environment, and the job itself can affect the increase of the organizational commitment of the employees. Nahas et al. (2012) find out that the job satisfaction has positive effect on the organizational commitment. The higher the job satisfaction the more the employees or the nurses motivate themselves to strengthen their commitment to the organization. A study conducted by Gunlu (2009) also highlights that the high job satisfaction affects the organizational commitment.

Based on the previous explanations and the empirical evidence in the abovementioned studies, researchers propose a statement that is formulated in the following hypothesis:

H₂: The high job satisfaction can increase the nurses' organizational commitment.

A nurse is motivated to undertake any given task as the individual expects the worthy reward. The expectation for bonuses, salary increase, promotion, and appreciation are the examples of financial and non-financial compensations. It indicates that these aspects of the compensations affect to the degree to which an individual is fully committed to one's job. However, the current study finds out that the healthcare allowance compensation does not affect the work performance. The result of the current study is in contrast to the previous studies. A study conducted by Syahreza et al. (2017) highlight that the indirect compensation affects the improvement of the employees' work performance. Okwudili et al. (2017) also

states that either a direct compensation or indirect compensation affects the improvement of the employees' performance respectively or in unison. In addition, Obasan (2012) finds out that there is positive correlation between the indirect compensations on the work performance.

Based on the previous explanations and the empirical evidence in the abovementioned studies, researchers propose a statement that is formulated in the following hypothesis:

H₃: The shared healthcare allowance does not affect the nurses' work performance.

In general, an evaluation on the job satisfaction in an organization is a manifestation of the accumulation of employees' feelings or attitudes on their job. The employees' feelings and attitudes are related to the working environment, type of job, compensation, the relation between coworkers, social relation at workplace, and so on. Accordingly, it is underlined that the job satisfaction is a condition in which the employees' desires and needs related to their job are fulfilled.

A nurse who is satisfied with one's own job, the working environment, and the worthy compensation will be highly motivated in doing one's job. High motivation will encourage an employee in increasing one's target in doing their job, so it can raise the employee's work performance as a whole. Previous studies highlight that the employees' job satisfaction encourages optimal work performance. A study conducted by Nanda and Brown (1977) underlines that the job satisfaction level and motivation will affect the employees' productivity. Furthermore, the low job satisfaction level has negative effect on the employees' commitment, the achievement of the goal of the organization, and the employees' work performance (Meyer, 1999). In addition, Gunawan et al. (2018) find out that the high job satisfaction has positive effect on the lecturers' work performance in the Sekolah Tinggi Ilmu Pelayaran (Cruise Ship Academy) – Jakarta. Barasa et al. (2018) also state that the high job satisfaction has positive effect on the improvement of the employees' work performance who work in a port in Jakarta area. Additionally, Funmilola et al. (2013) highlights that the job satisfaction has positive effect on the employees' work performance. An employee who is satisfied with one's own job will do one's utmost effort to the achievement of the vision and mission of an organization.

Based on the previous explanations and the empirical evidence in the abovementioned studies, researchers propose a statement that is formulated in the following hypothesis:

H₄: High job satisfaction will increase the nurses' work performance.

An employee or a nurse who has commitment to the organization has exceptional behavior from the other employees who have low commitment to the organization. The commitment that grows within the employee self has positive effect on the organization, such as the employees' great work performance. By having high commitment, a nurse has the sense of belongings in relation to the organization he/she works for, and it is implemented by the individual's voluntary involvement in any activities held by the organization.

An employee who has high commitment to the organization will put the vision and mission of the organization as first priority instead of one's own interests and ambition. Eventually, having high commitment to the organization will generate positive behaviors, like keeping the corporate reputation, loyalty to the leaders, being cooperative and positive towards coworkers, and have a good intention to solve any problems through discussion board. These constructive conditions will be very useful in improving the nurses' work performance. A good work performance will also improve the work performance of the organization. In relation to the subject of the current study, the vision and mission of the organization can be achieved if the nurses have excellent work performance.

The previous studies have shown that the high organizational commitment has positive effect on the employees or nurses' work performance. A study conducted by Nikpour (2017) highlights that the high organizational commitment is able to improve the employees' work performance. In addition, Sawitri *et al.* (2016) points out that the high organizational commitment has positive effect on the nurses' work performance. Furthermore, Khan *et al.* (2016) finds out that the high organizational commitment affects the improvement of the work performance.

Based on the previous explanations and the empirical evidence in the abovementioned studies, researchers propose a statement that is formulated in the following hypothesis:

H₅: The high organizational commitment can increase the nurses' work performance.

RESULTS AND DISCUSSION

The current study applied Structural Equation Model (SEM) analysis method to investigate the gap and the correlation between variables. In order to apply the SEM, the compatibility of the whole model should be approached (Goodness of Fit). Therefore, based on the analysis, it was found that all results are fit.

Based on the data processing the obtained Chi Square value is 198.54. The smaller the value, the more appropriate the model between the theory model and sample data (Dividing the Chi Square value by the Degree of Freedom value). The ideal value is < 3 , it indicates good fit. Based on the divisor result, the obtained value is 1.65. It indicates the good fit outcome because the value is < 3 . RMSEA value = 0.060, then the appropriateness is adequate for good fit (RMSEA value is < 0.05 , it indicates close fit, RMSEA value is < 0.08 indicates good fit, RMSEA value is < 0.10 indicates marginal fit, and RMSEA value is > 0.10 indicates poor-fit). ECVI model (with the value equals to 1.64) is compared to ECVI saturated model (with the value equals to 1.86) and ECVI independence model (with the value equals to 38.29). ECVI model is little smaller from ECVI saturated model, and the disparity is bigger than ECVI independence model. In other words, ECVI saturated model is closer to ECVI model than ECVI independence model. In addition, the 90 % confidence interval is 1.45 : 1.87, then it indicates good fit (it exists among ECVI model). AIC model (with the value equals to 301.82) is compared to AIC saturated model (with the value equals to 342.00) and AIC independence model (with the value equals to 7045.58).

AIC model is smaller than AIC saturated model, and the disparity is bigger than AIC independence model. Accordingly, the smaller value indicates good fit. CAIC model (with the value equals to 517.05) is far from CAIC saturated model (with the value equals to 1063.68) and even farther from CAIC independence model (with the value equals to 7121.55). Hence, the smaller value indicates good fit. Normed Fit Index (NFI) value = 0.97. It is above 0.90, meaning that it indicates good fit. CFI value = 0.99. It is above 0.90, then it indicates good fit. Tucker-Lewis Index or Non Normed Fit Index (NNFI) value = 0.99. It is above 0.90, then it indicates good fit. Incremental Fit Index (IFI) value = 0.99. It is above 0.90, it indicates good fit. Relative Fit Index (RFI) value = 0.96. It is above 0.90, it indicates good fit. Parsimonius Normed Fit Index (PNFI) value = 0.76. It is above 0.6, so it is applied to analyze the model comparison and it indicates good fit. Critical N (CN) value = 148.31. It is < 200 , so it does not represent the sample data measurement or marginal fit. If the value is > 200 , then the model represents the data measurement or good fit). Root Mean Square Residual (RMR) is a residual average resulting from the fitting between the variance-covariance matrix from the model and dengan the variance-covariance matrix from the sampel data. Standardized RMR value = 0.065 shows marginal fit. It is below 0.05, then it indicates good fit). Goodness of Fit Index (GFI) value = 0.89 indicates marginal fit. It is above 0.90, then it indicates good fit. Adjusted Goodness of Fit Index (AGFI) value = 0.85, it indicates good fit because the value is above 0.90. Parsimony Goodness of Fit Index (PGFI) value = 0.63 shows good fit. It is above 0.6, and it is applied to analyze the model comparison.

Based on the result of the first hypothesis (H₁) test, it was found that the result supports the first hypothesis (H₁), which is the healthcare allowance compensation affects the organizational commitment of the nurses who work for two type-A hospitals in Jakarta area. The nurses who receive the compensation will have sense of security at work and emotional ties with the organization. The aforementioned result is also support the study conducted by Nawab et al. (2011) who underline that the indirect compensation has positive correlation with the organizational commitment.

Based on the result of the second hypothesis (H₂) test, it was found that the result supports the hypothesis with t-value equals to 4.70. It shows that the satisfaction affects the organizational commitment. The high commitment will motivate the nurses to commit

themselves at work for the achievement of the goals of the organization and to stay in the organization for a long-term employment. Based on previous studies, several researchers have pointed out that the high job satisfaction can increase the nurses or employees' organizational commitment in an organization. Wang et al. (2012) highlight that the high job satisfaction can increase the nurses' commitment to the organization.

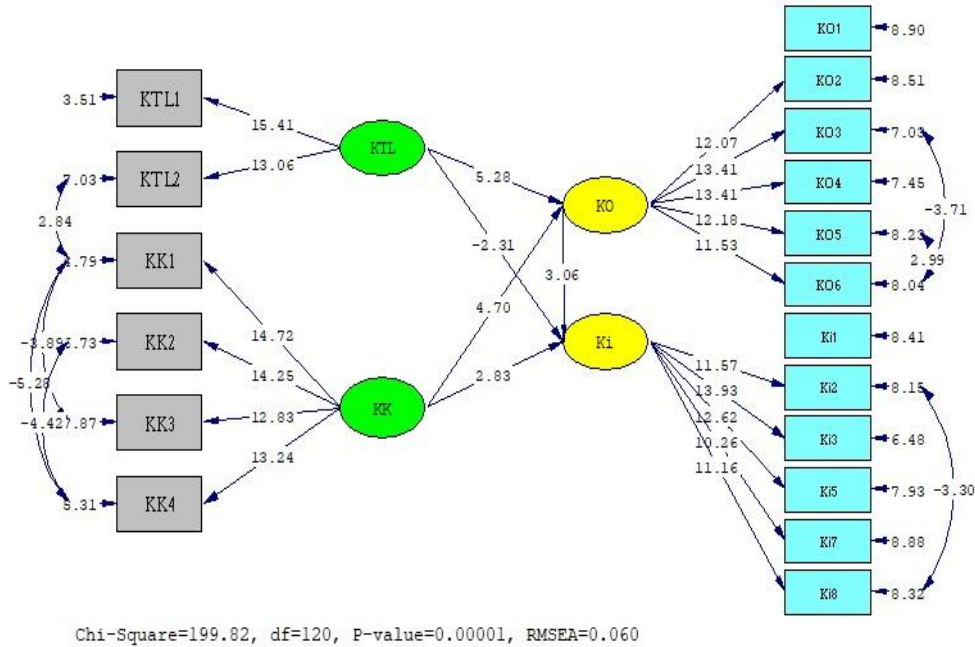


Figure 1 – T-Value Path Diagram

Based on the result of the third (H_3) test, it was found that the result does not support the hypothesis because the t-value equals to -2.31. Accordingly, the shared healthcare allowance compensation does not affect the nurses' work performance. The result of the current study is contrary to the previous study, as both studies investigate different object of the study. The study conducted by Syahreza *et al.* (2017) shows that the compensation does not affect the increase of the nurses' work performance directly.

Based on the result of the fourth hypothesis (H_4) test, it was found that the result supports the hypothesis as the job satisfaction affects the nurses' work performance, indicated by the t-value equals to 2.83. The dimensions in the job satisfaction variable create a positive correlation and affect the increase of the nurses' work performance. The nurses' perception and attitudes is closely related to the working environment, type of job, compensation, relation between coworkers, social relation at the workplace, and so on. Therefore, it can be highlighted that the job satisfaction is a condition in which the nurses' desires and needs that are related to their job are fulfilled. The result analysis of the fourth hypothesis support the statement of the previous study conducted by Barasa *et al.* (2018), which state that the high job satisfaction has positive effect on the increase of the employees' work performance in the organization.

Based on the result of the fifth hypothesis (H_5) test, it was found that the result analysis supports the hypothesis, which is the organizational commitment affect the nurses' work performance, indicated by the t-value equals to 3.06. The dimensions included in the organizational commitment such as affective commitment, continuance commitment, and normative commitments creates a positive correlation and affect the increase of the nurses' commitment to the work performance. The result of the current study also supports the previous studies conducted by Sawitri *et al.* (2016) and Nikpour (2017), who underline that the high organizational commitment can increase the employees' work performance.

The current study also explains the two mediation results applied by coefficient multiplier method. The first result is shown from the hypothesis test, which indicates the

effect of organizational commitment mediating variable between the healthcare allowance compensation and the nurses' work performance. Based on the hypothesis test, the coefficient disparity on the research model, the healthcare allowance compensation affects directly to the organizational commitment with the t value = 5.28 (it is > 1.96). In addition, the healthcare allowance compensation affects the nurses' work performance directly with t value = -2.31 (it is > 1.96). Furthermore, the organizational commitment affects directly on the nurses' work performance with t value = 3.06 (it is > 1.96). Accordingly, it can be underlined that the organizational commitment mediates the correlation between the healthcare allowance compensation and the nurses' work performance. The second result is indicated by the direct effect of the job satisfaction on the organizational commitment with t value = 4.70 (it is > 1.96). The job satisfaction affects the nurses' work performance directly with t value = 2.83 (it is > 1.96). Additionally, the organizational commitment affects the work performance directly with t value = 3.06 (it is > 1.96). As a result, it can be highlighted that the organizational commitment mediates the correlation between the job satisfaction and the nurses' work performance.

In SEM model, the basic analysis concept is that involves mediator variable when the exogenous variable (independent) is able to affect endogen variable (dependent) through other variable, and it is known as mediator variable (M). It means that the independent variable (X) may affect the mediator variable (M), and the mediator variable (M) affects dependent variable (Y). According Baron and Kenny (1986), the role of variable as the mediator occurs when first, the variation on the independent variable is able to describe the disparity of variation in the mediator variable. Next, the variation in the mediator variable is able to describe the variation in the dependent variable. Last, the mediator variable is being controlled (path a dan path b), and whether there is a disparity or no disparity in the correlation between the independent variable and the dependent variable.

An independent variable can predict the dependent variable directly, but the value is smaller compared to the prediction of the mediator variable. There are two analysis models that involve mediator variable. First, full mediation model, it means that the independent variable is not able to affect the dependent variable positively without the mediator variable. Second, part mediation model, it means that the independent variable is able to affect the dependent variable directly without the involvement of the mediator variable.

CONCLUSION

Based on the study on the effects of compensation and job satisfaction on the nurses that is mediated by organizational commitment, the current study underlines several points:

The health allowance compensation does not affect the nurses' work performance. Their humanity and oath are what keep them to do their best, with or without the health allowance compensation. Nevertheless, the nurses expect other allowances like extra bonuses, pay rise based on their workload. The next is the statement that the job satisfaction affects the organizational commitment. The current study points out that the job satisfaction can increase the nurses' organizational commitment. It indicates that the job satisfaction is potential element in the improvement of the organizational commitment. Accordingly, the job satisfaction has correlation and effect on the organizational commitment. The higher the job satisfaction of the nurses, the more positive effect it has on the organizational commitment. On the other hand, the less job satisfaction of the nurses will lower the organizational commitment. Furthermore, the dimensions within the job satisfaction variable create positive correlation and affects the increase of the nurses' work performance. The nurses' feelings and attitude are closely related to the working environment, type of job, compensation, the relation between coworkers, social relation at workplace, and so on. Therefore, it can be pointed out that the job satisfaction is a condition in which the nurses' desire and needs are fulfilled. The nurses' motivation to work is the expectation of the rewards. The examples of the expected rewards are bonuses, salary rise, promotion, and appreciation. These rewards are the aspects of financial and non-financial compensation. It indicates that the aspects of the compensation affect to the degree to which an individual performs their task. However,

based on the third hypothesis (H_3) test, it was found that result analysis does not support the hypothesis, in which the share of the healthcare allowance compensation does not affect the nurses' work performance.

The current study also measures whether the organizational commitment affects the work performance. Based on the result, the work performance is affected by the organizational commitment. In other words, the high organizational commitment can increase the work performance. It indicates that the hypothesis is accepted. The dimensions of the organizational commitment variable such as affective commitment, continuance commitment, and normative commitment affect directly on the nurses' work performance. The nurses' pride over their workplace is viewed as sufficient. There are some factors that generate their pride; one of them is the management strategy to generate the nurses' excessive enthusiasm to the organization.

The study also points out two mediation results using coefficient multiplier method. The first result shows that there is effect of the organizational commitment mediating variable on the healthcare allowance compensation and the nurses' work performance. Based on the test of the coefficient disparity on the research model, the healthcare allowance compensation does not affect directly on the organizational commitment. The nurses' organizational commitment grow because of the nurses always refer to the nurse oath and they put the humanity as the first priority to serve the patients. Accordingly, the researchers of the current study conducted the interviews to the nurses and inform the respondents that based on the analysis the healthcare allowance compensation shared by the organization does not affect their work performance. Based on the interview, it is revealed that what the respondents want is the extra money as bonus rather than compensation. The second result is that the job satisfaction affects directly on the organizational commitment.

The current study has limitations that may become the consideration for the evaluation in the further studies. The current study applied questionnaire as the research instrument. However, the questionnaire has limitation like response bias in reading and answering the survey. There were respondents' inconsistencies in filling out the questionnaire, or responding the questions based on the desirable ideal condition, not the actual one. Accordingly, the questionnaire may not depict the actual variable. Furthermore, the limited sample data consisting of 185 respondents, the four variables (healthcare allowance compensation, job satisfaction, organizational commitment, and work performance), and the limited dimensions and indicator per variable restrict the current study to do extent investigation on the other factors that can affect the employees' work performance.

Based on the results of the current study, there are several recommendations on the nurses' performance and job satisfaction. First, in order to improve the nurses' work performance in the two type-A hospitals the organization must review the related policy on the healthcare allowance compensation so it will meet the fairness and worthiness principles. The researchers of the current study recommend the organization provides extra money as bonuses and fee raise that are adjusted with the nurses' workload. The reason for that is the result of the current study shows that the shared healthcare allowance compensation does not affect the nurses' work performance. Secondly, the nurses' job satisfaction has to be maintained as the nurses' satisfaction is effective to increase the nurses' work performance. The leaders of the organization may improve the supervision so the nurses' job satisfaction can increase the nurses' work performance. Next, there are some suggestions for further studies. The studies that may be conducted in the future may explore the variables that are not included in the current study, so the study expands more knowledge on the human resources development to the public. In addition, other studies need to be conducted in investigating the factors that affect the nurses' work performance, and the actual factor that increase the nurses' work performance.

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PERFORMANCE ANALYSIS OF SHARIA EQUITY FUND IN INDONESIA**Ardhitorahman Hafizh***

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*E-mail: dhitohafizh@gmail.com**ABSTRACT**

The purpose of this study is to provide information about the Sharia equity fund performance with Sharpe, Treynor and Jensen-Alpha methods in Indonesia. This study is a descriptive study using a quantitative approach. The study population was Sharia equity fund in 2015 to 2018. Samples of this study were 21 mutual funds by purposive sampling method. The analysis tool in this study is the method of measuring performance based on risk adjusted return that includes Sharpe, Treynor, and Jensen-Alpha with Microsoft Excel application. During the observation period (2015-2018) there was Sharia equity fund outperform compared with markets (IHSG and ISSI). Best Sharia equity fund is HPAM Syariah Ekuitas, OSO Syariah Equity Fund, and Lautandhana Saham Syariah.

KEY WORDS

Performance, Sharia equity fund, Sharpe, Treynor, Jensen-Alpha.

Presence of Sharia mutual funds can be one alternative investing for the majority of Indonesia's Muslim community to participate in the activities of the capital markets in a way that is lawful. But in reality, the public still doubt over the return to be received from the Fund for Sharia is not great compared to conventional mutual funds. These doubts arise because there is an allegation of suboptimal investment portfolio allocation due to the screening process which limits the investment portfolio only on products that comply with Islamic jurisprudence, whereas in Indonesia investment products Sharia is still limited in number. The performance of the portfolio reflected not only on the rate of return (return) but also on the level of risk (risk). The bigger the return obtained is increasingly higher potential losses

In the year 2013 to 2017, Sharia Funds are having a pretty good development marked by the growing number of Sharia mutual fund assets as well as a white garment. Where the value of the growth of Sharia mutual fund NAV for 5 years reached 200% from 9,432 billion Rupiah grew to be 28,311 billion Rupiah. The Islamic finance industry in Indonesia has a huge potential for growth because of the limited market share of the Islamic finance industry in Indonesia compared to conventional financial industry.

Table 1 – The development of Syariah mutual funds based on portfolio assets

No.	Type of Mutual Fund	NAV Sharia mutual fund (Trillion Rupiah)
1.	Money Market	2,05
2.	Equity	16,43
3.	Fix income	4,61
4.	Mixture	2,44

Source: www.ojk.go.id.

The table above shows the phenomenon among the types of mutual funds that exist in their asset allocation, Stock equity Funds are superior to other types of mutual funds with the highest NAV value of 16,43 trillion Rupiah for Sharia Equity Funds. In general, investors will choose to invest their funds with financial considerations, namely considering returns and risks.

From picture 1 it can be seen even though the performance of the index Sharia equity fund in early 2014 has a performance above Indonesia Sharia stock index and Jakarta composite index but in 2015 to 2017 thus progressively decreased until its performance under the return of market. In theory it should have equity fund performance over the market, but in fact the return shown by Sharia equity fund during the period 2014 – 2017 could not offset the return of ISSI and JCI. This is an indication that along with the rapid growth of Shariah-compliant mutual fund instruments, but not demonstrated by the performance of Sharia equity fund is a good therefore problems faced by investors or potential investors is how to choose an alternative to existing mutual fund based on the performance of the portfolio. Addressing these problems is important then conducted a research on the analysis of the performance of Sharia equity fund to help investors in collecting information and compare the performance of each Mutual Fund. The existence of this research are expected to stock investors have valid information to choose a Sharia equity fund that could potentially generate a profit optimal.

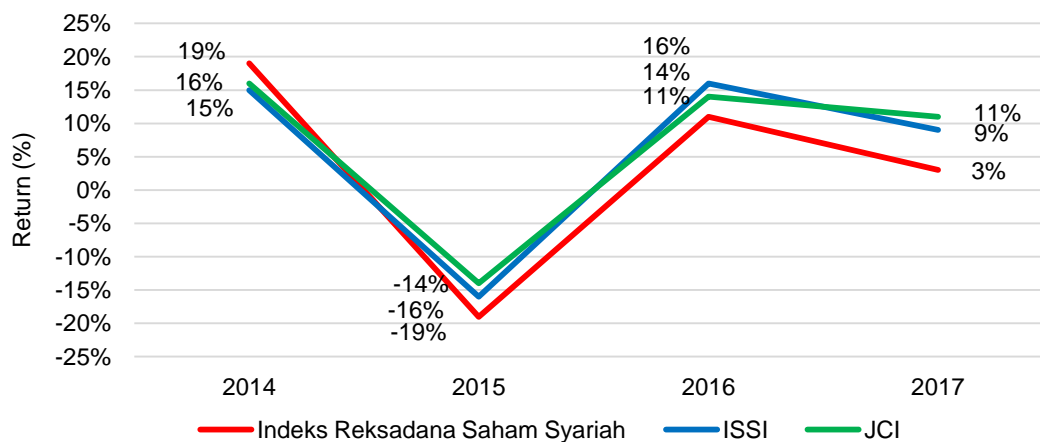


Figure 1 – Comparison of returns between the Sharia equity fund index, Indonesian Sharia stock index and Jakarta composite index

Based on the explanation above, the research question for this study is: "How is the performance of Sharia equity funds based on methods Sharpe, Treynor, and Jensen-Alpha on market performance ISSI and JCI from 2015 to 2018.

This research aims to analyze the performance of Sharia equity funds based on methods Sharpe, Treynor, and Jensen-Alpha with market performance ISSI and JCI from 2015 to 2018.

LITERATURE REVIEW

Investment is the amount of the current commitment during a certain period to generate a rate of return in the future as compensation the top investor: the time it takes for the commitment of funds, inflation rate, and the uncertainty of returns funds in the future (Zaenal, 2007). Mutual funds are a container and service provision established to help investors who want to participate in the capital market without direct involvement in procedures, administration, and analysis in a capital market. This is due to the mutual funds managed by investment managers who represent investors who participate in mutual funds, therefore it is reasonable when the performance of mutual funds managed by professional investment managers can exceed the performance of the portofolio is composed of ordinary investors who only buy and hold strategies (Abdul, 2010).

In General, investors will choose to invest their funds with financial considerations, i.e. considering the yield (return) and risks (risk) merely. Investors need a method of measurement as a tool that can help to determine the portfolio of the mutual fund of his choice, so should each method produces the same results (consistently). Therefore,

performance measurement of mutual funds is an important thing to do (Huda 2008). Nadifa (2016) showed that the results there are some products mutual funds stock and fixed income mutual fund that has a performance that outperformed for the market. Eva (2010) States that assessment of mutual funds with the method of Sharpe shows 3 mutual funds had a good performance. While 5 other poorly performing mutual funds because portfolio under the market.

METHODS OF RESEARCH

This research uses descriptive method quantitative because in this study researchers strive to find the performance characteristics of Sharia Equity fund shares were then compared with the market's return. The population in this research is the whole Sharia Equity Fund that are listed in Indonesia in the period 2015 – 2018. Analysis calculation using the Risk-Adjusted Return with Sharpe, Treynor, Jensen-Alpha. Here is example of such model:

$$Sp = (Rp - Rf) / \sigma_p; Tp = (Rp - Rf) / \beta_p; JAp = Rp - [Rf + \beta_p(Rm - Rf)]$$

Where: Sp = Sharpe Ratio; Tp = Treynor Ratio; Ap = Jensen-Alpha Ratio; Rp = return portfolio; Rf = return risk-free interest rate; σ_p = Standar Deviation; β_p = Beta Portfolio; Rm = Return Market.

RESULTS AND DISCUSSION

Based on the research criteria, there are 21 Sharia equity funds that meet the criteria that are used as research samples. The performance measurement of Sharia equity funds in 2015 - 2018 was carried out using the Sharpe, Treynor, and Jensen-Alpha. The results of the measurements obtained will be compared with market performance, namely the Jakarta Composite Index (JCI) and the Indonesian Sharia Stock Index (ISSI), so that it can determine Islamic stock mutual fund products where outperformed and underperformed from market performance.

The results of the analysis with the Sharpe method. Based on the results of the calculation of the performance of Sharia equity funds in 2015 - 2018 using the Sharpe method, the result is that all Sharia equity funds show negative performance. This shows that all Sharia equity funds based on the Sharpe method are not feasible to be used as investment places and so are the values of the market that show negative performance. However, when compared with its market value, it produces 13 Sharia equity funds that are outperformed against the JCI market of -2.07414 and ISSI amounting to -2.01012 with the first order, HPAM Syariah Ekuitas -1.45617; Pratama Syariah -1.56893; Pacific Syariah Saham -1.60115; Simas Syariah Featured -1.72111; SAM Sharia Equity Fund -1.75290; OSO Syariah Equity Fund -1.79335; Avrist Equity Amar Syariah -1.92412; Mandiri Investa equity Syariah -1.92499; Sucorinvest Sharia Equity Fund -1.93031; Danareksa Syariah Saham -1.95175; MNC Dana Syariah Equity -1.99648; PNM Ekuitas Syariah -2.00495; Mandiri Investa Atraktif Syariah -2.00690.

The results of the Sharpe method are in accordance with Arief (2017) research which says that there are several equity mutual fund products that have outperformed performance even though the results of the mutual fund value are negative. Measurements using the Sharpe method are rated from each mutual fund product, so the mutual fund product that reaches the third highest position is the first mutual fund, HPAM Syariah Equity, followed by Pratama Syariah and Pacific Syariah Saham in the third rank.

The results of the analysis with the Treynor method. Based on the results of the calculation of the performance of Sharia equity funds in 2015 - 2018 using the Treynor method the results are seen that all Sharia equity funds show negative performance, but there is one positive performance mutual fund, namely OSO Syariah Equity Fund. This means that the OSO Syariah Equity Fund based on the Treynor method is worthy of being used as an investment place in Sharia equity funds. Meanwhile, the performance of the

market shows a negative performance. When compared with the market value in the calculation model of the Treynor index performance in 2015-2018, it is found that there are 7 Sharia equity funds that are able to outperformed the JCI market of -0.57004 and ISSI at -0.60402. Mutual funds that occupy the first rank are the Syariah Equity Fund OSO 1.66342 and then followed by Lautandhana Syariah Shares -0.09685; SAM Sharia Equity Fund -0.15020; PNM Ekuitas Syariah -0.52839; Avrist Equity Amar Syariah -0.53788; Cipta Syariah Equity -0.56225; Manulife Syariah Sektoral -0.56482.

The results of the Treynor method are in accordance with Aida (2015) study which revealed that stock mutual funds have a positive and better performance than Sharpe. The results of the calculation of Sharia equity funds using the Treynor method, are rated from each mutual fund product. If the rank is sorted, the mutual fund products that reach the top three are OSO Syariah Equity Fund, Lautandhana Syariah Shares and SAM Sharia Equity Fund. From the discussion above, the three funds can be an alternative in investing in Islamic stock mutual funds for investors a Sharia equity fund the researchers concluded that the three mutual funds were the best in accordance with the performance that could exceed the market in the period 2015-2019.

The results of the analysis with the Jensen-Alpha method. Based on the results of the calculation of the performance of Sharia equity funds in 2015 - 2018 using the Jensen method, the results of all Sharia equity funds show negative performance. This means that all Sharia equity funds with the Jensen method are not feasible to be used as places of investment and also for the performance of the market which shows negative results. When compared to the market value, the calculation results using the Jensen-Alpha Index performance in 2015-2018 have 18 Sharia equity funds showing better performance than the JCI and ISSI markets which have values of -0.09814 and -0.09854. From the outperformed Islamic stock mutual funds, Lautandhana Syariah Shares were ranked first with a value of -0.07511, followed by SAM Sharia Equity Fund -0.08451; Sucorinvest Sharia Equity Fund -0.09519; Manulife Syariah Sektoral -0.09562; MNC Dana Syariah Equity -0.09567; Batavia Dana Syariah Shares -0.09584; Bahana Equity Syariah -0.09602; Cipta Syariah Equity -0.09605; PNM Syariah Equity -0.09621; Avrist Equity Amar Syariah -0.09627; Mandiri Investa Atraktif Syariah -0.09630; HPAM Syariah Ekuitas -0.09674; Danareksa Syariah Stock -0.09675; Panin Sharia Funds -0.09684; Syariah Mandiri Investa equity -0.09705; Featured Simas Syariah -0.09729; Sharia Trim Stock -0.09732; CIMB Islamic Equity -0.09761;

The results of Jensen's method are in accordance with Annisa research (2016) which says the results are stock mutual funds that have outperformed performance better than the JCI performance. By using the Jensen Index, the calculation of Islamic stock mutual funds is ranked on each mutual fund product. If the ranking is sorted, then the Islamic stock mutual fund products that reach the top three are Lautandhana Syariah Shares which was ranked first and followed by SAM Sharia Equity Fund and Sucorinvest Sharia Equity. From the conclusion of the results above, the three Sharia equity funds can be used as alternative investments and the researchers conclude that the three mutual funds are the best mutual funds in the period 2015-2018 with performance that is able to exceed the market.

MANAGERIAL IMPLICATIONS

For investors, this research can be used as a reference in investing in Sharia equity funds. It is expected that investors will analyze or determine the performance of a Sharia stock mutual fund before deciding to invest in the equity fund. Because even if managed by a professional Investment Manager, the ability to choose the right mutual fund is still needed. In order to get a high return, investors must choose to invest in Sharia equity fund that have performance above market performance (outperformed).

For investment managers, it is expected that the performance results of Sharia equity funds in this study can be used as material for consideration to further enhance the ability to determine stocks in their investment portfolios in order to improve their mutual fund performance. When selecting stocks to be included in their investment portfolios, investment

managers should conduct a more in-depth analysis of the performance of the shares in question, not just using a simple strategy or just based on the intuition of the investment manager. This is important enough so that it is better to do the selection of Sharia stocks which are considered the most potential to provide optimal returns in the future by applying various approaches in compiling portfolios to get good performance or returns above market prices, so that later investors can attract investors Islamic stock mutual funds.

CONCLUSION AND SUGGESTIONS

Conclusions in this study resulted in the results of research on Sharia equity funds with Sharpe, Treynor, and Jensen-Alpha methods in 2015 to 2018 which had negative performance results. Based on the results obtained by Sharia equity funds with the market, the Sharpe index method results in whether 13 outperformed and 8 underperformed. For the index method, the results of Treynor 7 are outperformed and 14 underperformed. The Jensen-Alpha index method can be found in 18 outperformed and 3 underperformed. With the best Sharia equity funds are HPAM Syariah Ekuitas, OSO Syariah Equity Fund, and Lautandhana Saham Syariah.

This research can be used as reading material and knowledge about Sharia equity funds, for further research it is better to add more varied performance calculations with longer time periods.

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HEALTH AND SAFETY SYSTEM IMPLEMENTATION OF CONSTRUCTION PROJECT WORK INTO CORPORATE CULTURE TO INCREASE PERFORMANCE

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ABSTRACT

Generally speaking, in Indonesia, safety and security at work (also widely known as K3, Keselamatan and Keamanan Kerja), had not been primary concern in the general and construction Works. It is shown in the high figure of work accidents in construction works, reaching approximately 7-8% of the whole sector of workers. Which is in turns contributes 6.45 % to Indonesian GDP as cost on national level. That is why the concern to K3 must be developed as corporate culture, not only to protect workers' safety and security but also to increase the performance of the firms.

KEY WORDS

Workplace accidents, occupational safety, health culture, construction project performance.

Construction activities are an important element in nation-building and have been proven to provide important contributions in the development and economic growth of all countries in the world, both organized by the government as well as by private sectors (Kadin, 2002). However, it should also be remembered that the implementation of construction activities has the potential to cause various undesirable impacts.

In general, K3 issues in Indonesia are still often overlooked, especially in the implementation of the constructions of public works with simple building constructions. This is indicated by the still high rate of work accidents in the construction service sector which covers around 7 - 8% of the total workforce in all sectors, and contributes 6.45% of GDP in Indonesia. Ironically, out of the total workforce in construction sector which reaches around 4.5 million people, 53% of them only received education up to elementary school level, in fact around 1.5% of these workers have never received any formal education (Iman Kurniawan Wicaksono and Moses L. Singgih, 2011). Therefore, construction activities should be managed in accordance with the applicable K3 standards and provisions.

The Ministry of Public Works, according to its field of work, also continues working to improve Occupational Health and Safety (K3). One of the efforts of the Ministry of Public Works is to improve the Occupational Health and Safety, carried out by issuing the Minister of Public Works Regulation No.09/PRT/M/2008 dated 1 Juli 2008 concerning Guidelines for Occupational Health and Safety Management System (SMK3) for construction in the field of public works. In addition, several occupational health and safety regulations have been established, among others are as follows: Law No. 1 of 1970 concerning Occupational Safety and Minister Regulation No. PER05/MEN/1996 concerning Occupational Health and Safety Management System. These regulations were established for the purpose of preventing and anticipating work accidents. The occupational health and safety programs should start from the most basic stage, namely the establishment of an occupational safety and health culture (Reason, 1997).

According to Mondy (2010) occupational safety is the protection of employees from injuries caused by accidents related to work. Safety risks are aspects of working environment that can cause fires, electrical hazards, cuts, bruises, sprain, fractures, loss of limbs, visions, and hearings. While occupational health is freedom from physical violence. Health risks are factors in a working environment that work over a specified period of time, an environment that can create emotional stress or physical disturbances. Both concepts are known as Occupational Health and Safety (K3). Occupational health and safety programs will be able

to function effectively if the program can be communicated to all layers of individuals involved in the construction projects.

In turn, good employee performance may have positive impact on the company as a whole. One of them is an increase in the settlement of responsibilities given by the company to workers. Factors of safety and protection at work become one of the factors that influence employee performance. When employees have a sense of security and comfort because they feel they get good protection from the company, the employees would also work with a relaxed feeling and may work well. It is expected that company employees like this will have maximum performance. One effort in implementing protection for employees is by implementing the Occupational Health and Safety (K3) program.

There is an interesting phenomenon that is owned by construction industry, namely:

- Construction industry services are an industry that has considerable risks, but can be minimized by the existence of occupational health and safety programs through the establishment of work cultures, one of which is occupational health and safety culture;
- Construction industry is an industry that does not have an orientation solely on the end products as in other industries; instead it is a process-oriented industry.

In the Construction Project Management, one of the main objectives achieved are to create a working climate that supports in terms of facilities, working conditions, work safety, and open reciprocal communication between superiors and subordinates (Paulus, 1985). This study tries to analyze the relation between the fulfillment of occupational health and safety (K3) in the corporate culture and the performance of companies in construction service sector.

Occupational Health and Safety according to OHSAS 18001:2007 defines Occupational Health and Safety as conditions and factors that influence or will influence the health and safety of workers (including contract workers or contractors) and also guests or other people at the workplace. Occupational Health and Safety (K3) is a system designed to ensure proper safety to all personnel in the workplace so as not to suffer any injuries as well as causes illness in the workplace by adhering or obeying the laws and regulations of occupational health and safety, which are reflected on the changes of attitudes towards safety in the workplace. Rijuna Dewi (2006 in the Journal of Management and Organizational Studies, Volume 7:44).

There are many causes of workplace accidents in construction projects, one of which is the character of the project itself. Construction projects have a poor connotation when viewed from the aspect of cleanliness and neatness, to be more precise, it could be called chaotic due to the many tools, workers, materials. Other factors that cause workplace accidents are the construction workers themselves, who tend to ignore the provisions of work safety standards, choice of inappropriate work methods, workplaces changes so they must always adjust, disputes between workers that affect their performance, employee disputes with the project team, equipments used, and many other factors.

In addition, according to H. W. Heinrich's domino effect theory, the biggest contribution to the causes of work accident cases is the human negligence factor that is equal to 88%. Whereas the other 10% are from the factors of property / asset / goods inadequacy and 2% other factors. From the results of the evaluation of occupational accidents so far, it can be concluded that several factors that have caused accidents, both with fatalities as well as injuries, did not involve construction engineering experts, did not use appropriate implementation methods, poor supervision of construction in the field, had not yet fully implementing regulations concerning the existing K3, poor supervision of K3 implementation, inadequacy of both the quality and quantity of the available Personal Protective Equipment (PPE), socio-economic environmental factors and work culture and lack of discipline of workers in complying with K3 provisions, including the use of occupational accidents PPE (Construction and Human Resource Development Agency, 2007).

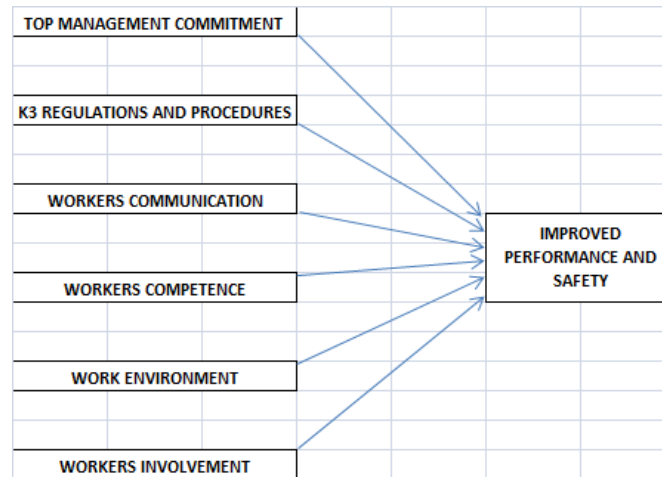


Figure 1 – Improved performance and safety

According to Wieke Y.C. et al (2012:85), occupational health and safety culture may be observed from several indicators, namely as follows:

1. Manager's commitment to workers. To start an occupational safety programs, top management to formulate a policy which shows their commitment to occupational safety issues. This initial step will determine the next policy making in terms of occupational safety.

2. The existence of K3 Regulations and Procedures. Companies that have occupational safety culture will have regulations and procedures governing K3. The procedure is a description of steps needed to achieve a situation or resolving tasks, in this case the security task and to achieve a secure situation. The regulations concern things that may or may not be done, and what must be done along with their penalties.

Companies with occupational safety culture would have procedures and regulations that are understood by their employees and may be reasonably practiced by the employees. This regulation should have strict penalties against their violations.

These regulations and procedures should be updated regularly in accordance to the company's situations.

If the company implements regulations and procedures that are not in accordance to the conditions of the construction projects, nor is it difficult to apply to the work, then the workers would be compelled to violate those occupational safety regulations and procedures established by the company.

3. The existence of a communication channel. Occupational safety programs should be supported by a good information management system in terms of gathering and delivering information, which includes the existence of good information channels from the management to workers and vice versa.

4. Workers Competence, namely the abilities possessed by the workers. Workers with a good level of competence are expected to be able to minimize work accidents and may assist in increasing the other workers' competence in occupational safety.

5. Working environment. The condition of a conducive working environment can support the application of an optimal occupational safety programs if all workers prioritize these occupational safety programs, and with an increasingly conducive work environment, it is expected to increase the workers' motivation.

6. The involvement of workers in K3. Workers who are aware of the importance of occupational safety programs will apply them wholeheartedly and without coercion, and feel that occupational safety programs are the right of the workers, instead of an obligation to do their jobs.

Performance increase may be reviewed from the criteria as follows: workers are able to work according to the target; timeliness in carrying out tasks; there is no work accident in the working environment; there are no errors in the working environment; attendance according to the work schedule (Wieke Y.C., 2012).

According to Mangkunegara (2009: 67), employee performance is the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him. Performance measures for a factory manager consist of various criteria. One of them is occupational health and safety, namely the level of frequency of seriousness of workplace accidents.

Occupational Health and Safety is not only aimed at achieving high levels of occupational health and safety, or just to prevent the possibility of workplace accidents, as well as occupational diseases. More than that, K3 has a vision and mission far ahead, namely to realize a healthy, safe, productive, prosperous workforce with good performance.

Occupational safety and health are important for the company, since the impact of accidents and occupational diseases not only harms employees, but also companies both directly and indirectly. Work safety means the process of planning and controlling potential situations that lead to workplace accidents through the preparation of standard operating procedures that are used as references in work (Rika Ampuh Hadiguna, 2009). Prabu Mangkunegara (2001) defines occupational health as a condition free from physical, mental, emotional or pain disorders caused by working environments.

This research intends to understand the phenomenon experienced by the research subject, for instance behavior, perception, motivation, action, et cetera, by applying qualitative approach. Qualitative research is a research by description in the form of words and language through the utilization of various scientific methods. There are two studies being reviewed in this research: by Saloni Waruwu et al (2016) and Subhan Zul Ardi et al (2018). It is necessary to add here that both researches have yet to show the factual implementation to achieve the goals. Here we would take a factual example on how a project is implementing K3 that supports in achieving the aimed continuous work culture.

This research has been undertaken and implemented in accordance with scientific procedures, but still has the limitations of:

- Factors influencing the Company Culture are yet to be specifically described, this research only has three variables, the management commitment, communication, and competence, whilst there are other factors that may have influences, such as the employees code of conduct, the availability of safety facilities;
- There is yet any specific data on how to increase the variable indicators to produce a consistent and continuous work culture.

The suggestions given for the any future research are as follows:

- Further research is required to discover any factor that might influences the work health and safety culture, and factors that influence the performance of a construction project;
- Further research is necessary to apply an evaluation standard for work health and safety culture in a construction project by referring to the number of accidents or violations committed by the construction workers;
- Further research is necessary to discover the benefits received by the company with the increase of company performance using case study research method and optimization analysis method to acquire an optimal profit;
- Future researchers should have better research model and by strong theories by having more references on construction works to support their researched topics.

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THE EFFECT OF RELIGIOSITY MODERATION TO HALAL LOGO ON INCREASING MUSLIM PURCHASE INTENTION IN JAKARTA

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ABSTRACT

Studying on sales of products that have Halal Logo are very attractive in Indonesia, putting Halal Logo on products are expected to improve consumers purchase intention. This study examines the effect of religiosity moderation to halal logo increasing purchase intention especially in Muslims consumer. From the results of several previous studies on the concept of halal and Muslim ways, there are three proposed variables, namely halal logo, religiosity and purchase intention. Where products with a halal logo which is moderated by religiosity will increase purchase intention of Muslims consumer. The data in this study were collected through online surveys using a google form questionnaire with a total of 120 Muslim consumers living in Jakarta with ages ranging from seventeen to forty years. The study was conducted in November 2018 using a research method that is moderate with a comparative approach of two groups of data samples to see the relationships between variables. Data analysis method use in this study is Univariate Analysis of Variance (Univariate ANOVA). The results of this study indicate that products with Halal Logo which is moderated by intrinsic religiosity will increase purchase intention but in the other hand Halal Logo which is moderated by extrinsic Religiosity does not increase purchase intention.

KEY WORDS

Halal, logo, intrinsic religiosity, extrinsic religiosity, purchase intention.

Islam is a religion of grace and peace. Not surprisingly, the number of people who follow Islam increases every year. The CIA World Factbook states that the world Muslim population is 7.4 billion or approximately 23.2% of the world population. The PEW Research Center states that the Muslim population has grown by an average of 1.5% since 2019 and will reach 2.2 billion in 2030. Indonesia as a country that has 260 million inhabitants is in the fourth position on the world largest population; with a Muslim population at 87.2% Indonesia certainly has a consumer segment for halal products that are very high. The large number of Muslim populations has an impact on increasing variations in halal products, such as food, beverages, clothing, medicines, hotels, banks, or property. In addition, Muslim awareness of the importance of choosing products that have halal products will certainly also affect the interest in buying products. Halal products are products that have been granted a halal certificate by the relevant institution and are given a sign through the halal logo on the packaging. In Indonesia, halal certification is issued by the halal product guarantee agency namely Badan Penyelenggara Jaminan Produk Halal (BPJPH) of Indonesia Ministry of Religion.

Consumer decisions to buy a halal product are related to Religiosity. A person's religiousness refers to the level of individual adherence to his religion (Worthington et al, 2003). This can be measured by involvement in religion as a means and purpose. religiosity as a means refers to extrinsic attributes, while religiosity as a goal refers to Intrinsic attributes (Mokhlis, 2009). This study conducts to prove the moderation of religiosity on halal logo will increase Purchase Intention to Muslim consumers.

LITERATURE REVIEW

The majority of Muslims pay attention to the contain in the products they are going to buy, the existence of halal logos on the products will increases the intention of Muslims to buy a product. Muslim consumers are careful in choosing products, first they will ensure that the

products to be purchased are good and halal (Jonathan A.J. Wilson & Liu, 2011). The research conducted by (Nasution & Rossanty, 2018) shows halal logo increasing the purchase of imported frozen food. Muslim consumers are afraid to consume derivative products from meat using packaging originating from non-halal materials. Religious values affect consumers intentions to consume meat and derivative products (Bonne, 2008). The hotel manager feels that halal certification is very dominant in the hotel industry, because it encourages the importance of restaurant managers having knowledge of food boundaries, understanding and spiritual practices of Muslims (Marzuki et al., 2012).

Product certification as a halal product not only guarantees Muslims for what they eat or consume in accordance with Islamic law but also gives trust to producers to meet standards (Arif & Ahmad, 2011). The halal logo has become a common tool for convincing Muslims in several countries. According to Peraturan Menteri Perdagangan Republik Indonesia Nomor 31 tahun 2011 food labels are descriptions of food in the form of pictures, writing, or a combination of both, and other forms that are inserted or pasted on the packaging. Halal products are products that have been granted a halal certificate by the relevant institution and given a sign through a halal label in the form of a halal logo on the packaging. Halal Logo is a statement that is permitted about food packages to indicate the status of a product. In Indonesia, halal certification is issued by the Halal Product Guarantee Agency namely Badan Penyelenggara Jaminan Produk Halal (BPJPH) of Indonesia Ministry of Religion.

Religion and religiosity are considered a taboo topic in the field of marketing (Khraim, 2010). However, in the marketing literature there are several studies on this topic. Religion is an important cultural component. Roles in consumer behavior cannot be ignored (M. Patel, 2012). According to Worthington et al. (2003), Religiosity agrees with the level of individual participation in religion. This can be considered in terms of participation in religion as a means and purpose. Religiosity as a means refers to extrinsic religiosity attributes, while as a goal, refers to Intrinsic attributes (Mokhlis, 2009). For studies of halal purchases, religion and religion can be added to the model (Junos, 2012). According to Ajzen (2001), a person's normative trust represents a recognized expectation from an individual or an important reference group of that person. Buying halal products can be caused by subjective norms. When a consumer feels pressure from their reference, he will act like the pressure group (Wilson & Grant, 2013).

Highly religious people are more dogmatic than less religious people, which makes very religious people buy food that is in harmony with their religion. Religiosity will affect the likes and dislikes of Muslim customers (Ateeq-ur-Rehman & Shabbir, 2010). Newaz et al. (2016) said religiosity has a positive effect on Muslim consumers. Regarding their religion, Muslims will choose foods that have a halal label compared to those that do not have a halal label. Research conducted by (Soon & Wallace, 2017) found attitudes to be a significant factor in influencing the intention to buy halal food.

According to "Theory of Planned Behavior", the consumer's intention to buy any product depends entirely on three main factors, namely attitudes, norms and perceptions of the subject. According to Ajzen and Fishben (1980), subjective norms can also be termed attitudes toward certain behaviors. In other words, this is the individual's perception of social factors that influence individuals to do or not do certain behaviors. In terms of purchasing halal products, trust in consumer behavior will determine whether the person will buy halal products or not. halal awareness, halal certification and halal marketing concepts towards the intention to purchase halal food (Rajagopal et al., 2011). Determination of purchase intentions when buying halal products is based on high and low consumer religious beliefs, because this religiosity is a basic principle that influences purchase intentions (Alam & Sayuti, 2011).

HYPOTHESIS DEVELOPMENT

Relationship between Halal Logo and Purchase Intention. Halal is an Arabic word that means legal, permitted, or permitted (Wilson & Liu, 2010). This implies that Muslims must consume or buy products that are permitted by their religion. Muslim consumers are required by their religion to only consume halal products. Therefore, when buying products, they are

looking for halal logos certified by religious authorities. The study conducted by (Aziz & Vui, 2012) shows that the purchase intention of halal food products is influenced by awareness and halal certification. Muslim consumers are careful in choosing products, they first ensure that the products to be purchased are good and halal (Jonathan A.J. Wilson & Liu, 2011). Research conducted by (Nasution & Rossanty, 2018) shows halal logos increasing the purchase of imported frozen food.

H1: Halal logo increases Purchase Intention.

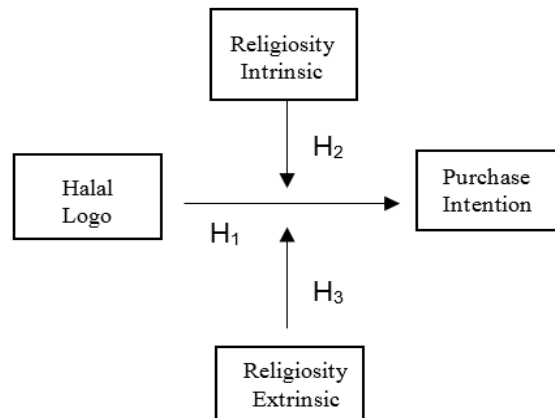


Figure 1 – Conceptual framework

The relationship between halal logo which is moderated by religiosity to increase purchase intention. Muslims will choose foods that have a halal label than those who do not have a halal label. Research conducted by (Soon & Wallace, 2017) found that attitudes are a significant factor in influencing the purchase intention of halal food. According to Ajzen (2001), normative beliefs represent perceived behavioral expectations of individuals or important reference groups of the person. Buying halal products can be influenced by subjective norms. When a consumer feels pressure from their reference, he will act like the pressure group (Wilson & Grant, 2013).

H2: Halal Logo which is moderated by Religiosity Intrinsic increases Purchase Intention;

H3: Halal Logo which is moderated by Religiosity Extrinsic increases Purchase Intention.

METHODS OF RESEARCH

This study examines the effect of religiosity moderation to halal logo increasing purchase intention especially in Muslims consumer. Data in this study were collected through online surveys using google form questionnaire, with the number of respondents as many as 120 Muslim consumers living in Jakarta with ages ranging from 17 to 40 years. The study was conducted in November 2018 using a research method that is moderate with a comparative approach of two groups of data samples to see the relationships between variables. Data analysis method use in this study is Univariate Analysis of Variance (Univariate ANOVA). The sample measurement method use is Likert scale, where respondents are asked to choose one to five of scale intervals for their choices ranging between strongly agree to strongly disagree for the statement that best fits the respondent. The results of the analysis are interpreted, and the final steps are summarized and given suggestions.

There is one independent variable in this study, namely Halal Logo, one moderating variable namely Religiosity which has Intrinsic and Extrinsic attributes, and one dependent variable namely Purchase Intention. Measurement of the Halal Logo and Purchase Intention variables using (Malhotra, 2010), while the measurement of the Religiosity variable using dimensions (Worthington et al., 2003) Religious Commitment Inventory (RCI 10) consisting of Intrinsic Religiosity and Extrinsic Religiosity. Questionnaire was used to obtain data from

respondents. The original questionnaire used English which was then translated into Indonesian. Validity test and reliability test is done by using the initial 30 data.

Validity test is done by Confirmatory Factor Analysis, by looking at the value of Kaiser-Meyer-Olkin Measure of Sampling (KMO) and Measures of Sampling Adequacy (MSA). In this test the value obtained must be greater than 0.500 which means that factor analysis is suitable for use, and can be further processed (Doll et al., 1994). The Halal Logo scale consists of 5 statements and there are 2 invalid statements because there are more than one matrix component, invalid statements are X1 (0.650) and X5 (0.566), the Intrinsic Religiosity scale consists of 6 statements and all are valid, the Extrinsic Religiosity scale consists of 3 statements and all are valid, while the scale of Purchase Intention consists of 4 statements and all are valid. Cronbach Alpha value reliability test is greater than > 0.5 which means reliable (Sugiyono, 2012), in the other word it can be said that the indicators of all variables can be trusted as a data collection tool in this study. The next phase, we were managing the data using the Univariate Analysis of Variance analysis method. Univariate ANOVA was considered able to explain the analysis of variability in two sample groups in detail.

RESULTS OF STUDY

This study examines the effect of religiosity moderation to halal logo increasing purchase intention especially in Muslims consumer. There are two moderations of Religiosity given, Intrinsic and Extrinsic. Where the results obtained indicate that the moderation of intrinsic religiosity towards halal logo increases purchase intention, but the extrinsic religiosity moderation has no effect on purchase intention. Data analysis was performed using Univariate ANOVA where halal logo, intrinsic religiosity and extrinsic religiosity are grouped into two groups to be compared. Grouping scale can be seen below:

Halal Logo	HL_Code=1	High Halal Logo Perception
	HL_Code=2	Low Halal Logo Perception
Religiosity Intrinsic	RI_Code=1	High Religiosity Intrinsic
	RI_Code=2	Low Religiosity Intrinsic
Religiosity Extrinsic	RE_Code=1	High Religiosity Extrinsic
	RE_Code=2	Low Religiosity Extrinsic

The table below explains the results of Univariate Anova on the moderation of fix factor Intrinsic Religiosity and Halal Logo on dependent variable Purchase Intention. The Confidence Interval used is 95% or if the Sig value is <0.05 then it is said to be significant.

Parameter	B	β	t	Sig	Description
Intercept	β_0	0.350	2.097	0.038	significant
HL_Code=1	β_1	0.010	0.039	0.969	Not Significant
[HL_Code=1]*[RI_Code=1]	β_2	-0.782	-3.196	0.002	Significant
[HL_Code=2]*[RI_Code=1]	β_3	-0.628	-2.569	0.011	Significant

H1: Halal Logo does not increase Purchase Intention;

H2: Halal Logo which is moderated by Intrinsic Religiosity increase Purchase Intention.

Calculation of test results for the Halal Logo relationship model which is moderated by Intrinsic Religiosity towards Purchase Intention can be seen below:

	HL_Code=1	HL_Code=2	Difference	Hypothesis
RI_Code=1	$\beta_0 + \beta_1 - \beta_2$	$\beta_0 - \beta_3$	$\beta_1 - \beta_2 + \beta_3$	
RI_Code=2	$\beta_0 + \beta_1$	β_0	β_1	H _{2a}
Difference	$-\beta_2$	$-\beta_3$		
Hypothesis	H _{2b}	H _{2c}		

H2a: Specifically, for groups of respondents with low Intrinsic Religiosity, Respondents who have a high perception of Halal Logo have a higher Purchase Intention than the group of respondents who have a low perception of Halal Logo.

H2b: Specifically, for groups of respondents who have a high perception of Halal Logo, respondents with low Intrinsic Religiosity have Purchase Intention that is higher than the group of respondents with high Intrinsic Religiosity.

H2c: Specifically, for groups of respondents who have a low perception of Halal Logo, respondents with low Intrinsic Religiosity have Purchase Intention that is higher than the group of respondents with high Intrinsic Religiosity.

The table below explains the results of Univariate Anova on moderating fix factor Extrinsic Religiosity and Halal Logo on dependent variable Purchase Intention. The Confidence Interval used is 95% or if the Sig value is <0.05 then it is said to be significant.

Parameter	B	β	t	Sig	Description
Intercept	β_0	0.220	1.198	0.233	Not Significant
HL_Code=1	β_1	-0.035	-0.136	0.892	Not Significant
[HL_Code=1]*[RE_Code=1]	β_2	-0.501	-1.963	0.052	Not Significant
[HL_Code=2]*[RE_Code=1]	β_3	-0.315	-1.234	0.220	Not Significant

H1: Halal Logo does not increase Purchase Intention;

H3: Halal The logo which is moderated by Extrinsic Religiosity does not increase Purchase Intention.

Calculation of test results for the Halal Logo relationship model which is moderated by Extrinsic Religiosity towards Purchase Intention can be seen below.

	HL_Code=1	HL_Code=2	Difference	Hypothesis
RE_Code=1	$\beta_0-\beta_1-\beta_2$	$\beta_0-\beta_3$	$-\beta_1-\beta_2+\beta_3$	
RE_Code=2	$\beta_0-\beta_1$	β_0	$-\beta_1$	H3a
Difference	$-\beta_2$	$-\beta_3$		
Hypothesis	H3b	H3c		

H3a: Specifically, for the group of respondents with low Extrinsic Religiosity, respondents who have a low perception of Halal Logo have a higher Purchase Intention than the group of respondents who have a high perception of Halal Logo.

H3b: Specifically, for groups of respondents who have a high perception of Halal Logo, respondents with low Extrinsic Religiosity have higher Purchase Intention than groups of respondents with high Extrinsic Religiosity.

H3c: Especially for groups of respondents who have a low perception of Halal Logo, respondents with low Extrinsic Religiosity have higher Purchase Intention than the group of respondents with high Extrinsic Religiosity.

DISCUSSION OF RESULTS

The results of the first hypothesis test (H1) found that the data did not support the hypothesis because from the Univariate Anova test results on the Halal Logo variable which was not moderated by Religiosity, the results were not significant. These results do not support previous studies conducted by Aziz & Vui (2012); Wilson & Liu (2011); Nasution & Rossanty (2018) which states that Halal Logo increases Purchase Intention. This difference may be due to previous studies carried out in different ways, where the variable Religiosity is not separated from Halal Logo. But this result is supported by research conducted by Rajagopal et al. (2011); Alam & Sayuti (2011) who said halal awareness, halal certification and the concept of halal marketing towards the purchase intention of halal products were based on high and low consumer religious beliefs.

The results of test the second hypothesis (H2) found that the data supports the hypothesis because of the results of the Anova Univariate test on Halal Logo variables which is moderated by Intrinsic Religiosity get significant results both for groups of respondents with high or low Intrinsic Religiosity. These results support previous research conducted by Soon & Wallace (2017); Newaz et al. (2016) which states that Religiosity increases Purchase Intention. This is directly proportional to respondents who have Intrinsic Religiosity for their

awareness and state that they prefer products with the Halal Logo because the quality is more guaranteed.

The results of test the third hypothesis (H3) found that the data did not support the hypothesis because from the results of the Univariate Anova test on the Halal Logo variable which is moderated by Extrinsic Religiosity the results were not significant both for groups of respondents with high or low Extrinsic Religiosity. These results do not support previous studies conducted by Ajzen (2001); Wilson & Grant (2013); which says that someone will buy a product based on the pressure of their reference, and will act like the pressure group. This difference may be due to previous studies carried out in different ways where Religiosity is not separated in detail between Intrinsic and Extrinsic. In addition, even though environmental factors can affect a person, but stronger religious observance comes from within a person.

CONCLUSION

There are three results found in this study. First is Halal Logo does not increase Purchase Intention. This means the first hypothesis is not supported, which means Halal Logo that not moderated by Religiosity cannot affects Purchase Intention. Muslim consumers will only pay attention for halal logo when they buy a product if they supported by their Religiosity. Second result is Halal Logo which is moderated by Intrinsic Religiosity increases Purchase Intention. It Means second hypothesis is supported, which means Halal Logo which is moderated by Intrinsic Religiosity affects Purchase Intention. Muslim Consumers that have religiosity from within their own will buy a halal product which is indicate by halal logo. Third result found is Halal Logo which is moderated by Extrinsic Religiosity do not increase Purchase Intention. It means the third hypothesis is not supported, which means Halal Logo which is moderated by Extrinsic Religiosity do not affects Purchase Intention. Muslim consumers who like to do religious activities and gather with devout Muslims only to show their level of faith, don't pay too much attention to the halal logo in the product packaging.

Furthermore, this study found more details result that can be describe as first is specifically for groups of respondents who have a high perception of Halal Logo, respondents with low Intrinsic Religiosity have higher Purchase Intention than the group of respondents with high Intrinsic Religiosity, second result found is specifically for groups of respondents who have a low perception of Halal Logo, respondents with low Intrinsic Religiosity have a higher Purchase Intention than the group of respondents with high Intrinsic Religiosity. Third result found is specifically for the group of respondents with low Intrinsic Religiosity, Respondents who have a high perception of Halal Logo have a higher Purchase Intention than the group of respondents who have a low perception of Halal Logo. Fourth result found is specifically for groups of respondents with low Extrinsic Religiosity, respondents who have a low perception of Halal Logo have a higher Purchase Intention than the group of respondents who have a high perception of Halal Logo. Fifth result found is specifically for groups of respondents who have a high perception of Halal Logo, respondents with low Extrinsic Religiosity have higher Purchase Intention than groups of respondents with high Extrinsic Religion. And for the last result is specifically for groups of respondents who have a low perception of Halal Logo, respondents with low Extrinsic Religiosity have higher Purchase Intention than the group of respondents with high Extrinsic Religiosity.

This study has several limitations that can be considered for further study. This study only carried out in Jakarta for all types of halal products and respondents came from Muslim consumers who have an age range between 17 and 40 years. This study uses an online questionnaire as a measuring instrument with the aim of saving time and effort. There is a possibility that respondents fill out the questionnaire with answers that do not match the actual conditions or only fill in based on ideal conditions so that the measurements used do not reflect the actual variables. On the other hand, this study only uses Halal Logo variables, Religiosity and Purchase Intention.

For further study, this research is still very limited, because it is only carried out in Jakarta and respondents come from Muslim consumers who have an age range between 17 and 40 years. This research is also limited to testing the effect of moderating Religiosity on

Halal Logo on increasing Purchase Intention. Therefore, researchers suggest for the development of further research by adding other variables that can affect Purchase Intention. There are many other variables that can affect Purchase Intention, so the results obtained can be more in-depth.

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THE SUSTAINABILITY STATUS ANALYSIS OF PARI KEMBANG (DASYATIS KUHLII) RELATED TO CANTRANG FISHING RESULTS WITH RAPFISH METHOD IN LAMONGAN OF EAST JAVA, INDONESIA

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ABSTRACT

For the last decade, rays fishery in Lamongan suffers a decline in both amount and size. Lamongan is one of districts (*Kabupaten*) in East Java, Indonesia, serving as East Java's largest producer of Pari Kembang (blue spotted rays), with Brondong National Fishery Ports (PPN Brondong) as its central. This research aims to identify the sustainability of Pari Kembang fish caught by Cantrang (Danish trawl) fishing method. This research was carried out for 3 months from August 2018 to October 2018. The research method used in this research to determine the sustainability status of Rays fishery was Rapid Appraisal Fisheries (RAPFISH) method. The respective results of all dimensions researched: ecological index is 51.87, economic index is 44.71, social index is 44.67, technological index is 41.86 and ethical index is 45.06. The multidimensional sustainability level of ray fish conservation in Lamongan is fairly low with 47.57 index.

KEY WORDS

Blue spotted rays, sustainability, Danish trawl, RAPFISH, Lamongan.

Rays is one of sustainable fisheries in Indonesia. Rays fishery in Indonesia has various types of ray fish and the largest fishery product is Pari Kembang (Blue spotted rays). This fish live in tropical and subtropical seas. In Indonesia, Pari Kembang is mainly found in Java Sea and southern part of Java. Indonesia is one of largest ray fish producer in the world (Utami, et al., 2014). Brondong National Fishery Port (PPN Brondong) is a fishery port which operates regionally. Deprived fishermen are forced to exploited certain fishes regardless overfishing condition and environmental damage. Fauzi (2005) states that poverty suffered by fishermen in the coast may indirectly disturb the food chain in the seas, resulting in the decline of fishery products. Deprived fishermen are both the victim and the one who damage the environment. Therefore, the improvement of fishermen income can preserve the sustainability of fishery products.

In East Java, there are two national ports. One port is in the north part of East Java and the other one is in the south. PPN Brondong in Lamongan is the one at the north. While PPN Prigi in Trenggalek is the one at the south. Lamongan is the greatest producer of ray fish. Rays fishery production in Lamongan, 2013-2017 period has reached 4,787 tons (PPN Brondong 2017) Rays fishery production in Trenggalek, 2013-2017 period has reached 19.629 tons (PPN Prigi 2017). In the last decade, there is a significant decline in the production of rays' fishery.

This decline can be caused of several factors. The cause are (1) overfishing, (2) the lower quality of the sea waters chemically, physically and biologically. The decrease of fishery is frequently happened especially in the coast. Adam *et al.*, 2013 states that fishery results are relied on the sea's fishery resources in the fisheries cultivation area (WPP). The other possible reason is overfishing in a certain amount of time, overfishing occurs when there is a significant size decrease of the caught fish (Dudley& Simpfendorfer, 2006 in Fahmi, 2008).

Pari Kembang which has been caught is varied in size. All the fish are for sell. There is no selective fishing to Pari Kembang fish, affecting its sustainability significantly. If we let the condition as it is right now, Pari Kembang will surely go extinct. There is also no further

consideration that their next generation may not be able to see Pari Kembang fish. They believe that we should use available resources as much as we can for our current needs.

The management of sustainable fishery is not only to preserve the fish (as resources) for economic purposes but also it is for the fishermen themselves (sustainable community) that is supported by the existence of institution managing the quality of rules, policy and organization to preserve sustainable biology, economy and community (Adrianto, 2004) The new paradigm of sustainable fishery stated by Charles (2001) explores various aspects, namely: First is ecological sustainability, such as preserving fish stock as well as increasing capacity and the quality of ecosystem. The second is socio-economical sustainability, by taking attention to the sustainable economic condition of the business actors.

Manage or improve the economic level of the community is the next priority. The third is the sustainability of community, including the prosperity of the community. Lastly, the sustainability of institution which manage healthy financial and administration aspects as the third requirement of sustainable development.

LITERATURE REVIEW

According to the evolution theory, ray fish are derived from shark family that adapt as bottom dweller. The pressure in the bottom of the sea had shaped shark into ray fish (flat form) (Manik, 2003) Based on Nelson, 1976 in Manik, 2003, ray fish are classified into:

- Kingdom: Animalia;
- Filum: Chordata;
- Subfilum: Chondrichtyes;
- Subclass: Elasmobranchii;
- Familiy: Dasyatidae;
- Species: *Dasyatis kuhlii*.

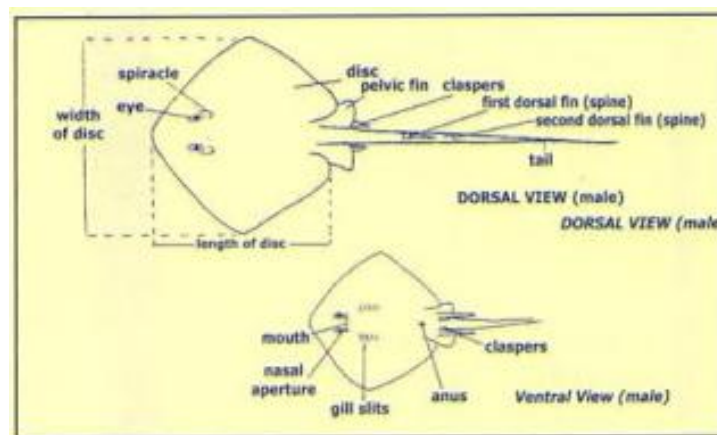


Figure 1 – Rays' morphological shape (Source: <http://mukhtar-api.blogspot.com>)



Figure 2 – Pari Kembang Fish / Blue spotted rays (Source: <http://fauna-of-indonesia.blogspot.com/2013>)

The suitable environments for ray fish to live are seas with narrow coast, mud and sand substrate, reef, lagoon, bay or estuary. Rays can live in the deep sea up to 2,000 m below the surface. Rays breed in ovoviviparous manner (laying eggs and giving birth) that produces 4-6 young ray fish (Hart, 1973).

The development of sustainable fishery has 3 main aspects namely ecology, economy and social. The development of fishery economically is considered sustainable, if the fishery sector is able to produce sustainable fish products (on continuing basis), giving prosperity to business actors as well as tax and foreign exchange for the country. The development of fishery ecologically is considered sustainable, if we can preserve the stability of the fish stock availability, keep the resources from overfishing, and manage the waste accordingly. The development of fishery socially is considered sustainable, if the basic needs (food, clothing, health and education) of the fishermen are fulfilled, income and job field are distributed equally, gender equality and managed social conflict.

METHODS OF RESEARCH

This research was conducted in PPN Brondong, Lamongan, East Java. Its coordinates is 06^o52'11.64" to 06^o52'09.29" latitude and 112^o17'15.06" to 112^o17'56.17" longitude. This research was conducted for 3 months, from August - October 2018.

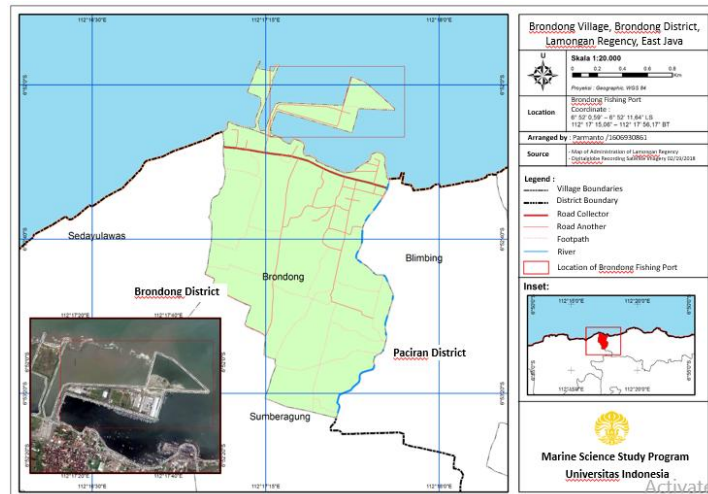


Figure 3 – Research Location

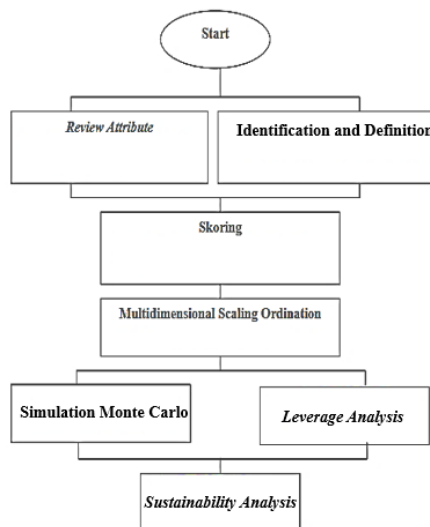


Figure 4 – The implementation of RAPFISH (Source: Alder et al. 2000)

Sustainability aspects include ecological, social, economic, ethical and technological aspects with RAPFISH questionnaire tool. Questioner was done by direct interview to 26 respondent including, PPN Brondong, Lamongan Marine Affairs and Fisheries Department, PSDKP Supervisory Working Unit, ship owner, ship captain, fishermen community's leader, and academics. A low stress value indicates a good result which is more relevant to reality, whereas a high S value indicates the opposite. In RAPFISH method, a good stress value is ranging between 0.25 ($S < 0.25$).

Table 1 – The sustainability criteria of fishery development

Index/Criteria	Category
0-25	Unsustainable
> 25-50	Less Sustainable
> 50-75	Fairly Sustainable
> 75-100	Sustainable

Source: Susilo, 2003.

RESULTS AND DISCUSSION

Rays Fishery in Lamongan is carried out by local fishermen and only 1 ship that come from Surabaya. Some of them do the fishing in one day (one day fishing) and some of them may fish for maximum 21 days. In Fridays, local fishermen do not go to sea to fish. Ray fish fishing by local fishermen in Lamongan use Cantrang (Danish trawl) or dogol.



Figure 5 – Ship with Cantrang

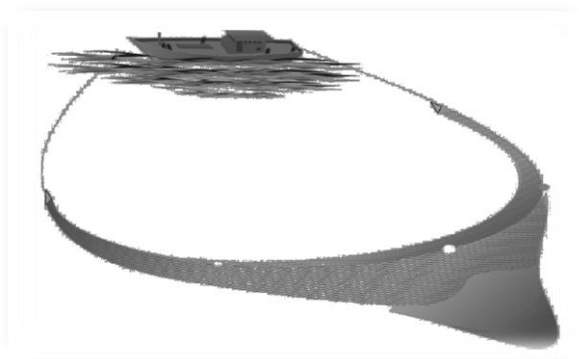


Figure 6 – Cantrang fishing tool

The main function of Cantrang is catching demersal fish. It means that Cantrang is designed to catch bottom dweller (demersal) and shrimp and Petek fish, Biji nangka fish, gulamah fish, kerapu fish, sebelah fish, stingray, cucut fish, octopus, bloso fish and various kind of shrimps (Subani and Barus 1989). The main parts of this tool are pouch, body, wings or feet, headline rope, warp wires, floats and weights. Cantrang nets are made of polyethylene.

The size of net in the pouch is 1 inch. The body is made of *polyethylene* and the size of the net is 1.5 inch minimum. The wing is made of *polyethylene* and the size of the net is 5 inch minimum. Weights are made from tin or other material. Warp wires are made of *polyethylene*. Warp wires are 1.000 meters long (left and right, 500 m respectively) yielding a wide catching range. The size of Cantrang and warp wires used are determined by the ship's size. Most ships with Cantrang in Lamongan are 13 meters long, 6.5 meters wide and 1.7 meters tall with 21-28 GT tonnage.

Fishing tool in Lamongan are varied. Some of them are dogol/cantrang, payang, rawai, gilnet, purse seine, and trammelnet. Cantrang is the most common fishing tool in Lamongan. Cantrang is actually illegal in Indonesia; it is prohibited by Ministry of Marine Affairs and Fisheries. The rule is stated in Ministerial Regulation of Marine Affairs and Fisheries Number 2/Permen-KP/2015 concerning The Prohibition of Trawls and Seine Nets Fishing Tools in Republic of Indonesia's Fisheries Cultivation Area.

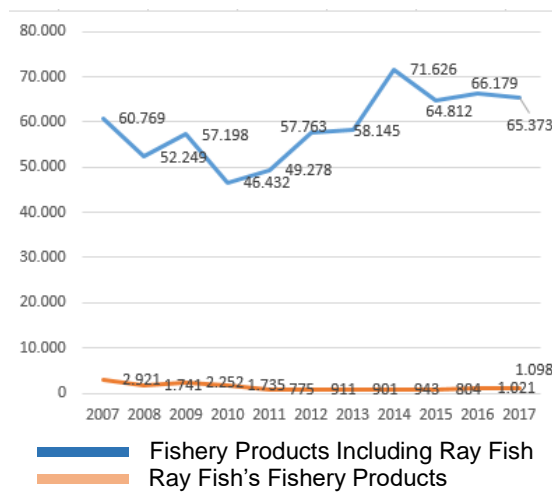


Figure 7 – Fishery production in Lamongan 2007 - 2017, landed at PPN Brondong (2017)

Figure 7 depicts fishery production (blue line) in Lamongan and rays fishery (red line). It also records the highest fishery production, which is in 2014 that reaches 71,626 tons, while the lowest production is in 2010 that only reaches 46,432 tons. In addition, the highest rays fishery is in 2007 that reaches 2,921 tons, while the lowest production is in 2011 that only reaches 775 tons. The fluctuation of the average fishery production is caused by climate changes that directly affect fishery activities.

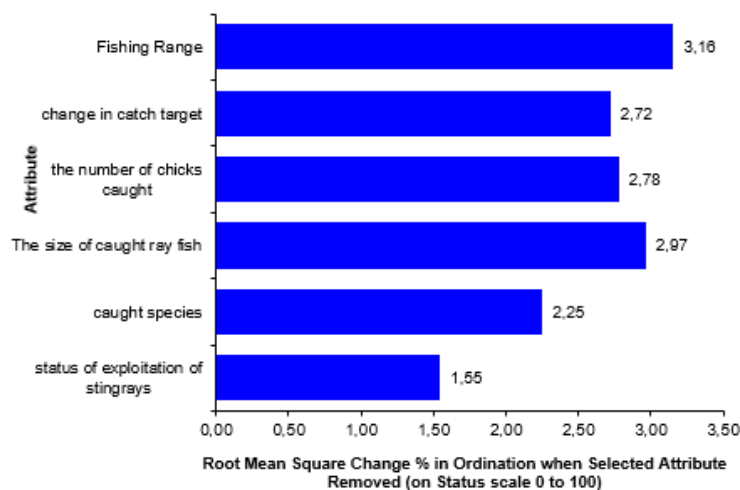


Figure 8 – Attribute analysis results of ecological dimension

To determine the sustainability of rays fishery in Lamongan, we conducted an analysis using RAPFISH method with 5 (five) dimensions namely ecology, economy, technology, social status, and ethic. By analyzing all the five dimensions, we calculated sustainability index of rays' fishery in Lamongan.

Figure 8 depicts the main factors of ecological dimension: fishing range; the size of caught ray fish.

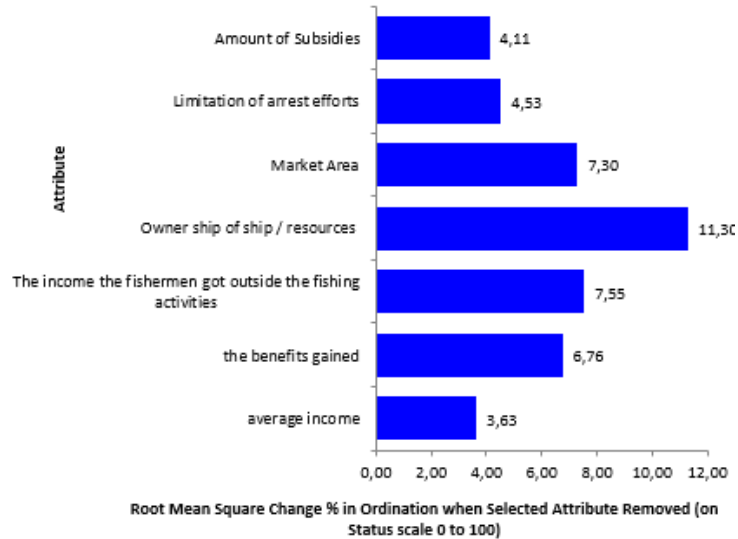


Figure 9 – Attribute analysis results of economic dimension

Figure 9 depicts the main factors of economic dimension: ownership of ship / resources; the income the fishermen got outside the fishing activities; market area.

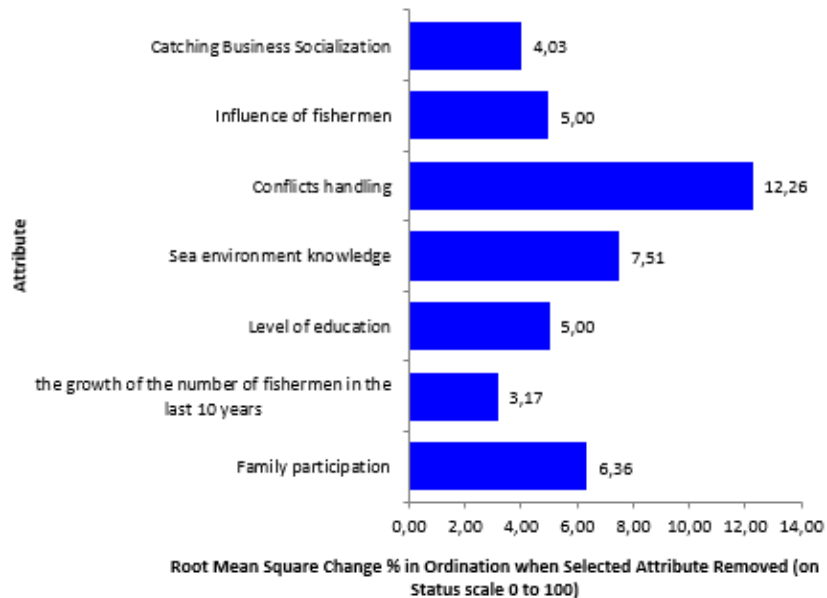


Figure 10 – Attribute analysis results of social dimension

Figure 10 depicts the main factors of social dimension: conflicts handling; sea environment knowledge; family participation.

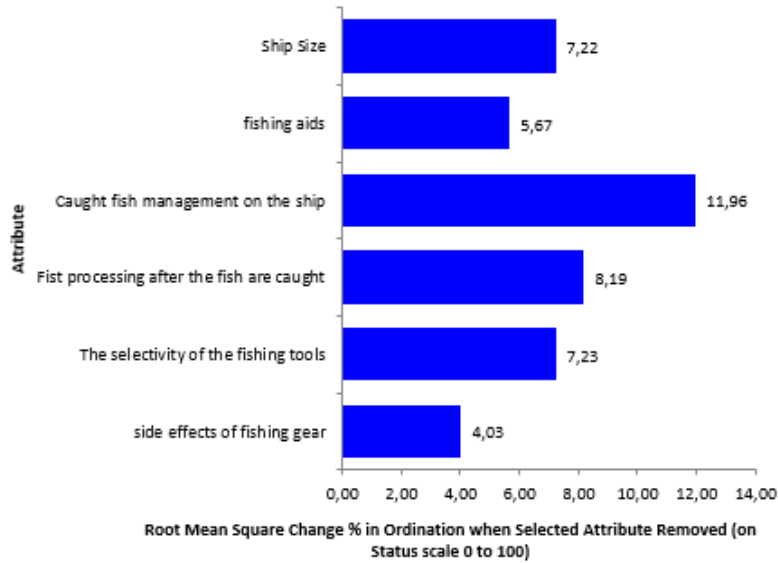


Figure 11 – Attribute analysis results of technological dimension

Figure 11 depicts the main factors of technological dimension: caught fish management on the ship; fist processing after the fish are caught; the selectivity of the fishing tools.

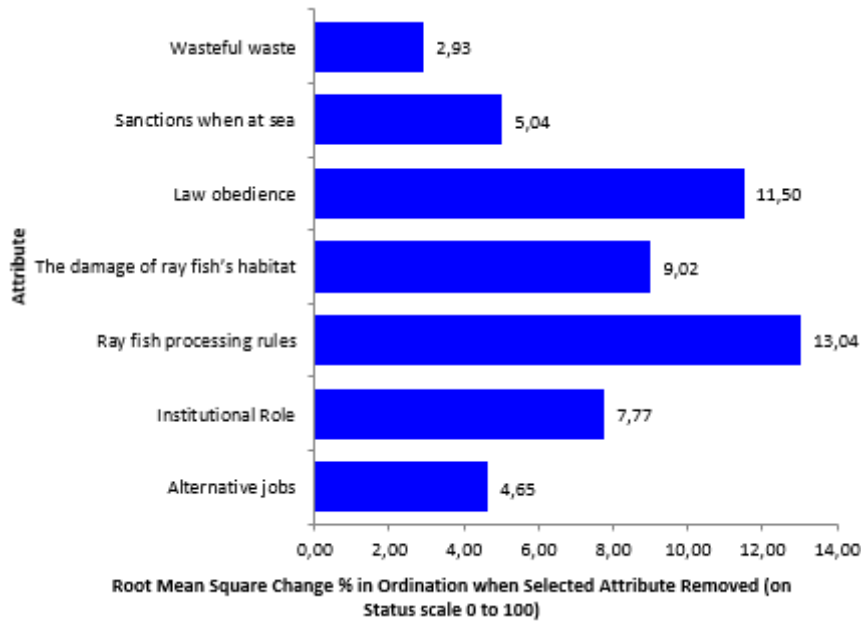


Figure 12 – Attribute analysis results of ethical dimension

Figure 12 depicts the main factors of ethical dimension: ray fish processing rules; law obedience; the damage of ray fish's habitat.

Table 2 – Analysis results of RAPFISH and Monte Carlo

No	Dimension	RAPFISH Analysis	Monte Carlo	The differences
1	Ecology	51.87	51.25	0.62
2	Economy	44.71	44.61	0.10
3	Social	44.67	43.72	0.95
4	Technology	41.86	39.99	1.87
5	Ethic	45.06	44.80	0.26

Monte Carlo's analysis related to condition and status of ray fish sustainability in Lamongan with 90% confident level shows similar result with RAPFISH analysis. It can be concluded that analysis mistakes can be minimized in scoring each attribute. There is also small variant in scoring caused by the difference of opinions. The difference of index values between RAPFISH analysis result and Monte Carlo are depicted in Table 2.

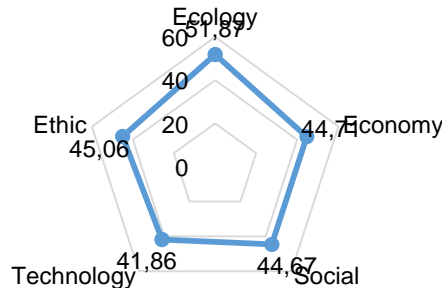


Figure 13 – Ray fish’s sustainability status diagram

The next step is pairwise comparison test. According to Budiharsono (2005), sustainability status of fishery cannot be determined by identifying the average value of the five dimensions used as indicator, but by conducting pairwise comparison. The use of pairwise comparison matrix (coupled matrix) to yield relative as well as alternative weight between criteria. One criteria is compared to the other concerning its relation to the research objective (Saaty, 1986).

Pairwise comparison calculation is done by weighing the selected weight by experts who excel in the cultivation of fisheries. Pairwise comparison is had to done since each dimension has different weight. Acquired calculation result, we have weighed score as depicted in Table 3.

Table 3 – Index values of multidimensional sustainability

No	Dimension	Weighed weight	Index Values	Weighted Index Values
1	Ecology	0.440	51.87	22.82
2	Economy	0.283	44.71	12.65
3	Social	0.112	44.67	5.00
4	Technology	0.121	41.86	5.07
5	Ethic	0.045	45.06	2.03
Sum				47.57

Table 4 – The analysis result of stress value RAPFISH and coefficient of determination

No	Dimension	Index Values	Category	Stress	R ²
1	Ecology	51.87	Fairly Sustainable	0.19	0.90
2	Economy	44.71	Less Sustainable	0.19	0.90
3	Social	44.67	Less Sustainable	0.19	0.90
4	Technology	41.86	Less Sustainable	0.19	0.90
5	Ethic	45.06	Less Sustainable	0.19	0.90

We can see that weighed result from the experts who excel in the cultivation of fisheries yield 47.57 weighted index values which is >25 - 50 range. This means that rays fishery with cantrang in Lamongan is classified as less sustainable resources. RAPFISH analysis result shows that all of the attributes assessed to rays sustainability status are fairly accurate. This can be identified by the stress value which is between 0.19-0.20 with the value of coefficient of determination (R²) 0.90 for all assessed dimension. The value shows that the attributes used to determine sustainability status of each dimension are fairly relevant, since the stress value is smaller than 25% as shown in the table.

CONCLUSION

Multidimensional sustainability status of rays' fishery in Lamongan is classified as less sustainable resources. Two main factors of each dimension are as follows: ecological dimension (fishing range, the size of caught ray fish), economic dimension (ship ownership, other income outside fishing), technological dimension (fish processing on the ship, selectivity of the fishing tools), ethical dimension (ray fish cultivation rules, law obedience).

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**THE ROLE OF PROFITABILITY IN MEDIATING THE EFFECT OF LEVERAGE,
CORPORATE SIZE, AND GOOD CORPORATE GOVERNANCE ON COMPANY VALUES
IN MANUFACTURING COMPANIES OF INDONESIA STOCK EXCHANGE**

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ABSTRACT

Company performance is an important factor for investors that is used as a reference in making investment decisions. One of the considerations of investors in decision making can be seen from the value of the company. While the value of the company can be influenced by several factors including leverage, company size, GCG and profitability. The population of this study is manufacturing companies listed on the Stock Exchange for the period 2013-2018. The sample used in this study amounted to 30 companies using purposive sampling method. This study uses path analysis techniques (Path Analysis) and Sobel test. The results of this study found that leverage, size and profitability had a positive and significant effect on firm value. GCG has a negative and significant effect on company value. The results of the Sobel test in this study revealed that profitability is able to mediate leverage and GCG, but the different results that profitability still cannot mediate the size of the company.

KEY WORDS

Firm value, profitability, leverage, business.

Competition in the manufacturing industry is increasing so that each manufacturing company can improve its performance in order to achieve its goals. Every company certainly has a purpose. The purpose of establishing a company is to maximize the value of the company. The success of achieving these goals is an achievement for the management or it can be said that the company has a good performance. The higher the value of the company, the greater the investor's investment in the company. This achievement or performance assessment of a company will later be used as a basis for decision making. One way to find out the company's performance is sourced from financial statements. One of the objectives of the company according to the theory of the firm is to maximize the prosperity of the owners or shareholders through increasing the value of the company (Hermuningsih, 2013).

The value of the company is very important because of the high value of the company will be followed by the high prosperity of shareholders (Brigham, 2013). The higher the stock price the higher the value of the company. High corporate value is the desire of the owners of the company because with high value shows the prosperity of shareholders is also high. The wealth of shareholders and companies is presented by the market price of shares which is a reflection of investment decisions, funding (financing), and asset management. The value of the company according to (Brigham, 2013) can be measured by price to book value (PBV), which is a comparison between the price of shares and the book value per share. PBV can be interpreted as the result of a comparison between the stock market price and the stock book value. A high PBV will increase market confidence in company prospects and indicate high shareholder prosperity (Hermuningsih, 2013). Several factors can influence company value based on previous research conducted by (Hermuningsih, 2013), including profitability, leverage, company size, and good corporate governance (GCG). This was also supported by several previous studies (Grill and Obradovich, 2012 Prasetyorini, 2013 Maryam, 2014), Leverage (Cheng and Tzeng, 2011 Maryadi et al. 2012 Hermuningsih 2013), Company Size (Nurhayatin 2013), Good Corporate Governance (Agustia Dian 2013, M. Maria 2013), and Profitability (Grill and Obradovich, 2012 Hermuningsih, 2013).

The signal theory that supports this research on variable leverage, company size, and good corporate governance (GCG) is a signal theory (Signaling Theory). Signalling theory according to (Brigham and Houston 2013: 185) signals or signals is an action taken by the company to provide guidance for investors about how management views the company's prospects. This signal theory is based on the assumption that managers and shareholders do not have access to the same company information. Certain information is only known by managers, while shareholders do not know the information, so there is no symmetry of information between managers and shareholders. The main assumptions of this signal theory provide space for investors to know how the decisions to be made relate to the value of the company. The leverage ratio, profitability, company size, and GCG show changing values, this automatically provides information to investors in giving an assessment of the value of the company.

Based on the signal theory, profitability is one of the important information for investors who are expected to be able to analyze the development of corporate profits. The more profitable the company, it will provide a positive signal for investors so they can provide benefits from their investments. The more investors invest their funds in the company, then it will increase the value of the company. Profitability or profit is income minus expenses and losses during the reporting period. Profitability according to Brigham (2013), the ability of a company to earn profits for a certain period. Investors invest in a company to get a return. The higher the company's ability to make a profit, the greater the return expected by investors, so that it makes the value of the company better, this proves that profitability can affect the value of the company. This is also supported by several previous studies related to profitability with firm value, according to Hermuningsih (2013) that profitability has a positive and significant effect on firm value. Unlike the research conducted by Novianto (2013), it shows that profitability does not have a significant effect on firm value.

Profitability in this study is considered capable of mediating leverage, company size, and good corporate governance, this is also supported by several studies conducted by Hamidy (2015) showing the results that profitability is capable of mediating leverage, against companies, but different from research by Pratama (2016) that profitability is not able to mediate the influence of leverage, firm size on firm value. Based on the results that have not been consistently found in previous research on profitability against firm value, as well as the factors that influence company value, this study was conducted to reexamine by adding profitability as a mediating variable. Profitability measurement (Brigham, 2013) in this study is proxied through return on assets (ROA). Return on assets (ROA) is a measure of a company's effectiveness in generating profits by utilizing assets it has. ROA is measured by dividing net income after tax and total assets.

The second factor, which influences firm value according to (Brigham, 2013) is leverage. Leverage is a ratio that measures the ability of debt both long-term and short-term to finance company assets. According to Yuyetta (2017), leverage is an effect arising from the use of debt as a source of corporate funding, both short-term funding sources and long-term funding sources. The lower this ratio, the higher the level of corporate funding provided by shareholders. Every company has a different debt policy. Company value can also be influenced by the size of the leverage generated by the company. Leverage can be said that a financial ratio that measures how many companies are financed by using debt (Wiagustini, 2012: 76). The use of debt is expected to get a positive response from outside parties. So debt is a sign or positive signal to increase company value in the eyes of investors (Hanafi, 2013: 316). The use of too much debt is not good because it is feared that there will be a decrease in profits earned by the company. That is, the higher the value of leverage will describe the investment that is at high risk, while the small leverage will show that the investments made are at small risk (Analisa, 2011). Leverage is a picture of the use of debt of a company to finance the company's operations. Management of leverage is very important because decisions in the use of high debt can increase the value of the company due to a reduction in income tax

Based on the signal theory, the leverage variable is one of the factors that can provide important information for investors. Managers have confidence that the company's prospects

are good, will increase stock prices, of course, managers want to communicate this to investors. Managers can use more debt, which later acts as a more trusted signal. Companies that increase debt can be seen as companies that have better prospects in the future. Investors are expected to capture the signal, a signal that indicates that the company has prospective prospects in the future. One of the proxy measures for leverage is the Debt to Equity Ratio (DER).

Based on the explanation above that debt is a sign or positive signal from the company. Leverage has a positive effect on firm value, this has been supported by several studies. Research conducted by Dewi and Tarnia (2013) that leverage has a positive effect on firm value, whereas research conducted by Cheng and Tzeng (2013) states that leverage has a positive effect on company value and is supported by Maryadi (2013), but according to Mahendra, Artini, and Suarjana (2013) leverage has a negative effect on firm value. This statement is also supported by the research of Odongo, Leonard and Mocketeli (2014) which states that leverage has a significant negative effect on firm value.

The third factor, which affects the value of the company according to (Brigham, 2013) is the size of the company (size). The size of the company is the size and size of a company that can be seen through the amount of equity, sales and total assets of the company. The company's larger total assets can illustrate that the company has reached its maturity stage. Companies that are already in the middle stage, the company has positive cash flow and is expected to achieve profitable aspects in a relatively long period of time. Rai and Merta (2016) say that the size of the total assets and capital used by the company is a reflection of the size of the company. The size of the company will affect the ability to bear the risks that may arise from various situations faced by the company. Large companies have lower risks than small companies. Large companies have better control of market conditions, so they are able to face economic competition. In addition, large companies have more resources to increase the value of the company because they have better access to external information sources compared to small companies (prasetyorini, 2013).

Company size contributes to the level of investor confidence. The bigger the company, the better it is known by the community, which means it is easier to get information that will increase the value of the company. Large companies that have large enough assets can attract investors to invest in the company. Company size is seen from the total assets owned by the company, which can be used for company operations. Proxies are used on variable size companies using Natural Logarithms (Ln) of total assets. The amount of the total assets of each company varies even has a large difference so that it can cause extreme values. Based on the explanation above that the value of the company is influenced by the size of the company, this is also supported by several previous studies. The research that has been conducted by Prasetyorini (2013) in the basic industrial and chemical sectors, gives the result that the size of the company has a positive effect on firm value. Increased company value can be characterized by total assets that have increased and greater than the amount of debt.

The fourth factor, which affects the value of the company according to (Brigham, 2013) is Good Corporate Governance (GCG). Good Corporate Governance (GCG) is a system, process, and set of rules that regulate relations between related parties (stakeholders) especially in the narrow sense of the relationship between shareholders, the board of commissioners, and the board of directors for the achievement of company goals (Juniarti, 2013). The principles of Good Corporate Governance include 5 (five) principles, namely transparency, independence, accountability, responsibility, fairness. The main parties in the company's governance are shareholders, management, and the board of directors. Other stakeholders include employees, suppliers, customers, banks, and other creditors, regulators, the environment and the community.

Good Corporate Governance, in this case, is a factor that can affect the value of the company. According to Agustina (2013) GCG can affect the value of the company, including: (1) the high awareness of the company to implement good corporate governance (GCG) as a need, not just compliance with existing regulations, (2) company management interested in the long-term benefits of implementing good corporate governance (GCG), (3) increasing

share ownership by management and institutional investors causes greater pressure on companies to implement good corporate governance, (4) the existence of the board of commissioners and audit committees in companies can monitor companies in implementing good corporate governance (GCG), (5) cultural elements that develop in the national business environment strongly support the development of the application of good corporate governance (GCG). Several previous studies that supported that good corporate governance (GCG) had an effect on the value of the company, Retno and Priantinah (2013) that good corporate governance has a significant positive effect on firm value. Unlike the research conducted by Sari and Riduan (2013) that the variables of good corporate governance (GCG) have a significant negative effect on firm value.

This research was conducted in manufacturing companies in the period 2013-2017, there is a phenomenon in manufacturing companies in Indonesia regarding the value of the company, with the increase in profitability seen from the increase in company net income each year from 2013-2017, but the increase in profits does not automatically increase the value of the company. This shows the profitability of manufacturing companies that from year to year continues to increase; this is presented in the following table:

Table 1 – Average Company Value Ratio in Manufacturing Companies for period of 2013-2015

Period	Leverage	Company Size	Profit	Company Value
2013	0.93	14.83	8.64 %	3.45
2014	0.93	14.84	8.63 %	3.45
2015	0.93	14.85	8.66 %	3.46
2016	0.92	14.85	8.70 %	3.47
2017	0.92	14.86	8.72 %	3.47

Source: www.idx.co.id, 2018.

Based on Table 1, obtained from www.idx.co.id proves that leverage, company size, profitability in manufacturing companies has increased from year to year, but this does not affect the increase significantly in the value of the company. Based on the above phenomena and previous studies and different results, the researchers want to reexamine the influence of leverage, company size, GCG on firm value and profitability as a role in mediating.

LITERATURE REVIEW

Brigham and Daves (2014: 19) company value is money that investors are willing to spend when the company is sold. Corporate value can also be interpreted as a certain situation that has been achieved by the company after going through an activation process for several years. Olivia Tjia & Lulu S. (2012) signal theory is a theory that discusses the encouragement of companies to disclose information to external parties because there is information asymmetry between management and external parties. To reduce the asymmetry, companies need to disclose information that is owned, both financial and non-financial information. Profitability is the result of net income from a series of policies and decisions that show the combined effect of liquidity policy, asset management and debt management on operating results (Brigham and Daves, 2014). Debt to Equity Ratio (DER) is one of the leverage ratios that describe the extent to which the owner's capital can cover debts to external parties (Sofyan Syafri Haraphap, 2013: 303). The smaller the ratio the better. For the security of outside parties the best ratio if the amount of capital is greater than the amount of debt, but for shareholders, it should be large. The size of the company can be expressed in total assets, sales and market capitalization. The greater the total assets, sales and market capitalization, the greater the size of the company. These three variables are used to determine the size of the company because it can represent how big the company is. The greater the assets, the more capital invested, the more sales, the more money will be circulated and the greater the market capitalization, the greater will be known in the community. In general, there are five basic principles of good corporate governance, namely Transparency, Accountability, Responsibility, Independence, and Fairness.

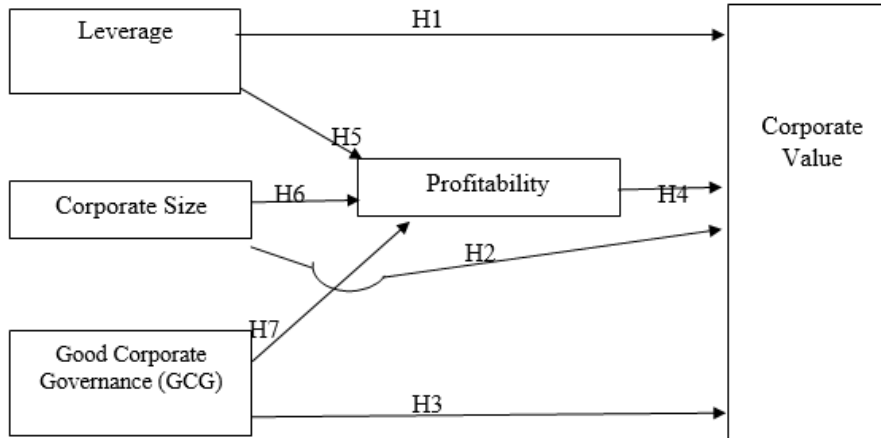


Figure 1 – Research Framework

- H1: Leverage has a positive effect on company value;
 H2: Company size has a positive effect on firm value;
 H3: Good corporate governance has a positive effect on company value;
 H4: Profitability has a positive effect on company value;
 H5: Leverage has a positive effect on profitability;
 H6: Company size has a positive effect on profitability;
 H7: Good Corporate Governance has a positive effect on profitability;
 H8: Leverage has a positive effect on firm value mediated by profitability;
 H9: Company size has a positive effect on firm value mediated by profitability;
 H10: Good Corporate Governance has a positive effect on company value mediated by profitability.

METHODS OF RESEARCH

This study uses an associative quantitative approach. This associative research design aims to determine the relationship between variables, as well as causality. The type of associative research was chosen because the objectives to be achieved included efforts to explain the relationship and the influence that occurred between the variables studied by collecting data through secondary data using the annual financial statements of companies listed on the Indonesia Stock Exchange accessed through the website address www.idx.co.id

The time of research began in 2013 to 2017 in manufacturing companies listing on the Indonesia Stock Exchange. This research was begun to measure the leverage variable, company size, good corporate governance (GCG) on company value mediated by profitability. The research process is a plan and structure of investigations that are made in such a way as expressed in the hypothesis, each - each will be described in the appropriate indicator and then becomes an item in the instrument research Data is collected through observations followed by test validity and reliability.

The measurement method that is in accordance with the design of this study is Path Analysis. Path analysis used in this study is to use regression analysis to estimate causality between variables (causal models) that have been predetermined based on theory.

The population in this study are all manufacturing companies listed on the Indonesia Stock Exchange. The total population is 30 manufacturing companies; the sampling technique used is purposive sampling. The criteria used in this study are:

- Manufacturing companies listed on the Indonesia Stock Exchange in 2013-2017;
- Manufacturing companies publish complete financial statements from 2013-2017 in a row;

- Manufacturing companies that have positive profitability in the 2013-2017 study period, positive ROA data collection is expected to avoid outlier results.

Based on these criteria, the number of samples from this study can be explained in Table 2 below:

Table 2 – Sampling Process

Criteria	Value
Manufacturing companies listed on the Indonesia Stock Exchange in 2013-2017.	109
Manufacturing companies publish complete financial statements from 2013-2017 in a row.	80
Manufacturing companies that have positive ROA, complete GCG reports and successively in 2013-2017.	30
From 2013-2017	5 Year

Source: *www.idx.co.id*, 2018.

In Table 2 it can be seen that the sample in this study amounted to 30 companies.

RESULTS OF STUDY

Descriptive statistics of research data are used to provide information about the characteristics of variable disclosure leverage, company size, good corporate governance (GCG), profitability, company value which includes the average value, maximum value and standard deviation. Descriptive statistics of this research variable are presented in Table 3.

Table 3 – Results of Statistical Descriptive Analysis

		Statistics				
		Ln_Aset	DER	GCG	ROA	PBV
N	Valid	150	150	150	150	150
	Missing	0	0	0	0	0
Mean		14.56600	.93887	23.43000	6.07747	1.34453
Std. Error of Mean		.126249	.087984	.103952	.322108	.096822
Median		14.55000	.64500	24.00000	6.11000	.90500
Mode		14.550	.900	24.000	7.380	1.550
Std. Deviation		1.546232	1.077578	1.273148	3.945005	1.185816
Variance		2.391	1.161	1.621	15.563	1.406
Range		6.600	7.320	4.500	18.750	5.600
Minimum		11.800	.080	20.000	.090	.010
Maximum		18.400	7.400	24.500	18.840	5.610
Sum		2184.900	140.830	3514.500	911.620	201.680

Source: *Data processed*, 2018.

Table 3 above shows that the Leverage variable has an average value of 0.93887 or 93.88%. The minimum value is 0.080 (8%) and the maximum value is 7.40 (7.4%). The average value shows that manufacturing companies in Indonesia have a fairly high risk of company liquidity. This value identifies that the company funding provided to pay the obligation is 90% of the total capital.

The size of the company has an average value of 14.56600 (14.57%). Minimum value of 11,800 (11.80%) and a maximum value of 18,400 (19.40%). The average value shows that manufacturing companies during the period 2013-2017 are still quite good in the development of the company which is seen at 14.57%.

The variable Good Corporate Governance (GCG) reveals that GCG has an average value of 23.43000 (23.43%). Minimum value of 20,000 (20%) and maximum value of 24,500 (24.50%). The average value shows that manufacturing companies during the period 2013-2017 for now, have implemented a good practice of good corporate governance at 23.43%. This shows an awareness that GCG practices in manufacturing companies still need to be improved.

The variable Good Corporate Governance (GCG) reveals that GCG has an average value of 23.43000 (23.43%). Minimum value of 20,000 (20%) and maximum value of 24,500 (24.50%). The average value shows that manufacturing companies during the period 2013-2017 for now, have a good practice of good corporate governance at 23.43%. This shows an awareness that GC practices in manufacturing companies still need to be improved.

Reporting on the results of the Structure 1 Regression analysis is used to determine the path coefficient and its significance from the influence of the Company Size, DER and GCG variables on PBV. Reporting the results of the analysis is presented in Table 4.

Table 4 – Reporting of the Structure 1 Regression Analysis

ROA = 0,148 Ln_Aset -0,405 DER 0,218 GCG
SE = 0,186 0,266 0,225
T = 2,030 -5,569 2,997
Sig = 0,044 0,000 0,003
R ² = 0,229; F = 14,448 Sig=0,000

Source: Data processed, 2018.

Reporting on the results of the Structure 2 Regression analysis is used to find out the path coefficient and its significance from the influence of Company Measure variables, DER, GCG, and ROA on PBV. Reporting on the results of the analysis is presented in Table 5.

Table 5 – Reporting of the Structure 2 Regression Analysis

PBV = 0,336Ln_Aset + 0,162 DER -0,139 GCG + 0,635 ROA
SE = 0,046 0,071 0,056 0,020
T = 5,638 2,508 -2,293 9,501
Sig = 0,000 0,013 0,023 0,000
R ² = 0,501; F = 36,405 Sig=0,000

Source: Data processed, 2018.

Based on the reporting of Regression 1 Analysis results in Table 5, a structural equation can be made and the path coefficients of the influence of firm size variables, DER and GCG on ROA are as follows:

$$ROA = 0,148 \text{ Ln_Aset} - 0,405 \text{ DER} + 0,218 \text{ GCG}$$

Based on the reporting of Regression Analysis 2 results in Table 6, structural equations and path coefficients can be made to influence the variables of firm size, DER, GCG, and ROA on PBV as follows:

$$PBV = 0,336 \text{ Ln_Aset} + 0,162 \text{ DER} - 0,139 \text{ GCG} + 0,635 \text{ ROA}$$

Based on the two equations above, it can be determined the magnitude of the existing path coefficients, both direct influence, indirect influence and total influence as presented in Table 6.

Table 6 – Direct and Indirect influence

Path	Direct effect	Indirect Effect	Total Effect
Company Size-PBV	0,336	0,094	0,43
Leverage – PBV	0,162	-0,257	0,095
GCG-PBV	-0,139	0,138	-0,001
ROA-PBV	0,635		0,635
Company Size -ROA	0,148		0,148
Leverage – ROA	-0,405		-0,405
GCG – ROA	0,218		0,218

Source: Data processed, 2018.

Based on the R^2 value of the 1st Structure Regression equation of 0.229 and R^2 Value of the Regression equation for Structure 2 the value of e_1 can be calculated and the Total Terminated value is as follows:

$$e_1 = \sqrt{(1 - 0,229)} = 0,878$$

$$e_2 = \sqrt{(1 - 0,501)} = 0,706$$

The Total Determination Coefficient values are as follows:

$$R^2 = 1 - (0,229 \times 0,706) = 0,838$$

The value of R^2 is 0.838, meaning that the information contained in the data is 83.8% can be explained by the model, while the rest is explained by other variables and errors.

Based on the results of data analysis in Table 4, it is obtained that the variable size of the company has a significant effect on ROA. This is indicated by the significance value of the T-test of 0.04 which is below 0.05. leverage and GCG variables have a significant effect on ROA, this is indicated by the results of the significance of the t-test for each variable below 0.05.

Based on the results of reporting the results of Regression Analysis Structure 2 in Table 5, it was found that the variables of leverage, company size, GCG, and ROA had a significant effect on PBV. This is indicated by the significance value of the T-test all below 0.05.

The significance test of the *indirect effect* was tested using the Sobel Test. The Sobel Test results from each indirect influence in the model are as follows:

Effect of leverage variables on firm value through profitability. Based on the reporting of the results of the regression analysis of structure 1 and structure 2 the values of $a = 0.405$; $S_a = 0.166$; $b = 0.635$ and $S_b = 0.020$. This value is included in the Sobel formula will get a Z value of 2.4314. The Z value of 2.4314 is greater than 1.96 so it can be concluded that profitability is able to significantly mediate the influence of leverage on firm value.

Effect of Company Size variables on firm value through Profitability. Based on the reporting of the results of the regression analysis of structure 1 and structure 2, a value of $a = 0.148$; $S_a = 0.186$; $b = 0.635$ and $S_b = 0.020$. If the value is entered into the Sobel formula, it will get a Z value of 0.7951. The Z value of 0.7951 is smaller than 1.96 so it can be concluded that profitability is not able to significantly mediate the influence of firm size on firm value.

Effect of good corporate governance (GCG) variables on firm value through profitability. Based on the reporting of the results of the regression analysis of structure 1 and structure 2, the values of $a = 0.218$; $S_a = 0.105$; $b = 0.635$ and $S_b = 0.020$. This value is included in the Sobel formula will get a Z value of 2.0707. The Z value of 2.0707 is greater than 1.96 so it can be concluded that profitability is able to significantly mediate the effect of good corporate governance (GCG) on firm value.

DISCUSSION OF RESULTS

Effect of leverage on company value on manufacturing companies listed on the Stock Exchange for the period 2013-2017. The results of this study were conducted at manufacturing companies in the period 2013-2017 that leverage has a positive effect on firm value. The results of this study are in line with the results of research that has been done previously by Cheng and Tzeng (2011), Maryadi, et al (2012), Ugwuanyi (2012) and Hermuningsih (2013) which states that leverage has a positive and significant effect on the value of enterprises. The positive direction means that the higher the leverage, the higher the value of the company obtained.

Effect of company size on the firm value on manufacturing companies listed on the Stock Exchange for the period 2013-2017. The results of this study indicate that the size of the company has a significant positive effect on the value of the company in manufacturing companies listed on the Stock Exchange for the period 2013-2017. The results of this study support the second hypothesis, namely the size of the company has a positive and significant effect on the value of the company in manufacturing listed on the Stock Exchange for the period 2013-2017. Positive direction shows that the size of the company increases, the value of the company increases too. The results of this study are in line with the results of research from Gill and Obradovich (2013), Prasetyorini (2013) and Maryam (2014).

Effect of Good Corporate Governance on company value in manufacturing companies listed on the Stock Exchange for the period 2013-2017. The results of this study indicate that GCG has a significant negative effect on firm value. The lower the value of the GCG index in the company is considered still not able to significantly influence the value of the company. Some things that can cause GCG have not been able to increase the value of the company: (1) lack of corporate awareness to implement GCG as a requirement not just compliance with existing regulations, (2) company management does not understand the benefits of implementing GCG in a long time. The results of this study are in line with the research previously conducted by Febhiant and Setyaningrum (2013) who found GCG had a negative effect on firm value.

Effect of profitability on company value on manufacturing companies listed on the Stock Exchange for the period 2013-2017. The results of this study showed that profitability has a significant positive effect on the value of the company in manufacturing companies listed on the Stock Exchange for the period 2013-2017. The results of this study are in accordance with the fourth hypothesis which means that the fourth hypothesis is accepted. Positive direction shows that if profitability increases, the value of the company increases too. High profitability reflects the future prospects of a good company so that investors are interested in investing which will later increase the company's stock price so that it increases the value of the company. The results of this study are consistent with research conducted by Pratama and Wiksuana (2016) Senda (2013), Sudiani (2016) Gill and Obradovich (2013), and Hermuningsih (2013) which states that profitability has a positive effect on the value of enterprises.

Effect of leverage on Profitability in Manufacturing companies listed on the IDX for the period 2013-2017. The results of this study indicate that leverage has a negative effect on profitability and significance in manufacturing companies in the period 2013-2017. The results of this study are also supported by the presence of research conducted previously by Maryadi (2013), Artini, and Suarjana (2013) leverage has a negative effect on profitability. This statement is also supported by the research of Odongo, Leonard and Mocketeli (2014) which states that leverage has a significant negative effect on profitability. The higher the leverage held by the company, the smaller the company's profitability, but also shows that high leverage is supported by the development of the company but also affects the level of profitability the company has.

Effect of company size on profitability in manufacturing companies listed on the Stock Exchange for the period 2013-2017. The results of this study indicate that the size of the company has a positive and significant effect on profitability in manufacturing companies listed on the Stock Exchange for the period 2013-2017. The results of this study support the fourth hypothesis, namely the size of the company has a positive effect on profitability. Positive direction means that the higher the size of the company, the profitability of a company will increase, this will affect the level of perceptions of investors in investing. The larger the size of the company, this is a positive response by investors shows that the company is developing, and is considered capable of providing high profits when investors invest in the company's funds. The results of this study were also conducted by (Hansen and Juniarti, 2014) and Niresh and Velnampy (2014) stating that firm size has a significant positive effect on profitability.

The influence of good corporate governance on profitability in manufacturing companies listed on the IDX for the period 2013-2017. Based on the hypothesis testing that

has been done, it can be seen that GCG has a significant positive effect on indicators of profitability in manufacturing sector companies. GCG shows that the higher the score, the higher the level of profitability. The higher the GCG score of a company is considered to be able to increase the profitability of the company because investors judge that the company has good governance that can meet the wishes of the shareholders. These results support the statement of Azha Maksum (2005) which states that with the implementation of GCG, the decision-making process will take place better so that it will produce optimal decisions, can increase efficiency and achieve a healthier work culture.

The influence of leverage on company value mediated by profitability in manufacturing companies listed on the Stock Exchange for the period 2013-2017. The Sobel test results show that profitability is able to mediate the influence of leverage on the value of firms in manufacturing companies listed on the Stock Exchange for the period 2013-2017. The effect of leverage on firm value is smaller (0.162) than indirect influence through mediating profitability (2,431). It was concluded that profitability is able to mediate the influence of leverage on firm value. The greater the level of leverage owned by the company shows that the company is developing and requires very large funds for operational activities so that the leverage owned by the company increases. The more leverage the company has, this can increase investor confidence in investing funds. The higher leverage owned by the company is also supported by the company's operational activities such as increased production or sales. The higher the sales results, the higher the profit the company will have so that it will increase the value of the company. The results of this test previously showed a significant positive effect between leverage on company value, a positive significant between leverage on profitability and a significant positive between profitability and firm value.

The influence of company size on company value mediated by profitability in manufacturing companies listed on the Stock Exchange for the period 2013-2017. The Sobel test results indicate that profitability is not able to mediate the influence of firm size on the value of the company in the manufacturing companies listed on the IDX for the period 2013-2017. The direct effect of firm size on firm value is greater (0.336) than indirect influence through mediating profitability (0.094). The size of the company can be concluded that profitability is not able to reduce the influence of firm size on firm value. The greater the size of the company owned with the level of profitability, this also cannot support that will increase the value of the company. The previous test results showed a significant positive effect between firm size on firm value, a positive significant between firm size and profitability and a significant positive between profitability and firm value. The results of this study are in line with the results of research conducted by Pratama (2016) that profitability is not able to mediate the size of the company against firm value.

The influence of good corporate governance on the value of companies mediated by profitability in manufacturing companies listed on the Stock Exchange for the 2013-2017 period. The results of the Sobel test show that profitability is able to mediate the effect of good corporate governance (GCG) on the value of firms in manufacturing companies listed on the IDX for the period 2013-2017. The effect of GCG on firm value is smaller (-0.139) than indirect effects through mediating profitability (2,0707). So that it can be concluded that profitability is able to mediate the influence of GCG on firm value. The greater the level of the GCG index owned by the company, this will provide investor confidence that the company is considered capable of managing the company in accordance with the wishes of the shareholders. The higher the level of GCG index that is owned by the company, it is able to signal to investors to invest their funds into the company, this will tend to increase the stock price owned by the company and will increase the profitability of the company so that it will increase the value of the company. The results of this test previously showed a significant negative effect between GCG on company value, and a significant positive result between GCG and profitability and a significant positive between profitability and firm value.

CONCLUSION AND SUGGESTIONS

Leverage has a positive and significant effect on the firm value on manufacturing sector companies in the Indonesia Stock Exchange for the period 2013-2017. The higher the leverage, the greater the operational funds the company has to invest in producing for the company. This can increase the company's ability to make a profit.

The size of the company has a positive and significant effect on the value of the company in the manufacturing sector companies listed on the Indonesia Stock Exchange in the period 2013-2017. The size of the company can be seen the greater the assets owned by the company shows that the company is experiencing development, so it is considered able to attract investors to invest so that the company can increase.

Good Corporate Governance has a negative and significant effect on company value in manufacturing sector companies listed on the Indonesia Stock Exchange in the period 2013-2017, this proves that the role of GCG is still very low so that GCG needs to be improved in a company, with this investor can see the performance of a company in accordance with the principles of GCG, transparency, fairness, accountability, sterility and accountability so that it will attract many investors to invest so that it will increase the value of the company.

Profitability has a positive and significant effect on company value, in manufacturing sector companies listed on the Indonesia Stock Exchange in the period 2013-2017, this shows that the higher the profitability that the company has will increase investor confidence, that the company is considered higher so that it will increase the value of the company.

Leverage has a negative and significant effect on profitability in manufacturing sector companies listed on the Indonesia Stock Exchange in the period 2013-2017. Companies with high debt usage levels, the lower the level of profit received by the company, because the company prioritizes the payment of its debt.

Company size has a positive and significant effect on profitability in manufacturing sector companies listed on the Indonesia Stock Exchange in the period 2013-2017. Companies that have high assets, the company is experiencing development so that the funds used for operations will also increase so that it will affect the profitability of the company.

Good Corporate Governance (GCG) has a positive and significant effect on profitability in manufacturing companies listed on the Indonesia Stock Exchange in the period 2013-2017. Companies that have good governance, will be considered able to attract investors to invest so that more investors to invest will increase the profit that the company has.

Profitability is able to mediate the influence of leverage on firm value in manufacturing companies listed on the Indonesia Stock Exchange for the period 2013-2017. It is considered that the greater the leverage, the smaller the profit that will be received by the company, but that, seen by investors, the company is developing supported by increasing the value of sales or production of the company so that the company's profits also increase and can meet the company's obligations, so can reduce the company's leverage value.

Profitability is not able to mediate the influence of the size of the company on manufacturing companies listed on the Indonesia Stock Exchange for the period 2013-2017. This is considered by the existence of additional profitability variables or the ability of companies to earn profits not able to influence the size of the company in increasing the value of the company.

Profitability is able to mediate the influence of GCG on manufacturing companies listed on the Indonesia Stock Exchange for the period 2013-2017. This is considered by the existence of additional profitability variables or the ability of the company to obtain profits can affect GCG in increasing the value of the company.

For the companies listed on the IDX manufacturing companies listed on the Stock Exchange are advised to pay attention to leverage, company size and GCG and profitability so that when the three variables are very helpful to increase the value of the company in the eyes of investors.

This research is limited to examining the variables of leverage, company size, profitability and firm value. It is suggested to the next researcher to add other variables such

as investment decisions that have not been included in this study in order to expand and deepen this research. In order to get results comparison results, researchers are expected to add to the research period or change the sample used.

The results of this study can be used as a material consideration and are expected to provide benefits for investment decision making in the capital market by looking at several factors that can be used to analyze leverage, company size, GCG, profitability and company value in manufacturing companies in Indonesia.

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ANALYSIS OF FACTORS THAT INFLUENCE THE INDEPENDENCE OF REGIONAL FINANCE IN WEST NUSA TENGGARA PROVINCE

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ABSTRACT

This study analyzes the factors that influence the financial independence of the regencies or cities in the province of West Nusa Tenggara (NTB). The research variables used in this study is Per-capita Regional Revenue (PAD), Per-capita Fiscal Balance Funds, Per-capita Gross Domestic Product, population and regional financial independence. The analysis tool uses multiple regression models and Ordinary least Square (OLS) method. While, the data used is a data panel Regency or Cites in NTB for the last 5 years. The results of the analysis show that the PAD variable shows a positive and significant effect on regional financial independence. Fiscal Balance Funds variables have a negative and significant effect on regional financial independence. This is because Local Government reached 70 percent fund from the central government during the study period. The variable per capita GRDP does not have a positive and insignificant effect on regional financial independence. It causes by low contribution of the main sectors to the formation of GRDP which the mainstay of the regency or cities governments in the NTB province are, such as agriculture, plantation, agriculture, mining and excavation. The variable number of residents is not positive and not significant towards regional financial independence. Lower people's purchasing power will reduce the amount of goods and services purchased that effect to reducing the amount of money for the region.

KEY WORDS

Per-capita regional revenue, per-capita fiscal balance funds, per-capita regional gross domestic product, population, multiple regression.

Regional autonomy is the authority of the autonomous region to be given and requested by the community according to its own initiative based on the aspirations of the community accordance with the laws and regulations. An important issue in the renewal of regional autonomy is the distribution of shares or balances between the central and the regions. Financial balance between the central and the regions is very important and must pay attention to politics and economic justice. It is accordance with the general provisions in Law No. 22 of 1999 which was later approved by Law No. 32 of 2004 about Local Government and Law No. 25 of 1999 which was then approved by Law No. 33 of 2004 about Financial Balance between Central and Local Governments.

In Law Number 32 of 2004, the independence of local finance means that the government can carry out financing and financial accountability itself, implementing itself in the framework of the principle of decentralization. Regional financial independence can be seen from how much regional revenue compared to regional income from other sources such as central government assistance or from loans, besides PAD regional financial independence is also caused by many factors such as Regional Gross Domestic Product (PDRB), profit sharing funds, specific allocation funds, general allocation funds and population numbers.

Measuring the performance of local governments to improve the performance of local governments as holder of public sector policies in development and community service. One of the instruments to measure the performance of local governments on managing regional finance is by analyzing the financial ratios of the APBD that have been established and ratified. Although the use of ratio analysis as a financial analysis tool for local governments is still very limited, the results of financial ratio analysis of the APBD that have been determined

and ratified by the regional government, can be used as a benchmark in: (1) Assess local financial independence on build regional autonomy implementation, (2) Measuring effectiveness and efficiency in realizing regional income. (3) Measuring which expenditures from local governments spend their regional expenditures. (4) Measuring the contribution of each source of income in the composition of regional income. (5) See growth or contributions made over a period.

West Nusa Tenggara Province as a province that has split also strives to carry out financial management better than before. Regional expansion according to Law No. 32 of 2004 is the formation of regions can be merging several regions or parts of regions that are coupled or divided from one area into two or more regions. In 2008 the number of regencies or cities in NTB was 10 regencies or cities. Previously there were 8 regencies or cities. The table is presented the regional financial independence ratio in NTB for 2012-2016.

Table 1 – Regional Financial Independence In The NTB Region In 2012-2016

Regency or City	Average of Regional Financial Independence (%)	Criteria
Bima Regency	10,75	Low
Dompu Regency	10,57	Low
Lombok Barat Regency	22,57	Low
Lombok Tengah Regency	14,73	Low
Lombok Timur Regency	15,25	Low
Sumbawa Regency	14,45	Low
Mataram City	32,3	Intermediate
Bima City	5,5	Low
Lombok Barat Regency	10,07	Low
Lombok Utara Regency	18,75	Low

Source: *Department Keuangan, 2017 (Processed).*

Based on Table 1, regional financial independence in the NTB Region in 2012-2016 is included in the very low criteria because the financial independence of the region is less than 25 percent except the city of Mataram with Intermediate criteria. This certainly needs special attention. This low criterion indicates that the local governments' ability to defray their own government activities, development and service to the community is still low. Therefore, it is necessary to know what factors influence regional financial independence.

According to Halim (2007), the existence of determinants of the size of regional financial independence is also supported by Nofiyanto (2005) showing that the structure of financial receipts in regency or cities in the Special Region of Yogyakarta is still dominated by donations and assistance from the central. The results of the same study also revealed Suprajitno (2003) indicating that the financial capacity of the local government of Banjarnegara Regency was still lacking, or it could be stated that the level of dependence on the central government was still quite high.

Research conducted by Muliana (2009) shows that PAD has a significant positive effect on the level of regional financial independence, while DAU and DAK have a significant negative effect on the level of financial independence of the regency or city in North Sumatra. Research by Erysyad (2011) found that in general, all regencies and cities in West Sumatra in 2006-2008 were still far from being said to be financially independent, the average independence ratio ranged from 3 percent to 10 percent. This means that the Regency or City governments in West Sumatra still depend on the central government to finance all the activities of their area.

The results of research by Putri (2014) show that GDP is one of the factors that influence Regional Financial Independence. Saragih (2003) in Putri (2014) said that the success of regional autonomy is measured by how much the contribution of local communities to regional economic growth or GDP. If the GRDP increases, this indicates an increase in local revenue. Darmanto (2012) who conducted research on local governments in Indonesia, showed that Population has a positive effect on Regional Financial Independence

in Indonesia. But other studies show the opposite results, that Population (Patriati and Winarna, 2010), GRDP (Winarna, 2010) does not affect Regional Financial Independence.

Re-examination of the factors that influence the Independence of Regional Finance is carried out to identify what factors influence the Independence of Regional Finance, so that the improvement steps in the future are more directed. This study aims to determine the effect of PAD, fiscal balance funds, GRDP and number of populations on the level of financial independence of regencies and cities in NTB. The conceptual framework that describes the relationship between variables in this study can be seen in Figure 1.

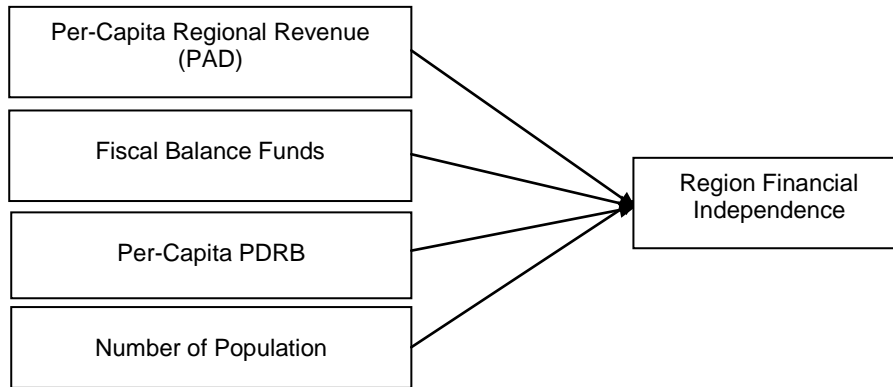


Figure 1 – Conceptual Framework

METHODS OF RESEARCH

This study uses a causative method, which is to find out and analyze the effect of GDP, Per-capita Regional Revenue (PAD), Fiscal Balance Funds and Number Population on the level of financial independence of the regency or city in NTB Province. The population used in this study is all regencies and cities in NTB. The determination of the sample is determined by the total sampling technique.

This study uses secondary data that obtained from the results of second-party processing or data obtained from the publication of other parties. Secondary data used in this study is panel data, which is a combination of cross-sectional data (cross section) and time series data (time series) from 2012-2016. The data needed in this study include, Budget Realization Reports respectively each regency or city in the NTB Region in 2012-2016, GRDP based on constant prices of 2000 regency or cities in the NTB Region in 2012-2016, Total Population based on the 2010 population census in each regency or city in the NTB Region. The methods used in data retrieval are documentation that collecting data obtained from relevant agencies.

The research variables used are the level of regional financial independence (Y), PAD (X₁), Fiscal Balance Funds (X₂), GRDP (X₃), and Number Population (X₄). This study uses a quantitative approach. The analysis technique used is descriptive analysis and statistical analysis to prove the research hypothesis. This study uses panel data regression analysis.

The level of regional financial independence is measured as follows:

$$TKKD = \frac{PAD}{\text{Central or Province Government Assistance and Loan}} \times 100\% \quad (1)$$

Table 2 – Criteria for regional independence

Financial Ability	Independence Percentage	Relationship Pattern
Very Low	0 - 25	Instructive
Low	25 - 50	Konsultative
Intermediate	50 - 75	Participative
High	75 - 100	Delegative

Source: Halim, 2004.

Per-capita Regional Revenue (X_1) in this study is measured by looking for contributions to regional income with the formula:

$$PAD = \frac{PAD}{\text{Number of Population}} \quad (2)$$

Fiscal Balance Funds (X_2). Fiscal Balance Funds in this study are measured by looking for contributions to regional income with the formula:

$$\text{Fiscal Balance Funds} = \frac{\text{Fiscal Balance Funds}}{\text{Number of Population}} \quad (3)$$

GRDP (X_3): GRDP in this study is measured using per-capita GRDP on the basis of constant 2000 prices using the formula:

$$PDRB_{\text{percapita}} = \frac{PDRB \text{ constant price 2000}}{\text{Number of Population}} \quad (4)$$

Total Population (X_4), Population in this study is the total population in the Regency or City in the NTB Region. This study refers to the Population projection based on the 2000 population census, the 2010 population census and the results of projections based on the 2010 population census by Regency or City in the NTB Region.

RESULTS AND DISCUSSION

Based on data processing, multiple regression equations are obtained as:

$$Y = 8,13 + 0,017(X_1) - 0,001(X_2) + 5,39(X_3) + 0.003 (X_4)$$

Where: Y = Level of Regional Financial Independence (in Percentage); X_1 = PAD per capita (in thousands of rupiah); X_2 = Percentage Balance Funds (in thousand Rupiahs); X_3 = GDP per capita (in thousand Rupiah); X_4 = Population (thousands of people); e = error.

The PAD variable (X_1) has a significant positive direction of 0.017 and $0.0493 \leq \alpha = 0.05$, meaning that if the PAD increases by one thousand rupiah, regional independence increases by 0.017 percent if it is assumed the Fiscal Balance Fund, GRDP and Number of Population are zero. The Fiscal Balance Funds variable (X_2) has a significant effect with a negative direction of 0.001 and $0.0309 \leq \alpha = 0.05$, meaning that if the balance fund rises by one thousand-rupiah, regional independence decreases by 0.001 percent if assumed PAD, GRDP and Number of Population are zero.

GDP variable (X_3) does not have a significant effect with positive direction of 5.39 and $0.3563 \leq \alpha = 0.05$. this means that if the GRDP increases by one thousand rupiah, then regional financial independence rises by 5.39 percent if it is assumed that the Fiscal Balance Funds, PAD and Number of Population are equal to zero. The Population Amount variable (X_4) has no significant effect with positive positive direction of 0.003 and $0.4219 \geq \alpha = 0.05$. this means that if the population increases by 1,000 people then regional independence rises by 0.003 percent if it is assumed that PAD, Fiscal Balance Funds and GRDP are equal to zero. The measurement results of the coefficient of determination show an adjusted R^2 value of 0.8356. This indicates that 83.56 percent of the variation in regional financial independence is explained by the PAD, Fiscal Balance Funds, GDP and Number of Population variables. While the remaining 16.44 percent is explained by other factors outside the research model such as grants, loans and others.

The results of the study showed that the Per-capita Regional Revenue (PAD) had a significant effect on the level of regional financial independence in NTB Province and supported the hypothesis proposed previously which stated that PAD had a positive and significant effect on regional independence in NTB. This finding supports the results of Ersyad (2011) research in Regency or Cities in West Sumatra which found that Per-capita Regional Revenue (PAD) had a positive and significant effect on the level of regional

financial independence. This shows that the regency or city governments in NTB have succeeded in optimizing the sources of PAD owned to finance their regional expenses. Sources of income such as regional taxes, regional levies, separated income from wealth proceeds and other legitimate PAD until now continue to be optimized by regency or city governments in NTB.

If the PAD of a region is greater than the assistance of the central or provincial government and loans, the area is already financially independent so that the local government can reduce the allocation of the balance funds to the area. Conversely, if a region's PAD is smaller than the regional loan and central or provincial government assistance such as Revenue Sharing Fund (DBH), General Allocation Funds (DAU) and Specific Allocation Funds (DAK), the area is said to be financially independent because the area is still dependent on the central government. In implementing regional autonomy, financial resources originating from local revenues are more important than other sources of income because PAD is a regional financial resource that is extracted in the region concerned so that the optimization of PAD sources needs to be done to improve regional financial capacity.

The results of this study indicate that the balance fund has a negative and significant effect on the level of financial independence of the Regency or City in NTB. This finding shows that the greater the balance fund given by the central to the Regency or City in NTB, the lower the level of regional independence on managing its finances or in other words, the Regency or City in NTB still depends on central assistance in managing the independence of the region. This finding also supports the hypothesis proposed previously that Fiscal Balance Funds have a negative and significant effect on regional independence in NTB. The same results were also supported by research by Nofiyanto (2005) in the Special Regencies and Cities of Yogyakarta in 1994-2003, finding that the structure of financial receipts in regencies or cities in the Special Region of Yogyakarta was still dominated by donations and assistance (DAU and DAK) from the central. The significance of the Fiscal Balance Funds influencing regional independence in NTB based on the results of the analysis is more due to the high dependence of each regency or city on funding from the central. This is proven Based on the research period from 2012-2016 by dividing the total balance funds with the total Regional income of regencies or city in NTB, the amount of regional dependency is almost 70 percent of total regional income. The sources of balance funds are still dominated by the General Allocation Fund, Revenue Sharing Funds, Specific Allocation Funds which are the main sources of regional income.

Based on the results of data analysis shows that the variable per-capita GRDP does not significantly influence the Regency or City Financial Independence in NTB. This finding rejects the hypothesis put forward that per-capita GRDP has a positive and significant effect on regional financial independence. This result is inconsistent with the results of a study by Putri (2014) saying that the higher the level of GRDP indicates that the economic growth of the regional government is high and the welfare of the community increases. Not significant The GDP affects regional independence due to the low contribution of the main sectors of the formation of GRDP which the mainstays of the Regency or City in NTB are so far, such as the agriculture, plantation, and fisheries, mining and quarrying sectors. Based on the research period from 2012-2016, the average contribution of the agriculture, plantation and trade sectors to the formation of the GRDP only reached 23.56 percent, while the mining and quarrying sector only amounted to 17.96 percent, much lower than the target set by the government area 50 percent for agriculture, plantation and trade sector and 30 percent for mining and quarrying sector (BPS NTB, 2016). This can be seen in the table 3:

Table 3 - Percentage distribution of GDP based on constant prices according to business fields in West Nusa Tenggara Province (percent)

Business Fields	2012	2013	2014	2015	2016	Average
Agriculture, Forestry and Fisheries	24,73	24,28	24,14	20,95	23,7	23,56
Mining and excavation	16,26	16,16	15,36	20,58	21,45	17,962

Source: BPS NTB, 2017 (Processed).

If the production of goods and services in the agriculture, forestry and fisheries and mining and quarrying sectors gives a high value of contribution, for example above 50 percent, the contribution to the GRDP will be higher, which in turn will provide an additional increase in regional revenues. Likewise, if the contribution is low, it will reduce regional revenues.

In general, each region has enough natural resources and even very potential, but if it is not used properly, the results will be futile. In implementing regional autonomy, increasing PAD does not necessarily emphasize the acquisition of regional taxes and retributions because it will indirectly burden the community with the aim of achieving targets from taxes and levies. The government must be able to continue thinking to manage the potential of existing natural resources by maximizing the existing human resources with training or by bringing in foreign experts in return for services in accordance with the prevailing provisions.

Testing the Population Number variable shows that the Population Number has no significant effect on Regional Financial Independence in NTB. This finding also rejects the previously stated Hypothesis that Population has a significant effect on regional financial independence. This result is the same as the findings made by previous researchers, Darmanto (2012) that an increase in population will reduce people's purchasing power in the region. Decreasing public purchasing power will reduce the amount of goods and services produced in the economy so that it has an impact on decreasing income for the regions, decreasing regional income resulting in lower regional capacity to manage finances. In addition, the population occupying an area will also affect the services provided by the regional government. If the number of populations becomes greater, it will require regional governments to improve public services better. Meanwhile, the ability of regions to provide public facilities is increasingly limited. So, service to the community becomes less optimal. The increase in demands has made it difficult for the government to improve performance (in this case regional financial independence) in providing services to the community.

CONCLUSION AND RECOMMENDATIONS

Regency or City Governments in NTB have succeeded in optimizing the sources of PAD owned to finance their regional expenditures. The dependence of each Regency or City of West Nusa Tenggara Province (NTB) is high on funding assistance from the central which reached 70 percent during the study period. The contribution of the main sectors to the formation of the GRDP, which has been the mainstay of the Regency or City governments in the Province of West Nusa Tenggara (NTB), such as the agriculture, plantation and fisheries, mining and quarrying sectors are still low. Population does not have a significant effect on regional financial independence in regencies or cities in West Nusa Tenggara (NTB) Province due to a decrease in people's purchasing power.

Local governments must continue to strive to increase revenues through intensification, external-strengthening and use of the budget effectively, efficiently so that it reduces dependence from the central government gradually. The government needs to strive to increase the achievement of the GRDP target annually so that regional revenues increase so that the regions can manage their regional finances. Population growth must be suppressed and balanced with improvements in the quality of the population itself, to create a quality population and increase regional financial independence.

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ANALYSIS OF EMPLOYEES' WORKLOAD QUALITY CONTROL

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ABSTRACT

PT XYZ Indonesia is a pharmaceutical company that manufactures medicines, clinical nutrition, intravenous fluids, and medical tools. PT XYZ has a Quality Control Department which includes several divisions. Based on observations, the workload of workers in the Biology Division Quality Control Department is quite high; the job description that has been determined by the company is only done by a workforce of 9 people and 1 supervisor, causing fatigue due to excessive workload. The workload calculation was done by using the Workload Analysis method. The first step was to observe the level of worker productivity using work sampling, determine the value of Performance Rating, Allowance, workload value, and the number of proposed workers. The amount of workload received by workers was then used to determine the number of workers who should be employed so that the employee will not have excessive workloads. The workload calculation results show that 9 workers have a high workload of 161%. The proposed improvement given to overcome this high workload is to add 6 workers.

KEY WORDS

Workload, workload analysis, number of workers, quality control.

Work is a burden for those who undergo it which can be physical or mental. From an ergonomic point of view, the workload received must be appropriate for both the physical abilities and the limitations of the person who receives the burden. Workloads that exceed work capacity will certainly have a bad impact. PT XYZ Indonesia is a large company that has hundreds of employees. The products produced are very diverse and are produced in large quantities. This is what causes so many products to be identified and analyzed by the Quality Control Department employees. The Biology Division Quality Control Department itself is responsible for hundreds of documents about testing and controlling product quality from the production department.

Time measurement is the work of observing and recording the working times of each element or cycle by using the tools that have been prepared (Ade and Muhsin, 2017). Employees are valuable assets for the company. Without the employees, the company is impossible to run properly. Employees are ordinary people who can experience fatigue (Ramadhan *et al.*, 2014). The company predicts that the low performance is due to the number of defective products, and the length of the process (Muhsin, 2016). In the production process, there is often a disruption in the machine or equipment used, so that it can disrupt the production process (Ningrum and Muhsin, 2016). Constraints faced by companies are that the company often experiences failure to achieve daily production targets (Ristyowati, Muhsin and Nurani, 2017).

The responsibilities of the employees including the task to analyze the products of 120 samples each day (sample delivery time depends on the Production Department) are not balanced with the number of employees employed in this division (nine people plus one supervisor). This imbalance is caused by more samples being tested than employees working in this laboratory. The work that must be done includes testing and copying data in writing (both manual and computerized). The workload received by each employee becomes large between 140% to 170%, exceeding the maximum limit that is supposed to be 100%. When the workload becomes higher than the maximum limit, there are adverse effects that

will occur. The adverse effects are a decrease in the level of productivity, rapid fatigue, and increased psychological burden that is not good for the health of employees.

METHODS OF RESEARCH

This study observes the workload experienced by employees using the Workload Analysis method and determines the optimal number of employees that should be employed. The steps taken in conducting this research is collecting general overview data of PT XYZ Indonesia, organizational structure, number of current employees, job description of each job, the productivity and non-productivity of the employees, performance rating, and allowance.

Data processing carried out in this study:

- Calculating the percentage of productivity and non-productivity with the work sampling method;
- Determining the performance rating using the Westing House System method;
- Determining the *allowance*;
- Calculating workload with Workload Analysis method;
- Determining the number of workers/ employees.

The analysis carried out in this study are: analyzing the percentage of productivity and non-productivity of each operator, analyzing the workload conditions related to the causes of high workloads, and analysis related to the number of workers, in terms of the number of workers who are present compared to the number workers based on their workload.

RESULTS AND DISCUSSION

Productive activities are those that are in accordance with the predetermined job description while non-productive activities are activities that do not produce added value. These productive and non-productive activities are used for the calculation of workload. The workload can then be used to identify whether the workload received exceeds the maximum limit (more than 100%) or not. When the workload received is more than 100%, it is suggested to add employees.

Productive and non-productive activities can be done by comparing the job description of each worker with the activities they actually did at the time of observation. Data on the number of productive and non-productive activities carried out by workers during observations is shown in the following tables.

Table 1 – Data on productive/non-productive activities of the workers

Workers	Activities	Observation Day				
		1	2	3	4	5
Worker 1	Productive	27	28	29	29	28
	Non-Productive	3	2	1	1	2
Worker 2	Productive	28	30	30	28	29
	Non-Productive	2	0	0	2	1
Worker 3	Productive	27	29	30	28	29
	Non-Productive	3	1	0	2	1
Worker 4	Productive	29	30	30	28	29
	Non-Productive	1	0	0	2	1
Worker 5	Productive	30	30	26	30	30
	Non-Productive	0	0	4	0	0
Worker 6	Productive	29	28	28	30	28
	Non-Productive	1	2	2	0	2
Worker 7	Productive	30	29	29	30	27
	Non-Productive	0	1	1	0	3
Worker 8	Productive	28	28	28	28	28
	Non-Productive	2	2		2	2
Worker 9	Productive	29	29	29	29	29
	Non-Productive	1	1	1	1	1

Data adequacy test is done to determine the number of observations that must be done in the work sampling. To calculate the number of measurements needed for an accuracy level of 5% and a confidence level of 95%, the following formula is used.

$$N' = \frac{k^2 (1 - \bar{p})}{s^2 \cdot \bar{p}}$$

The results of the calculation of the data adequacy test are shown in Table 2 below.

Table 2 – Test results for data adequacy

Name	N	N'	Description
Worker 1	150	102	N > N', adequate data
Worker 2	150	56	N > N', adequate data
Worker 3	150	91	N > N', adequate data
Worker 4	150	44	N > N', adequate data
Worker 5	150	79	N > N', adequate data
Worker 6	150	44	N > N', adequate data
Worker 7	180	65	N > N', adequate data
Worker 8	180	65	N > N', adequate data
Worker 9	180	65	N > N', adequate data

The data homogeneity test was conducted to find out whether the data obtained was homogeneous and did not exceed the upper control limit (BKA) and the lower control limit (BKB) that had been determined. The formula of the upper control limit and lower control limit are as follows.

$$BKA = \bar{p} + k \sqrt{\frac{\bar{p}(1-\bar{p})}{n}}$$

$$BKB = \bar{p} - k \sqrt{\frac{\bar{p}(1-\bar{p})}{n}}$$

The results of the calculation of the data homogeneity test are shown in Table 3 below.

Table 3 – Data homogeneity test results

Name	% of productivity	Upper	Lower	Description
Worker 1	94	1,157	0,723	Homogeneous data
Worker 2	96,6	1,131	0,801	Homogeneous data
Worker 3	94,6	1,152	0,740	Homogeneous data
Worker 4	97,3	1,114	0,832	Homogeneous data
Worker 5	95,3	1,111	0,795	Homogeneous data
Worker 6	97,3	1,114	0,832	Homogeneous data
Worker 7	96,1	1,119	0,803	Homogeneous data
Worker 8	96,1	1,119	0,803	Homogeneous data
Worker 9	96,1	1,119	0,803	Homogeneous data

The calculation of this rating is expected to "normalize" the measured work time. The adjustment factor data used in this study is using the Westinghouse method. Westinghouse directs the assessment of four factors that are considered to determine reasonableness or irregularity in work, namely skills, effort, working conditions, and consistency. Determination of spare time (allowance) will then be included in the calculation of the total time required for a position to complete its activities is very necessary. The results of calculating the rating factor and allowances are summarized in Table 4 below.

Workload is defined as a difference of the capacity or ability of workers based on the demands of work to be faced. Workload Analysis (WLA) is a way to calculate the amount of workload caused by the performed activities. A good workload should be close to 100% or under the normal conditions.

Table 4 – Summary of *rating factor* and *allowance*

Name	Rating Factor	All (%)
Worker 1	1,386	16,70
Worker 2	1,368	14,25
Worker 3	1,644	17,90
Worker 4	1,644	17,90
Worker 5	1,368	18,00
Worker 6	1,368	18,00
Worker 7	1,644	17,90
Worker 8	1,644	17,90
Worker 9	1,644	17,90

The calculation of the workload of each element can be known by using the following formula.

$$\text{Workload} = \frac{\% \text{ of Productivity} \times \text{Performance Rating} \times \text{Total Minutes of Observation} \times (1 + \text{Allowance})}{\text{Total Minutes of Observation}}$$

The procedure that is often used to determine how many workers needed is to analyze the experience. Records of work results can show the volume of average results achieved by each workforce. The average can then be used to estimate the worker requirements.

The calculation of the number of workers that should be employed is by dividing the amount of workload that has been calculated using the WLA method with an estimated number where the results of the division can show a percentage below 100%. The results of the calculation of the workload and the number of optimal employees proposed are shown in Table 5 below.

Table 5 – Workload summary

Number	Workload (%)
Worker 1	149,7
Worker 2	150,9
Worker 3	183,4
Worker 4	188,6
Worker 5	153,8
Worker 6	157,1
Worker 7	155,2
Worker 8	155,2
Worker 9	155,2

Based on the workload data above, the total overall workload is 1449 with an average of 161 workers so that assuming the normal conditions of workers, it should have a value of 100 then the excess workload on the Quality Control Department is $1449 - 900 = 549$, which means to get the normal workload, it requires $549 : 100 = 5.49$ or 6 additional workers.

CONCLUSION

Based on the results of data processing, it can be concluded that the workload of employees in the Biology Division Quality Control Department is high at an average of 161%, where the maximum workload limit that should be received is 100%. Therefore, to get a normal workload, 6 additional workers need to be added. The cause of the high workload was due to the large number of jobs which was not matched by the equivalent number of employees so that every employee also had full job and many tasks.

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OPTIMIZATION OF IRRIGATION WATER FLOWING SCHEDULING SYSTEM USING GENETIC ALGORITHM METHOD WITH SPATIAL GEOGRAPHICAL APPROACHES: A CASE STUDY OF KEULILING DAM IN ACEH BESAR DISTRICT, INDONESIA

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ABSTRACT

Keuliling Reservoir which is located in Kuta Cot Glie, Aceh Besar is one of the reservoirs that have a function as a provider of water for irrigation needs, supports food self-sufficiency programs and others. The reservoir area has limited volume of water so, the most important water-saving irrigation water should be done to determine the scheduling of the distribution of irrigation water to the area of rice fields. The purpose of this research is to develop a method that can be used to the calculation of scheduling and can be applied to the irrigation of the Keuliling Reservoir watershed in Aceh Besar. In this study, the Genetic Algorithm method was used to determine the optimization of the Keuliling Reservoir in the Aceh Besar. From the analysis that has been done, by test of the Genetic Algorithm method, the minimum optimization of the time and discharge of irrigation water is obtained. While the visualization of these results can be displayed using the Matlab GUI software. The remaining disposal of irrigation water into the Keumireu watershed at one hour of irrigation has the minimum value of 600 Liters / Hour. The best irrigation time obtained is based on the calculation of 72 Genetic Algorithm methods in which the amount of water entering the rice field area is 1,038,211,600 Liters and 257,788,400 Wasted in the river. Based on the results of testing the application of the Keuliling Reservoir watershed irrigation scheduling in Aceh Besar that was built with Genetic Algorithms can solve optimal scheduling problems.

KEY WORDS

Irrigation, scheduling, genetic algorithms, optimization.

The potential of water resources in Indonesia is very abundant at around 3,200 billion m³/year in 7956 rivers and 521 lakes. The availability of water around 700 billion m³/year makes Indonesia one of the wettest countries in the world (Hasan 2012). The availability of water in a watershed is influenced by climatic, topographic, geological, vegetation and hydrological processes (Niagara et al. 2016). Utilization of water resources is increasing along with the rate of population growth and various sectors of activities that are increasingly developing. In addition to household needs, water availability is also needed for the needs of rice irrigation and industrial irrigation. According to the Director General of Natural Resources (2011) reported that raw water that has been used for households and urban areas has reached 3.7% of the total amount of water that has been utilized, the rest is used for irrigation of 80.5% and industrial activities of 15.8%. Irrigation water requirements for wetland rice require different volumes of water for each growth phase (Subagyono et al. 2001). The need for wetland water for one planting season is 1744 mm or 1.6 l/sec/ha during the rainy season, while in the dry season is 1940 mm or 1.8 l/sec/ha, so the average per planting season is 1.7 l/sec/ ha (Notohadiprawiro 2006). Aceh Province, especially Aceh Besar District uses an irrigation system to drain agricultural land, especially in villages in the Keuliling Dam area. The existence of irrigation is expected to increase land production through increasing cropping intensity and increasing land productivity.

The limited flow of water in the dry season often affects agricultural production and land productivity. To overcome this problem, irrigation scheduling efforts at the Keuliling Dam will be the right solution. Scheduling can be done using the Genetic Algorithm Method. The Genetic Algorithm method is expected to provide the optimal solution to the optimization problems [Admi Syarif. 2014]. The method of Genetic Algorithm is now being applied to

irrigation scheduling problems to optimize water volume. Therefore, the distribution of water from the Keuliling Dam in Aceh Besar District is expected to be available optimally using the method of Genetic Algorithms and the Spatial Geographical approach. This study aimed to optimize the distribution of irrigation water by scheduling the Keuliling Dam by using the Genetic Algorithm method.

METHODS OF RESEARCH

This research was conducted at the Computing Laboratory for Mathematics Modeling and Simulation in Syiah Kuala University. This research lasts for six months, from August 2018 until January 2019.

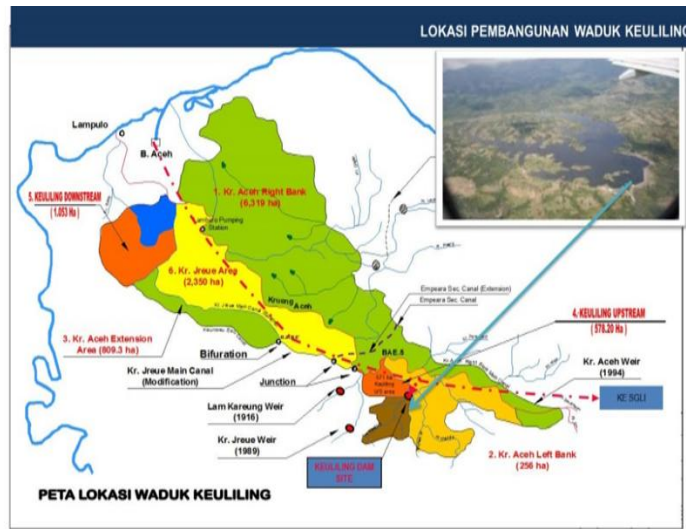


Figure 1 – Study Location

This research requires basic data, namely water flow data. While the technical data related to this problem uses land area data and irrigation time data.

Table 1 – Keuliling Dam Floodgate Data

No	Name of Floodgate	Water Flow of Floodgate (Liter/second)	Land Area (Ha)	Time (t)
1	BKL 1	10.440.000	1710	36
2	BKL 2	9.943.200	1624	36
3	BKL 3	2.822.400	490	35
4	BKL 4	266.400	50,9	24
5	BKL 5	270.000	50	22
6	BKL 6	298.800	30,25	20
7	BKL 7	120.000	15	15
8	BKL 8	3.750.000	500	35
9	BBS 1	565.700	85,75	24
10	B.Pa. 1	350.000	28,05	15
11	BBS 2	375.000	70,80	30
12	BSH 1	482.400	81,25	33
13	BSH 2	105.000	13,5	12
14	BSH 3	250.600	41	28

Source: Office of Public Works and Spatial Planning of Aceh Besar District.

The optimization technique used the Genetic Algorithm Method, and the spatial approach was simulated using the Matlab GUI application. The linear program assumed that all variables and decision-making parameters were linearly related. The formulation of the mathematical model developed by Chairil F, 2005 led to the optimization of irrigation water which enter farmland. While the researchers developed the formulation by optimizing the

scheduling of irrigation water flow in the irrigation floodgate of the Keuliling Dam against time (t), so that the wasted water becomes minimal by considering the following assumptions:

- The condition of all irrigation channels at each floodgate when water flows;
- The value of the water flow at each floodgate is constant ($d_j = \text{Constant}$);
- $t = \text{Time for irrigation}$;
- $D = \text{The water flow constant is 18,000,000 Liters/Hour}$.

$$j = \begin{cases} 1 & \text{Opened Floogate condition} \\ 0 & \text{Closed Floodgate condition} \end{cases}$$

Minimizing the volume of water flow distribution in the irrigation system at the flood gate facility to minimize wasted water.

$$\text{Min } V = \sum_{t=1}^T G_t$$

Where: $V = \text{Water Volume}$; $G_t = \text{The remaining irrigation water which wasted into the river with time, where } t \in \{1, 2, 3, \dots, T\}$; $T = \text{Period of irrigation water flow in the Keuliling Dam of the Aceh Besar District to the floodgates}$.

The constraint function is divided into water availability constraints and time constraints, with formula:

Constraints for flow of irrigation water that enters rice fields at time t.

$$P_t = \sum_{j=1}^T X_{t,j} \cdot d_j \leq D$$

Where: $V = \text{Volume of Keuliling Dam}$; $D = \text{Constant of water flow; intake/dam of 18.000.000; Liter/hours}$; $t = \text{Irrigation scheduling time}$; $j = \text{Irrigation floodgate}$; $d_j = \text{water flow of j-th floodgate}$; $X_{t,j} = \text{Schedule for irrigation water at t-time of j-th floodgate}$.

Constraints of irrigation water flow that is wasted into the river at t-time.

$$G_t = D - \sum_{t=1}^T P_t$$

RESULTS AND DISCUSSION

Keuliling Dam Watershed Profile. Keuliling Dam is one of the sub-watersheds of the Keumireu River which has a potential area of 4,790.5 ha. The dam holds ± 18 million m^3 with an inundation area of 228 Ha and a catchment area of 38.20 Km^2 . The Keuliling Dam meets the water requirements for the Krueng Aceh Extension and Krueng Jreue irrigation area of 3,159.30 Ha. Technical data related to this problem are data of land area and times of irrigation [Sumatra River Regional Office, 2017]. When the Keuliling Dam Profile button is pressed in the main view of the system, the system will display the Keuliling Dam Watershed Profile form by having one intake gate and 14 secondary canals as shown in Figure 2.

The search for the location of irrigation water gate facilities was carried out using Global Positioning System (GPS) equipment. Field coordinates got by using the Google Earth Pro application. Searching results were determined by the position of each floodgate which flows through the rice fields. The coordinates of the location of the floodgate object passed by the Keuliling Dam watershed in Aceh Besar Regency are found in Table 2.

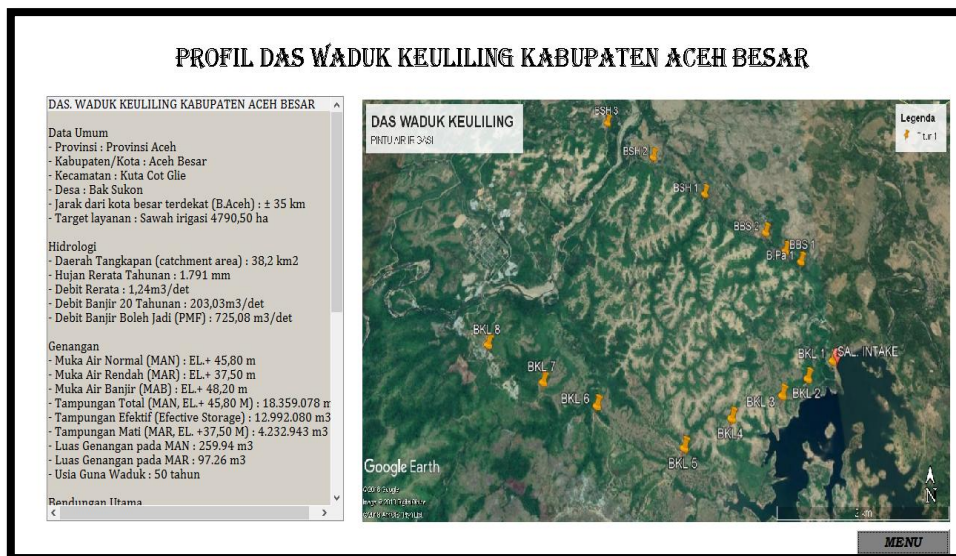


Figure 2 – Keuliling Dam Watershed Profile

Table 2 – Coordinate of Irrigation Floodgate on Keuliling Dam Watershed in Aceh Besar District

No	Point	Name of Floodgate	Coordinates	
			Latitude	Longitude
1	P ₁	BKL 1	5,215055	95,282618
2	P ₂	BKL 2	5,214439	95,281486
3	P ₃	BKL 3	5,213859	95,283510
4	P ₄	BKL 4	5,213119	95,274238
5	P ₅	BKL 5	5,212228	95,272322
6	P ₆	BKL 6	5,213527	95,264829
7	P ₇	BKL 7	5,214238	95,262612
8	P ₈	BKL 8	5,215586	95,261150
9	P ₉	B.Pa 1	5,222789	95,281808
10	P ₁₀	BBS 1	5,223226	95,281159
11	P ₁₁	BBS 2	5,224006	95,283300
12	P ₁₂	BSH 1	5,225727	95,273568
13	P ₁₃	BSH 2	5,231474	95,271077
14	P ₁₄	BSH 3	5,233241	95,264703

The results of the search for coordinates in the table above can be proven by searching in the field. Searching for coordinates using the Google Earth Pro application can be seen in Figure 3.

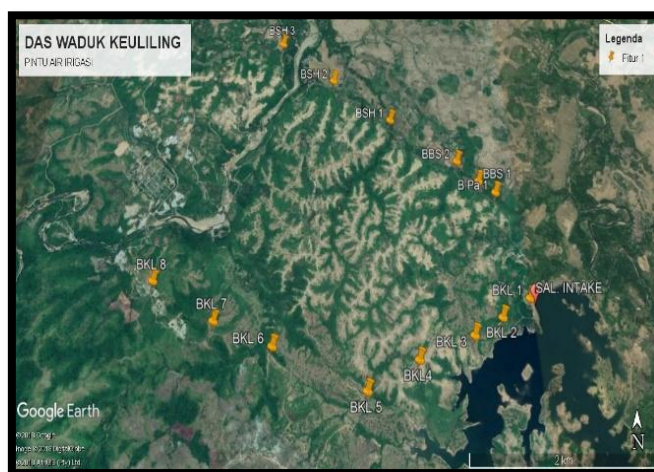


Figure 3 – Coordinates using the Google Earth Pro

Chromosome Initialization. Chromosomes for scheduling problems can be illustrated by using a coded string, symbolized by the string length of 14, which is called a chromosome. A total of 50 populations mean that there are around 50 solutions for 72 hours of scheduling irrigation water in the Keuliling Dam watershed in Aceh Besar District. Each chromosome contains binary values between 1 and 0, where 1 then the irrigation floodgate is open, while 0 irrigation floodgates is closed. Determination of chromosome initialization focuses on multiplication between time and value of water flow at irrigation flood gate must be smaller with intake, where flow at intake gate (D) is constant that is equal to 18,000,000 Liters/Hour.

$$P_t = \sum_{t=1}^T X_{t,j} \cdot d_j \leq D$$

First solution for t=1:

$$P_t = \sum_{t=1}^T 10.440.000 + 0 + 2.822.400 + 0 + 0 + 0 + 0 + 3.750.000 + 565.700 + 0 + 375.000 + 0 + 0 + 0 = 17.935.100 \leq D \leq D$$

Fitness Function. The fitness function focuses on its objective function. In this system, the fitness function minimizes the volume of irrigation water in the dam where:

$$f = \frac{1}{\log G_t}, \text{ dimana } G_t = D - P_t$$

Where: f= Fitness function; G_t = Difference between dam waterflow and irrigation waterflow at each floodgate; D= Irrigation waterflow at the intake gate of the dam; P_t = Irrigation water flow at t-th the floodgates.

Table 3 – Fitness Function

t	P_t (Liter/hour)	G_t (Liter/hour)	$\frac{1}{\log G_t}$
1	17.953.100	46.900	0,214079
2	14.936.100	3.063.900	0,154172
3	15.223.300	2.776.700	0,155194
4	5.522.600	12.477.400	0,140922
5	11.966.400	6.033.600	0,14748
⋮	⋮	⋮	⋮
72	5.267.600	12.732.400	0,140748

Fitness Probability. The cumulative value of the fitness probability obtained was 1, this can be seen based on the definition of probability theory, the probability value ranges between 0 - 1 intervals where, that is, the probability value produced should not be more than 1. The maximum probability value produced must be 1.

Roulette Wheel Selection Method. At this stage, chromosomes are selected according to their fitness value. The first step that can be performed is the fitness value that has been obtained and carried out an addition. Then random numbers are generated. Sequential fitness values can be compared to random numbers that have been generated. If $\frac{\text{value Fitness}}{\text{Total Fitness}} > \text{fitness value/total fitness} > \text{random numbers that have been generated}$, then the chromosome will be selected as the main for the next process.

Crossover and Mutation. The crossover method used is the one cut point crossover method. This method is carried out by selecting two parents which crossover to determine the cut point. One time the crossover process produces one child. The child from the crossover will have the first chromosome from the parent along the cut point, and get the remaining chromosomes from the second parent. Cut point is used in research along 7 genes and is worth 0 and 1. The process of mutation can occur with several special possibilities for each gene from a chromosome called random only improving. The floodgates from time and large floodgates are chosen randomly and exchanged if they have a better

solution. The mutation process will be directed according to the condition of the flow of irrigation water in the Keuliling Dam watershed in Aceh Besar District. The mutation process will be adjusted to the size of the water flow and the time needed to drain the water at each irrigation water gate facility. If the water flow process is in long time, it will be prioritized so that the water flow in the dam can be optimized. Then the mutation is performed by exchanging 0 bit to 1, and 1 bit to 0.

Literation of Generation. After all stages have been completed, it can be concluded that the time for scheduling the Keuliling dam watershed irrigation in Aceh Besar Regency which starts from $t = 1$ until the end of the supply of water to the rice fields when $t = 72$. While the most optimal value for scheduling at certain hours with the remaining water wasted very little, which is 600 Liters / Hour. The open gate schedule is BKL 1, BKL 3, BKL 4, BKL 7, BKL 8, B.Pa.1, and BSH 3. The overall results of water during the scheduling which supply to each irrigation floodgate was 1,296,000,000 liters. The number of water that enters into the rice fields was 1,038,211,600 liters and the amount of wasted irrigation water was 257,788,400 liters. The search results for the optimal solution from the scheduling of Keuliling Dam watershed irrigation in Aceh Besar District by using Genetic Algorithms produce scheduling with a minimum amount of time. The amount of time needed to irrigate 4,790.50 ha of rice fields through secondary irrigation of 14 gates is 72 hours. While the total amount of irrigation water that enters the rice fields is 1,038,211,600 Liters, and which wasted into the river is 257,788,400 Liters. Thus, the use of the Genetic Algorithm method can be used as an option in solving optimization problems in scheduling system problems.

CONCLUSION

In terms of irrigation time and irrigation water flow the application of the Genetic Algorithm method for scheduling watershed irrigation water can be produced optimally. The condition of wasted irrigation water into the river is minimized and water entering the rice fields can be maximized through a scheduling system.

The calculation results of optimizing in the scheduling of Keuliling Dam watershed irrigation in Aceh Besar Regency by using the Genetic Algorithm method resulted in the total amount of irrigation water entering the rice fields of 1,038,211,600 Liters. The total irrigation water wasted into the river was 257,788,400 Liters and for 72 Hours irrigation water flows to rice fields.

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EFFECT OF WORK-FAMILY CONFLICT, JOB STRESS AND ORGANIZATIONAL COMMITMENT OF EMPLOYEE PERFORMANCE ON GOVERNMENT EMPLOYEES IN THE DPRD SECRETARIAT OF BALI PROVINCE, INDONESIA

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ABSTRACT

Performance is a key factor in organizational success. The better the performance produced by the employee, the faster the achievement of organizational goals. Employee performance will be maximal if it is able to manage stress, has commitment to its work and can divide the time between work roles and family roles. Performance factors are important aspects in managing human resources effectively and efficiently. This study aims to examine and analyze the effect of work-family conflict, work stress and organizational commitment on employee performance. Data collection was conducted by distributing questionnaires to 133 government employees at the DPRD Secretariat of the Province of Bali. This study uses saturated samples by distributing questionnaires to 133 employees as respondents. The data analysis technique used is path analysis. The results showed that work-family conflict directly had a significant negative effect on organizational commitment. Job stress has a significant negative direct effect on organizational commitment. Work-family conflict directly has a significant negative effect on employee performance. Job stress has a significant negative direct effect on employee performance. Whereas organizational commitment has a significant positive direct effect on organizational commitment.

KEY WORDS

Work-family conflict, work stress, organizational commitment, employee performance.

Bali Provincial DPRD Secretariat is a political institution that has the task of controlling and supervising the administration in accordance with the principle of regional autonomy. The DPRD Secretariat has a role to support the smooth implementation of the tasks and functions of DPRD members. its duties, including from the technical and operational side.

Employees in the Bali Provincial DPRD Secretariat are 133 employees led by the DPRD secretary. Governor Regulation Number 117 of 2016 The duties and functions of the DPRD secretary through the board secretary are 1) Implementation of DPRD secretariat administration, 2) Implementation of DPRD financial administration, 3) Facilities of DPRD meeting activities, 4) Provision and coordination of experts needed by DPRD, 5) Implementation the task of service to the DPRD and other functions provided by the governor in relation to their duties and functions.

In order to support the running of the tasks and functions of the DPRD secretariat in facilitating Bali Provincial DPRD Members, a RENJA was formulated or the Bali Provincial DPRD Secretariat Work Plan. Renja is a one-year plan that contains programs and activities as well as targets and targets set. The Work Plan of the DPRD Secretariat consists of 7 Programs 19 activities.

Civil servants and non-civil servants at the Bali Provincial DPRD Secretariat must have a good performance to achieve the Work Plan (Renja), because the better the level of performance realization in activities and programs that have been arranged in the Work Plan (Renja) the better the performance civil servants and non civil servants in facilitating the duties and functions of the members of the Bali Provincial DPRD. Civil servants and non-civil servants have the obligation to carry out work plans in the DPRD secretariat of the Province of Bali in accordance with Governor Regulation No.117 of 2016 concerning the position, organizational structure, duties and functions and work procedures of the Bali Provincial DPRD secretariat.

The performance of civil servants and non-civil servants must be optimal in supporting and facilitating the Work Plan (Renja) because the more optimal performance of civil servants and Non-civil servants at the DPRD Secretariat of the Province of Bali will support the performance of Bali Provincial DPRD members in implementing legislative functions, budget functions, and supervisory functions. Civil servants and non-civil servants at the Bali Provincial DPRD Secretariat must have a strong commitment to achieving the Work Plan. The civil servants and non-civil servants are paid by the government and employees should have emotional ties and strong moral responsibility towards the organization and have a strong sense of ownership towards the achievement of the work plan in the DPRD Secretariat of the Province of Bali.

Table 1 – Achievement of Performance Services at the Bali Provincial DPRD Secretariat in 2015/2019

No	Indicator	Target / Standard Number / Value	SKPD Target		Realization of Achievement	
			Year	Target	Year	Realization
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	DPRD Member Satisfaction Rate Percentage of Service Achievement of Bali Provincial DPRD Secretariat	100 %	2015	100 %	2015	85 %
			2016	100 %	2016	88 %
			2017	100 %	2017	91 %
			2018	100 %	2018	89 %
			2019	100 %	2019	-

Source: Bali Provincial DPRD Secretariat (2018).

Employees who are committed to their organization tend to be better than employees who are less committed (Jafri and Lhamo, 2013). Broadly speaking, employees who are committed to the organization will be more comfortable and accept organizational goals. Providing added value from employees that is shown through productivity and proactivity in every organizational goal (Ahmad and Roslan, 2016). The commitment and performance of civil servants and non-civil servants at the DPRD Secretariat is also influenced by work-family conflict. Work-family conflict occurs when there is a mismatch between the demands of family and work roles. Increased awareness of conflicts between roles experienced by employees when they try to balance the demands of work and family roles, where this conflict can lead to negative consequences such as poor performance (Ajala, 2017).

Civil servants and non-civil servants at the Bali Provincial DPRD Secretariat cannot share the roles between work roles and family roles when problems with the family or family care responsibilities often have an impact on their behavior at work. Job stress according to Velnampy and Aravinthan (2013) is a pattern of emotional, cognitive, behavioral and psychological reactions that are detrimental to aspects of the organization. Civil servants and non-civil servants at the Bali Provincial DPRD Secretariat are vulnerable to stress experienced in carrying out daily tasks.

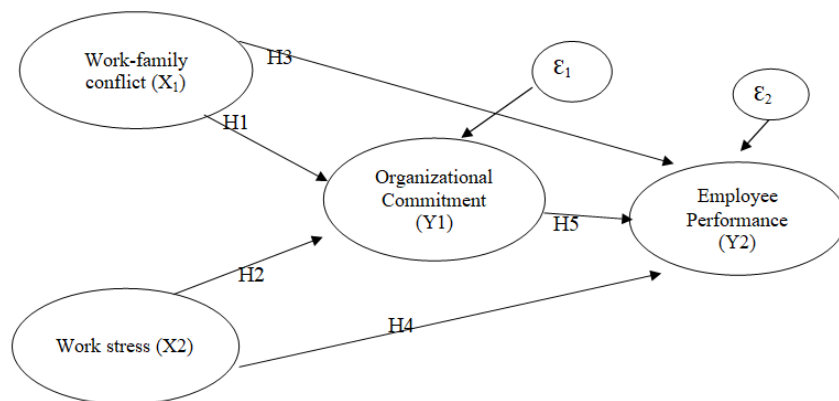


Figure 1 – Framework of study

Based on the phenomenon that occurred at the Bali Provincial DPRD Secretariat described above and the results of previous research and theoretical basis with conditions at the DPRD Secretariat of Bali Province illustrate the gap between normative and positive conditions, the research and opinions of experts and theories above that employee performance is influenced by organizational commitment, work-family conflict and work stress. Referring to the results of the assessment that has been described, the following hypothesis is formulated:

- H1: Work-Family Conflict has a significant negative effect on organizational commitment;
- H2: Job stress has a significant negative effect on organizational commitment;
- H3: Work-family conflict has a significant negative effect on employee performance;
- H4: Job stress has a significant negative effect on employee performance;
- H5: organizational commitment has a significant positive effect on employee performance.

Geroda and Puspitasari (2017) work-family conflict and organizational commitment have a negative relationship; this means that the more conflicts between work and family experience, the organizational commitment will decrease. Ahmad and Roslan (2016) employees with low work stress will have high commitment and vice versa, high organizational commitment will affect productivity. The result is work stress has a negative effect on organizational commitment. Asfahyadin et al. (2017) the results of the study prove that work-family conflict has a negative effect on performance because the higher the conflict between work and family, the employee's performance will decrease. Nart and Batur (2013) stated that job stress negatively affected performance. Irefin and Mechanic (2014) that organizational commitment has a significant positive effect on performance.

METHODS OF RESEARCH

This study categorized as associative research is causal to know the relationship of two or more variables. The population in this study were all civil servants and non-civil servants at the Bali Provincial DPRD Secretariat of 133 people. The census method is used in determining the sample because all populations are sampled.

Confirmatory factor analysis (CFA) and path analysis (Path Analysis) techniques were used in this study. CFA is used to estimate measurement models and test unidimensionality of exogenous and endogenous constructs. The relationship between research variables is work-family conflict, work stress and organizational commitment to employee performance.

RESULTS AND DISCUSSION

The questionnaire was distributed to government officials, namely civil servants and non-civil servants in the Secretariat of the DPRD in the Province of Bali, amounting to 133 people with the number of respondents set. The questionnaires that were distributed were all complete and good again, and feasible to be processed and analyzed. Furthermore, the characteristics data of respondents are presented according to the table 2.

Indicator value in work-family variable conflict equal to or more than 0.5. Time-based conflict, Strain-based conflict, Behavior-based conflict of all indicators strongly formed work-family conflict variables.

Work-family conflict variables with indicators of behavior-based conflict with a value of 0.709 are the highest indicators forming work-family conflict variables, this means that family problems often make employees behave emotionally in the office and vice versa workplace problems affect employees' emotional behavior at home. The highest mean value in the strain-based conflict indicator was 3.92. This means that the tension in the workplace often disrupts family harmony as well as the disharmony in the family disrupts employee performance at the DPRD Secretariat of the Province of Bali.

The indicator value in the work stress variable is more than 0.5. The indicator of workload, pressure, conflict, role ambiguity of all strong indicators form work stress variables.

Table 2 – Characteristics of Respondents

No	Characteristic	Category	Total (Person)	Percentage (%)
1	Age	A 20-30	50	38
		B 31-40	42	31
		C 41-50	32	24
		D >50	9	7
		Total	133	100
2	Gender	A Man	64	48
		B Women	69	52
		Total	133	100
3	Pendidikan	A Elementary school	11	8
		B Junior high school	28	21
		C High school	26	20
		D Bachelor degree	51	38
		E Master degree	17	13
		Total	133	100
4	Years of service	A 2 years <	21	16
		B 2-5 years	55	41
		C 6-10 years	44	33
		D 11-15 years	12	9
		E 15 years>	1	1
		Total	133	100

Source: Results of processing research data.

Table 3 – Factor Analysis and Mean Values

Indicator	Factor Value	Mean
<i>time-based conflict</i>	0,634	2,71
<i>strain-based conflict</i>	0,657	3,92
<i>behavior-based conflict</i>	0,709	3,15

Source: Results of processing research data.

Table 4 – Factor Analysis and Mean Values

Indicator	Factor Value	Mean
<i>Workload</i>	0,685	3,02
<i>Pressure</i>	0,817	2,71
<i>Conflict</i>	0,538	2,92
<i>Role Ambiguity</i>	0,537	2,72

Source: Results of processing research data.

Job stress variables with a Pressure indicator with a value of 0.685 are the highest indicators forming work stress variables; this means that inadequate time in carrying out tasks and targets that are too high causes employees to experience stress. The highest mean value on the workload indicator is 3.02. This means that the workload of employees is felt to be too high and sometimes the work provided is not in accordance with the expertise when working in the DPRD Secretariat of the Province of Bali.

Table 5 – Factor Analysis and Mean Values

Indicator	Factor Value	Mean
<i>Affective Commitment</i>	0,632	3,37
<i>Continuance Commitment</i>	0,592	3,27
<i>Normative Commitment</i>	0,577	3,18

Source: Results of processing research data.

The variable organizational commitment with affective commitment indicators with a factor value of 0.632 is the highest indicator forming the variable organizational commitment, this means that how an employee feels emotionally bound to the organization. The highest mean

value on the affective commitment indicator is 3.37. This means that employees feel they have an organization in the DPRD Secretariat of the Province of Bali.

Table 6 – Factor Analysis and Mean Values

Indicator	Factor Value	Mean
Quantity	0,732	3,32
Quality	0,521	3,32
Punctuality	0,515	3,40
Presence	0,522	3,35
Cooperation	0,534	3,37

Source: Results of processing research data.

Employee performance variables with quantity indicators with a factor value of 0.732 are the highest indicators forming employee performance variables, this means that how an employee always completes tasks that have become a responsibility in a certain period of time properly. The highest mean value on the indicator of timeliness is 3.40. This means that employees can always complete tasks given in a timely manner at the DPRD Secretariat of the Province of Bali.

Data testing is used by path analysis (path analysis), which is to test the patterns of relationships between variables studied so that it can show direct or indirect effects of hypothesized variables. This path analysis is carried out by the following steps.

$$R^2_m = 1 - (Pe_1)^2 - (Pe_2)^2 = 0,909$$

Based on the results of the calculation of the total determination coefficient, it can be stated that the diversity of data that can be explained by the model is 0.909 or 90.9 percent in other words the information contained in the data is 90.9 percent can be explained in the model, while the rest is 9.1 percent is explained by other variables (not in the model) and errors.

In theory trimming, non-significant pathways are discarded. Test the validity of the path coefficients on the path for direct influence is the same as in the regression by looking at the level of significance (sig) <0.05. The following is the level of significance of each variable.

Substructure 1:

$$X1 = 0.028 < 0.05; X2 = 0,000 < 0.05$$

Substructure 2:

$$X1 = 0,000 < 0.05; X2 = 0,000 < 0.05; Y1 = 0.013 < 0.05$$

Based on these results it can be stated that all the lines built in the previous construct model are declared valid.

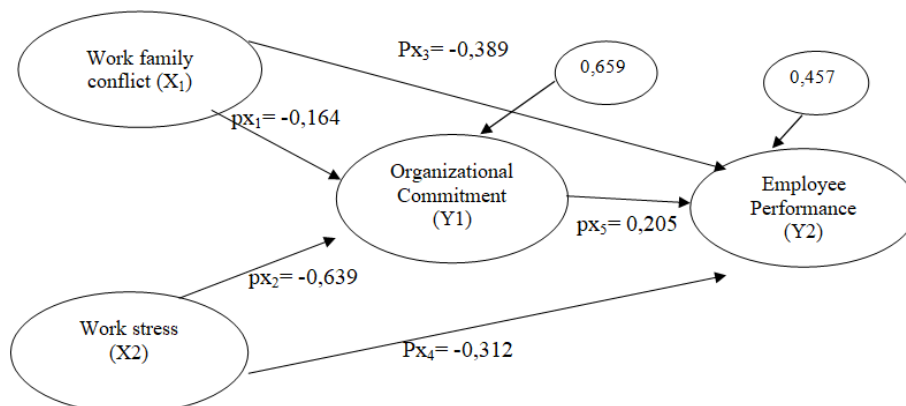


Table 7 – Results of Path Analysis Coefficients

Contributions between Variables	Path Coefficient (Beta)	t Value	Sig. value	Information
Work-Family Conflict (X1) against Organizational Commitment (Y1)	-0,164	-2.215	0,028	Negative Significant
Work Stress (X2) on Organizational Commitment (Y1)	-0,639	-8.633	0,000	Negative Significant
Work-Family Conflict (X1) on Employee Performance (Y2)	-0,389	-5.532	0,000	Negative Significant
Job Stress (X2) on Employee Performance (Y2)	-0,312	-3.604	0,000	Negative Significant
Organizational Commitment (Y1) to Employee Performance (Y2)	0,205	2.507	0,015	Positive is significant

Source: Results of processing research data.

The direct effect of work-family conflict on organizational commitment. The calculation results show that Beta -0.164 with a value of t count -2.215 with a significance level of 0.028 smaller than the probability value of 0.05 or $0.028 < 0.05$, the path analysis coefficient is negative significant, so work-family conflict has a significant negative effect on commitment organizational. Significant negative influences can be interpreted, conflicts between roles experienced by employees have a negative impact on employee commitment in completing work.

The direct effect of work stress on organizational commitment. The results of the calculation show that Beta -0.639 with the value of t count -8.633 with a significance level of 0,000 smaller than the probability value of 0.05 or $0,000 < 0.05$, the path analysis coefficient is significantly negative, so work stress has a significant negative effect on organizational commitment. Significant negative influence can be interpreted, the pressure at work and conflict with family has a negative impact on the commitment of employees in completing work.

The effect of direct work-family conflict on employee performance. The calculation results in the Table show that Beta -0,389 with the value of t count -5,532 with a significance level of 0,000 smaller than the probability value of 0,05 or $0,000 < 0,05$, the path analysis coefficient is negative significant, so work-family conflict has a significant negative effect on employee performance. Significant negative influence can be interpreted with family problems that have a negative impact on employee performance in the workplace.

The direct effect of work stress on employee performance. The results of calculations in the Table show that Beta -0.312 with the value of t count -3.604 with a significance level of 0,000 smaller than the probability value of 0.05 or $0,000 < 0.05$, the path analysis coefficient is significantly negative, so work stress has a significant negative effect on performance employee. Significant negative influence can be interpreted that stress experienced by employees has a negative impact on employee performance in the workplace.

Direct influence of organizational commitment on employee performance. The calculation results in the Table show that Beta is 0.205 with a value of 2.507 t with a significance level of 0,000 smaller than the probability value of 0.05 or $0,000 < 0.05$, the path analysis coefficient is significantly positive, so organizational commitment has a significant positive effect on employee performance. Significant positive influences can be interpreted as attachments; emotional feelings and sense of employee ownership of the organization have a positive impact on the performance of employees in the workplace.

DISCUSSION OF RESULTS

Work-family conflict has a significant negative effect on organizational commitment. These results indicate that role conflict experienced by employees in the family or work influences emotional behavior that adversely affects the commitment of employees at work. Work-family conflict was measured through time-based conflict, strain based-conflict, behavior-based conflict.

Based on employee ratings, work-family conflict makes employees experience stress and emotional causes caused by conflict in the workplace or in the family. Employees find it difficult to divide the time between work time and family time, workplace tensions often interfere with family harmony and conversely tension in the family often affects performance. Problems faced by employees in the workplace often have an impact on emotional behavior in the family or vice versa. So as to make the organizational commitment of employees to be low.

The results of Geroda and Puspitasari (2017) work-family conflict and organizational commitment have a negative relationship; this means that the more conflict between work and family experience the organizational commitment will decrease. Jenitta (2013) states that work-family conflict has a negative effect on affective commitment, ongoing commitment. Hatam et al. (2015) stated that work-family conflict had a negative effect on organizational commitment.

Job stress has a significant negative effect on organizational commitment. This shows that stress experienced by employees often causes stress or frustration in carrying out daily tasks. Job stress is measured by workload, pressure, conflict, role ambiguity.

Based on employee appraisal, excessive workload and sometimes the work provided is not in accordance with expertise, less time in carrying out work and targets that are too high, conflict with family and coworkers, my income is not in accordance with the work done. Stress makes employee organizational commitment low.

The research conducted by Bhatti et al. (2016) by examining the banking sector in Pakistan with the results of work stress negatively affects organizational commitment, where work stress is the main cause of decreased commitment. Nart and Batur (2013) in their study stated that work stress has a negative impact on organizational commitment. Ahmad and Roslan (2016) state that employees who do not experience stress will have high commitment and vice versa. High organizational commitment will affect productivity. The result is stressful work that has a negative effect on organizational commitment.

Work-family conflict has a significant negative effect on employee performance. These results indicate that family role conflict and work affect emotional behavior which adversely affects employee performance. Work-family conflict was measured through time-based conflict, strain based-conflict, behavior-based conflict.

Based on employee ratings, work-family conflict makes employees experience stress and emotional causes caused by conflict in the workplace or in the family. Employees find it difficult to divide the time between work time and family time, tensions in the workplace often interfere with family harmony and conversely tension in the family often affects performance. Problems faced by employees in the workplace often have an impact on emotional behavior in the family or vice versa. So as to make employee performance low.

Karakas and Sahin Research (2017) at a hotel management in the western black sea province in Turkey that work-family conflict had a negative effect on performance. Warokka and Febrillia (2015) examined four major banks in Indonesia that the negative relationship between work-family conflict and performance. Ajala (2017) studied mothers who worked in government hospitals in the Nigerian town of Nigeria that work-family conflict had a significant negative effect on performance.

Job stress has a significant negative effect on employee performance. This shows that stress experienced by employees often causes stress or frustration in carrying out daily tasks. Job stress is measured by workload, pressure, conflict, role ambiguity.

Based on employee appraisal, excessive workload and sometimes the work provided is not in accordance with expertise, time is lacking in carrying out work and targets are too high, conflict with family and coworkers, income is not in accordance with the work done. Stress makes employee performance low.

Research conducted by Arbabisarjou et al. (2013); Ratnawat and Jha., (2014) work stress is a current organizational problem that provides low performance where work stress has a negative effect on performance. The same results from the study of Banerjee and Mehta (2016) where job stress as the main contributor to stress levels, the effect of stress proved to be able to reduce performance.

Organizational Commitment has a significant positive effect on employee performance. This shows that the assurance of employees in accepting the values adopted by the organization has a strong impact on the achievement of the organization. Organizational commitment is measured by affective commitment, continuance commitment, normative commitment.

Based on employee ratings, employees feel an emotional bond, feel an attachment to the organization, little choice if they leave the organization, their lives will be disrupted, employees feel they have a moral obligation to the organization and the organization has provided something valuable to employees. So that organizational commitment makes employee performance good.

Research Fu & Deshpande (2014) examined an insurance company in China that stated organizational commitment had a positive influence on performance, reinforced by the results of the study of Triwahyuni and Ekowati (2017) that organizational commitment had a significant influence on performance. Irefin and Mechanic (2014) examined the effect of employee commitment on coca cola companies in Nigeria, where organizational commitment has a positive effect on performance.

Work-family conflict has a significant negative effect on employee performance through organizational commitment. These results indicate that role conflict experienced by employees in the family or work affects emotional behavior that adversely affects commitment, due to the low commitment caused by conflict in the family environment or work environment which adversely affects employee performance.

Work-family conflict through time-based conflict, strain based-conflict, behaviour-based conflict make employees experience stress and emotional causes caused by conflict at work or in the family. Employees find it difficult to divide the time between work time and family time, workplace tensions often interfere with family harmony and conversely family tensions often affect performance, problems faced by employees at work often affect emotional behavior in the family or vice versa. So as to make employee commitment to be low this has an impact on poor performance.

Previous research conducted by Cristine (2010), Harijanto (2013) and Geroda (2017) suggested that organizational commitment does not have a significant role as an intervening variable between work-family conflict on performance.

Job stress has a significant negative effect on employee performance through organizational commitment. This shows that the stress experienced by employees often causes stress or frustration in carrying out daily tasks that are very strong affecting organizational commitment that adversely affects performance.

Job stress on workload, pressure, conflict, role ambiguity contributes negatively where the workload is excessive and sometimes the work given is not in accordance with expertise, time is less in carrying out work and targets are too high, conflict with family and colleagues income that is not in accordance with the work performed. Stress makes employees' commitment low, with implications for low performance.

Previous research conducted by Nursyami (2012), and Masihabadi et al., (2015) said that work stress through organizational commitment had a negative impact on employee performance.

Based on the results of research conducted by the authors there are implications that can be generated from this study. First, in the work-family conflict variable, the results showed that the three indicators of time-based conflict, strain-based conflict, behavior-based conflict had relatively good average values, which meant that the time spent working prevented the time needed to work, fulfil family obligations. Employees find it difficult to divide the time between work and family. Tensions experienced by employees often affect or disrupt family harmony and disharmony in the family often disrupts employee performance. Family problems faced by employees cause emotional behavior in the workplace and family problems faced by employees causing emotional behavior in the family where every government employee should be able to professionally divide roles between work and family and commit and perform professionally to achieve successful work plans (Renja) . The lowest value lies in a time-based conflict where the time used at work blocks the time needed

to fulfill family obligations, find it difficult to divide the time between work and family because it requires professional work and evaluation within the government of the Bali Provincial DPRD Secretariat.

Second, in the work stress variable, the results show that the four indicators, namely workload, pressure, conflict, ambiguity role, have an average score that is quite good. This means that employees feel the workload given is excessive. Employees feel the time at work is inadequate, the job target is too high, problems with family and coworkers often hamper performance. The work done is different from the analysis of the position and the income received is not in accordance with the job. But the lowest value lies in the workload of the work performed by employees often not in accordance with expertise so that it often causes stress, this should be a concern for government employees in the DPRD Secretariat of the Province of Bali.

Third, in the organizational commitment variable, the results of the three indicators are affective commitment, continuance commitment, and normative commitment. The three average values of these indicators are quite good where employees have an emotional bond. Having a sense of belonging and few choices left the company. There are consequences if leaving the organization and organization has provided something of value. have a moral obligation to the organization but the lowest value lies in continuance commitment where the organization must be able to maintain and foster a good moral sense among fellow workers so that organizational goals can be achieved at the DPRD Secretariat of the Province of Bali.

Fourth, in the employee performance variable the results of the five indicators are obtained, namely quality, quantity, timeliness, attendance and cooperation. The five average values of these indicators are quite good, where employees can complete tasks in accordance with predetermined targets, employees are able to complete tasks that are the responsibility in a certain period of time. Employees can complete tasks that have become responsibilities with satisfactory results and work results are no doubt because they are in accordance with the standards. Employees never delay work that has become their responsibility. Present on time at work and present to work in accordance with existing regulations. Can foster collaboration with colleagues and work well when working in teams. But the lowest value lies in quality, there needs to be a re-evaluation of the workload of each employee so that the targets that have been determined can be achieved by government employees in the DPRD Secretariat of the Province of Bali.

CONCLUSION AND SUGGESTIONS

Work-family conflict has a significant negative effect on organizational commitment which means that employees are very susceptible to conflict with family or work environments that suffer badly from harmony in the workplace and family. When experiencing conflict in the family or work environment often emotional behavior can be seen as a result of low organizational commitment.

Job stress has a significant negative effect on organizational commitment which means that the workload charged at work is too high. The work provided must be in accordance with expertise. Working time with work targets must be adjusted to be balanced. Conflicts with family or with colleagues often affect performance. The work done is often not in accordance with the analysis of the position and the income provided must be in accordance with the job.

Work-family conflict has a significant negative effect on employee performance, which means that employees are very vulnerable to experiencing conflict with family or conflict in the work environment that has a negative impact on family life and work harmony. Employees when experiencing conflict both in their family or work environment often behave emotionally so that it has a negative impact on employee performance.

Job stress has a significant negative effect on employee performance which means that the workload charged at work is too high. The work provided must be in accordance with expertise. Work time and work target must be balanced. conflicts with family or with colleagues often affect performance. The work carried out is often not in accordance with the

analysis of the position and the income provided must be in accordance with the workload in order to be able to improve employee performance.

Organizational Commitment has a significant positive effect on employee performance which means that employees have an emotional bond and a sense of belonging. Employees have little choice to leave the organization and there are consequences if they leave the organization. The organization has provided something valuable for employees. Employees have a moral obligation to the organization so that it has a positive impact on employee performance.

Based on the results of this study, some suggestions that can be used as consideration in determining future policies, especially those related to work-family conflict, work stress, organizational commitment and employee performance.

In anticipating the impact of work-family conflict so that it is better for a civil servant and non-civil servant in the Regional Representatives Council of Bali Province to be able to divide roles between work and family so that each role can run in harmony. Being able to manage relationships that are good in the family environment or in the workplace so as to foster positive energy in each role, which directly impacts on harmony in the family and optimal performance in the workplace.

In anticipating the impact of work stress, it is best to build a harmonious relationship with colleagues in order to run smoothly in carrying out daily tasks. Review the main tasks and functions so that every civil servant and non-civil servant workload is in accordance with their respective duties and employees no longer take excessive work and also employees are assigned according to their respective expertise in order to avoid stress.

In increasing organizational commitment the organization should be able to foster a sense of ownership and emotional ties and moral obligations in the DPRD Secretariat of Bali Province so that employees are willing to accept all the values adopted by the organization and are committed to achieving organizational goals.

In improving employee performance, the organization in the Bali Provincial DPRD Secretariat should pay attention to aspects of work-family conflict, work stress and aspects of organizational commitment to improve employee performance and operationally each employee must be able to maintain harmonious relationships in the family environment. positive in the work environment. Operationally the work target for each employee must be adjusted to the time at work so that there is no fatigue and stress because the workload or target is too high due to limited time and each employee must be adjusted to the main tasks and functions in order to improve performance employee.

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THE EFFECT OF JOB CRAFTING AGAINST PRODUCTIVE BEHAVIOR

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ABSTRACT

This study aims to know whether there is an influence between job crafting on productive behavior of startup company employees in Indonesia. The sample in this study was carried out on 178 employees who work in Startup Company. The sample consisted of 103 of women and 75 of men. The sampling technique used in this study was random sampling. Data analysis in this study was done using Smart PLS 3.0 program. The results showed that job crafting has a direct and significant influence on productive behavior of startup companies' employee.

KEY WORDS

Employees, Indonesia, startup companies, productivity.

In the current digital era, many business people make changes and adjustments in a modern and dynamic manner with the aim of meeting people's needs. One way to do this is to change the trading system. Business people no longer carry out conventional trading activities, but start trading using digital technology.

Trades by utilizing digital technology, is known as online business. These activities are certainly of interest to many people and even this has become a separate trend because this activity can make it easier for the community to make ends meet. People no longer need to go and look for their needs in certain locations, now people can carry out these activities using digital media even when at home. With the convenience felt by the community, this has an impact on the growth of business startup companies in Indonesia.

Perdani, et al (2018) argued that startups refer to companies that move by using information technology and the internet because they usually operate through websites. The development of startups in Indonesia is classified as very fast in various business fields, such as e-commerce, education, games, lifestyle, science, agribusiness, health, insurance, securities, finance and property. Referring to the startup website in the world, Indonesia ranks 5th in the world with 2,108 business startup companies (starupparking.com). The increasing growth in the number of startups in Indonesia is proportional to the number of failures that hit startup companies.

Perdani et al, (2018) stated that human resources is a factor that affects the growth of business startup companies. Sukandar (2019) employees are often unable to survive and produce maximum performance due to the influence of work and cultural rhythms in the company. Even though the success of startup companies also has a positive impact on the economy in Indonesia. Miroslav (2013) stated that the existence of economic growth and wealth of a country are the result of employee productivity. Productivity can be seen from the perspective of individual employees as indicated by productive behavior. Jex and Britt (2008) explained that productive behavior is the behavior of employees who make a positive contribution to the goals and objectives of the organization.

Suhariadi (2001) explained that there are two factors that can lead to productive behavior of employees at work, namely the existence of environmental factors and individual factors. Furthermore, Suhariadi (2001) explained that environmental factor is a work atmosphere that can affect employees every day in achieving the goals set by the organization which indirectly lead to productive behavior, while individual factor is individual characteristics that appear in the form of mental attitude and contain the meaning of the desires and efforts of individuals who always try to bring out and enhance productive behavior. Some previous studies explained that individual factors that can influence the

emergence of productive behavior are motivation and intelligence (Suhariadi, 2002; Sumarti, 2012), meaningfulness of life (Herawati and Budiharto, 2010), self-efficacy (Prastia, et al., 2017).

To strengthen the problems in this study, interviews were conducted to get an overview of the problems often faced by employees. Based on the results of interviews conducted with startup company employees, it is known that they are often prosecuted for working on two different roles, must be ready at any time to deal with changes, flexibility related to working hours or job locations, always updated regarding market demand or needs. Thus, employees of business startup companies are expected to be able to make active change efforts that can have a positive impact on work. The change effort is known as job crafting. Tims et al (2012) explained that job crafting is a form of change that employees make on their own initiative to balance demands and resources at work. Wrzesniewski (Dvorak, 2014). argued that job crafting, which is a personal initiative to make changes in his work physically and cognitively involving tasks, relationships at work, and the way individuals think about their work to make it more meaningful.

Ghitulescu (2006) explained that the main characteristic of job crafting is the initiative of employees to change job duties or characteristics, in line with their character or preferences. The initiative is based on personal considerations, namely to elaborate the character of the task or work with oneself and not directly aimed at achieving the organization. Employees who take the initiative to change aspects of their work environment tend to contribute to the effectiveness of the organization. Suhariadi (2001) explained that the process of the emergence of productive behavior is related to the individual's self-condition, which can be interpreted as whether there are seeds in the individual that enable the individual to be energetic and act productively. Leana, Appelbaum and Shevchuk (2009) factors that can influence employees having high performance is job crafting. Lichtenthaler et al (2018) states that employees who have crafting jobs tend to have motivation to work while motivation is a factor in the emergence of productive behavior (Suhariadi, 2002).

Research on job crafting on productive behavior is the first study conducted. But previous research, regarding the variables in this study has been widely carried out but does not connect the two variables directly. In addition, these two variables have not been studied on employees who work for startup companies. Therefore, the researcher was interested in conducting a study of the effect of job crafting on productive behavior of startup company employees.

METHODS OF RESEARCH

This study used quantitative method in nature of explanatory. Karlinger (2006) explained that the purpose of the study is to explain the causal relationship of a variable through testing the hypothesis. The subjects of this study were employees who work for startup companies in Indonesia. We invited employees to fill out our questionnaires through online-based applications. The sampling technique used in this study was random sampling. The number of samples filling out the questionnaire in this study was 178 employees, on the basis of the consideration that it was not known exactly how many employees in startup companies in Indonesia. The study sample was divided into 103 (58%) women and 75 (42%). In addition, the average age of the sample was 28 years (SD=3.49).

The measurement in this study used productive behavior questionnaire belonging to Suhariadi (2001), the measuring instrument consisted of 14 items ($\alpha = 0.670$) and measured the dimensions of effective behavior and efficient behavior. This study used Job Crafting Scale compiled from the dimensions of task crafting, relational crafting, and cognitive crafting (Berg, Dutton, and Wrzesniewski, 2013) with a valid number of items 24 ($\alpha = 0.918$). In this study, data analysis used inferential data analysis technique. The use of inferential data analysis techniques was to test hypotheses using Smart Partial Least Square 3.0. Hair, et al (2012) explained that the use of SEM-PLS aims to predict and develop theories, besides that the use of SEM-PLS has the advantage that the sample used does not have to be a large number.

RESULTS AND DISCUSSION

Data analysis technique used to test hypotheses was analytical techniques using Smart PLS. The use of this analysis technique was adjusted to the purpose of the study which aimed to know the direct influence of the independent variable on the dependent variable.

Table 1 – Results of analysis

n/n	Coefficient Path	T-Statistics	Information
Job Crafting → Productive Behavior	0.688	11.407	Positive and Significant

The findings are shown in table 1 indicates result of the estimation results of the direct influence of job crafting on productive behavior is known to be 0.688 with a t-statistic value of 11.407 greater than the t-count value > 1.96 which indicates that there is a significant positive influence between job crafting and productive behavior. This means that an increase in job crafting will result in an increase in productive behavior, and vice versa if the decline in job crafting will result in a decrease in productive behavior.

Based on the results of this study, employees with job crafting will make changes in work with the aim of getting better results. Tims, et al. (2012) job crafting can be realized in the efforts of employees in maximizing work resources, using relationships and attracting benefits from relations to work, reducing things that can burden work and the readiness of employees to accept new work challenges. These efforts can be realized because, employees are able to direct the energy they have to change the characteristics of a job in order to achieve a goal and value considered more beneficial (Tims et al, 2015).

Suhariadi (2001) employees with productive behavior will pay attention and consider the effectiveness and efficiency in achieving organizational goals. Gilmore (1974) a productive person will emphasize a positive contribution to his environment where he resides. With the existence of constructive, imaginative, and creative actions from individuals within an organization, it is expected to increase productivity. Productive individuals describe the potential, perception and creativity of someone who always wants to contribute the ability to benefit themselves and their environment.

CONCLUSION

Based on the results of the study it can be concluded that Job crafting has a positive and significant influence on productive behavior. The results of the study show that 100% of the sample is millennial generation employees. Therefore organizations need to provide opportunities for employees to be able to make their own decisions in doing work. This can give employees the opportunity to use the skills employees have at work.

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FINANCIAL FEASIBILITY ANALYSIS OF PEPPER FARMING IN NORTH LAMPUNG REGENCY OF LAMPUNG PROVINCE INDONESIA

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ABSTRACT

This research was aimed at investigating the profitability and feasibility of pepper farming, which was conducted in North Lampung Regency of Lampung Province. The data were collected from November 2014 – February 2015 from 53 farmer respondents. This research used both primary and secondary data. The former was collected through survey by using questionnaires and interview with the farmers, while the latter was collected from the research-related institutions. The data were then analyzed through financial analysis including profit analysis, R/C ratio, B/C ratio, Net Present Value (NPV), and Internal Rate of Return (IRR). The results show that pepper farmings are profitable with R/C ratio of 5.98 and B/C ratio of 4.98 which are feasible to develop with the NPV value of Rp. 177.403.489,66. The Net B/C which was obtained from the calculation of the 15-year pepper farming is 10.87 with an IRR of 75%.

KEY WORDS

Feasibility, financial analysis, pepper, profitability, ratio.

Indonesia is the second largest producer of pepper after Vietnam. There is every prospect of success for pepper market for it is highly needed to meet the world market, black pepper in particular. In addition to other agricultural commodities, pepper is one of the commodities that plays an important role in the economy, both as a source of income and farmers' livelihoods. According to International Pepper Community (IPC), the total amount of black pepper exports during the period of 2011 from six major exporting countries (Brazil, India, Indonesia, Malaysia, Vietnam, and Sri Lanka) was 242,450 tons. In December 2010, the price of black pepper composite was recorded at US\$4,572 per metric ton, and white pepper at US\$7,025 per metric ton, which was higher than the composite price in 2009 which was in row US\$3,031 per metric ton and US\$4,404 per metric ton. The total amount of pepper production in Indonesia in 2011 was 33,000 tons (18,000 tons of black pepper and 15,000 tons of white pepper) (IPC, 2012).

The data taken from the Ministry of Agriculture of the Republic of Indonesia (2012) indicate that the volume of Indonesia pepper exports had fluctuated with a declining trend since 2008 to 2012. The decline in demand of the pepper was because the destination countries were experiencing economic crisis. Although Indonesia's pepper exports went into a decline, however, the pepper production significantly increased. It shows that pepper plants in Indonesia still have the strength and chance to be cultivated and developed because the country has ample area and suitable climate for pepper plants.

The pepper production during the periods of 2008 to 2012 tended to increase, yet the area of pepper plantation decreased that the productivity increased with an average productivity of 748.40 tons/ha. The productivity is actually still low due to the intensity of pests/diseases attacking the pepper plants. Farmers have not yet used superior pepper seeds and well maintained the plants. In addition, they are also lack of capital (Directorate General of Plantation of the Republic of Indonesia, 2013).

Based on data taken from the Center for Data and Information Technology of the Secretariat General of the Ministry of Agriculture of the Republic of Indonesia (2013), Lampung Province is one of the largest pepper production centers in Indonesia. Pepper is one of income sources for Indonesia, therefore support from all parties to encourage improvement of quality and export of pepper from Lampung Province is highly needed. The

production of pepper in the province has made an important contribution to the economy of the local people and the province itself. This situation, of course, is supported by the existence of large area of plantation, geographical location, temperature, and precipitation appropriate for its growth.

Based on BPS (the Central Bureau of Statistics) data of Lampung Province (2013), the pepper plants area and production in Lampung Province in the periods of 2004 – 2012 fluctuated with an average area of 63,969.38 hectares, an average production of 22,734.88 tons, and an average productivity of 0.36 ton/ha. The productivity is much lower than the average productivity of pepper plants in Indonesia. It is caused by the age of the pepper plants that have been more than 10 years.

One of the biggest pepper producers in Lampung Province is North Lampung Regency. It is the largest area of pepper plantation and the largest pepper production in Lampung Province. The productivity is much higher than the average productivity in Lampung Province. The low productivity of pepper plants reduces the farmers' income. Therefore, in order to increase the income of the pepper farmers, the rejuvenation of pepper plants should be done in several pepper production centers in the regency.

Based on the descriptions above, the research questions underpinning this study are as follows:

1. Is pepper farming in North Lampung Regency profitable?
2. Are pepper plants cultivated in North Lampung Regency financially feasible?

METHODS OF RESEARCH

This research was conducted in North Lampung Regency, Lampung Province, Indonesia. This location was purposively chosen because this regency is the largest pepper producer in Lampung Province with a large number of pepper farmers.

The sampling technique was done through simple random technique with a total number of 53 farmer respondents taken from the following formula (Sugiarto, 2003). The data were collected through observation, interview, documentation, and questionnaires.

$$n = \frac{NZ^2S^2}{Nd^2 + Z^2S^2}$$

Where: n - Sample; N – Population; S² - Sample Variant (5%); Z - Confidence Level (95% = 1.96); d - degree of deviation (5%).

The population of pepper farmers in the North Lampung Regency is 165 farmers, 20 of them have rejuvenated their plants and the other 145 farmers have not. From the population, the sample was taken by using Sugiarto's formula that the number of samples obtained for financial feasibility analysis and analysis of factors that influenced their decision making for pepper plants rejuvenation was 53 farmers.

The data were then analyzed in terms of revenue analysis, R/C ratio, B/C ratio, Net Present Value (NPV), and Internal Rate of Return (IRR).

According to Hernanto (1993), the amount of income earned is an assessment of the success of a farm. To perform a farming analysis, it is necessary to know the amount of revenue and expenditure or the amount of input required during the farming process. To calculate the income, the equation below is used.

$$\pi = Y.Py - \sum Xi.Pxi$$

Where: π - Income or profit (Rp); Y - Production Result (Kg); Py - Production Result Price (Rp/Kg); Xi - Production Factor, $i = 1,2,3,\dots,n$; Pxi - Production Factor Price (Rp/unit).

R/C Ratio refers to the ratio between revenue of an investment with the cost that has been spent. The formula is as follows:

$$R/C \text{ Ratio} = \frac{R}{C}$$

B/C Ratio refers to the ratio between revenue or benefit of an investment with the cost incurred. The formula is as follows:

$$\text{Gross } B/C \text{ Ratio} = \frac{B}{C}$$

Where: B - Benefit; C - Cost.

The eligibility criteria are as follows:

- If $B/C > 1$, then the business is feasible;
- If $B/C < 1$, then the business is not feasible to implement;
- If $B/C = 1$, then the business is in a break even point position.

Net Present Value (NPV), a.k.a net cash value, is a method of calculating the difference between benefits or revenues and the costs or expenses. This calculation is measured by using current money value with the following criteria:

- If $NPV > 0$, then the business is feasible;
- If $NPV < 0$, then the business is not feasible;
- If $NPV = 0$, then the business is in a break-even point position.

Simply put, the formula is as follows:

$$NPV = PV \text{ Benefit} - PV \text{ Costs} = B - C$$

Where: B = benefit that has been discounted; C = cost that has been discounted.

The Internal Rate of Return (IRR) refers to an interest rate indicating the net present value (NPV) equal to the sum of all cash flow from a particular project. In other words, it can be referred to as an interest rate that yields $NPV = 0$.

The criteria are as follows:

- If $IRR > 1$, then the business is feasible;
- If $IRR < 1$, then the business is not feasible;
- If $IRR = 0$, then the business is in a break-even position.

The formula is as follows:

$$IRR = i + \frac{NPV (i'' - i)}{NPV' - NPV''}$$

Where: I - discount rate at this time; i'' - discount rate that makes the NPV negative.

RESULTS AND DISCUSSION

Based on the results of the study, 96.83 percent of farmer respondents are in the productive age group. This means that they are, based on their physical capabilities, expected to conduct their farming activities effectively and efficiently. The number of farmers who graduated from high school or higher is 26.99 percent. This means that almost half of them are still in a relatively low education level that they are still unable to adopt or adapt information, innovation, or technology quickly. Those who have rejuvenated their pepper plants have more than 10 years of farming experience; most of them have an 11- – 20-year farming experience. This indicates that farmers who dare to rejuvenate their pepper plants are those who already have adequate skills to cope with and reduce the risk of failure in running their farming. The average of the farming area is in the range of 0.5 to 1.0 ha, 73.02 percent of the farmers. Most of the farmers who have rejuvenated their pepper plants tend to have a farming area of more than 1 ha.

Production factors used include seeds, fertilizers, pesticides, and labor. The seeds used for pepper farming in North Lampung Regency are mostly obtained from the government and partly obtained from self-nurseries. The seeds used in pepper plant rejuvenation are mostly from local farmers. The seeds of pepper plants are cuttings of pepper crops grown on local pepper farms. There are three kinds of varieties of seedlings used to rejuvenate pepper plants in the regency, namely seeds from soil or worm seeds, seedlings from hanging tendrils, and seeds from *stolon* tendrils.

The fertilizers used by the pepper farmers in the regency are as follows: NPK and Manure. The average of fertilizer use for pepper farming in the regency for 1.14 ha plantation area is as follows: 74.53 kg of NPK fertilizer and 429.25 kg of manure, while per hectare, 65.29 kg of NPK fertilizer and 376.03 kg of manure. They apply neither *urea*, SP 36, nor KCL fertilizer because the price is too expensive. However, the lack of *urea*, SP 36, and KCL fertilizers can be replaced by adding NPK fertilizer.

Farmers do not use pesticides because they consider that HPT and weeds can still be technically controlled. The type of pesticide that is most frequently used by them is herbicide which is used to control weeds. The herbicide brand commonly used by them is *Lindomin*.

The activities of pepper farming in North Lampung Regency are mostly done by hiring workers who are neither family members nor relatives. The activities carried out by the hired workers include planting, fertilizing, and harvesting which requires a short time with a lot of energy. The activities that are usually performed by the workforce who are family members include HPT control, weed control, and pepper drying after picking.

The equipment used in pepper farming include hoes, machetes, crosses, bolts, triangular ladders, tarps, and crowbars. The depreciation of equipment in this study is calculated based on the linear calculation method of depreciation in which the number of equipment is multiplied by the purchase price which is then divided by the economic age.

Transportation cost refers to the cost spent to transport pepper crops from the plantation area to the farmer's house for further treatment. The common means of transportation used by the pepper farmers to transport them is motorcycle. The average transportation cost incurred by the farmers to transport the pepper crops from the plantation area to their house is Rp117.00/kg.

The average production of pepper in North Lampung Regency in 2014 was 407.44 kg/ha. The highest average production of pepper was in the age range of 4 to 11 years of pepper plants with an average production range of 800 to 1100 kg/ha. In addition to pepper plants, pepper farmers also have other plants on their pepper plantations because pepper plants, at a certain time, cannot produce at all. Therefore, all farmers rely on other crops besides pepper to meet their needs.

The results show that in farmer respondents' pepper farming, they use various inputs such as seeds, fertilizers, pesticides, labor, and various agricultural tools. The pepper seeds planted by them are mostly obtained from their own nurseries, however, some of which are also provided by the Agriculture Office of the local government of North Lampung Regency.

In addition, the respondent farmers also apply other inputs when planting pepper including the use of NPK fertilizer and that of manure. However, in time, they only apply manure as the main input to their pepper plants. They also apply pesticides – fungicide and herbicide – to control the fungi and weeds that exist around the pepper plants so as not to exceed the threshold considered to be detrimental to their pepper farming.

Most of the activities of pepper farming are done by hired workers from outside the family. The activities that are usually performed by the workforce from inside the family include fertilization, weeding, HPT control, and pepper drying after picking.

They also usually use several equipment including hoes, machetes, small hoes, hole digging tools, tarpaulins, triangle ladder, and crowbar. In addition, they make use of their own motorcycle or rent motorcycle as a means for transporting their pepper crops from the plantation to their house. A pepper plant begins to produce in the fourth year after planting.

The productive pepper farming is between the ages of 4 – 12 years after planting. After 12 years, the production of pepper plants decreases significantly. Based on the results of the study, the pepper farmers in North Lampung regency still let their pepper plants reach the

age of more than 12 years and have not yet rejuvenated the plants because they feel that the production is still quite satisfactory and the price of the pepper output is soaring to reach Rp100.000.

Based on the calculation of financial evaluation of pepper farming for 15 years, it can be seen that the NPV obtained by the pepper farmers for 15 years is Rp5.351.036.689,91, with a Net B/C value of 147.65, Gross B/C of 5.88, and IRR of 1.56.

It shows that the profit that pepper farmers have obtained for planting pepper for 15 years is equal to, in the present, Rp5.351.036.689,91. The net value of B/C indicates that the profitability ratio of pepper farmers have obtained for investing in pepper farming for 15 years is 147.65 and the profit ratio obtained compared to the cost incurred for the pepper farming is 5.88. The IRR shows that over the last 15 years, the pepper farming is still feasible to do as long as the bank working capital loan interest rate does not exceed 156 percent.

It indicates that the pepper farming that has been done by the pepper farmers for 15 years lately is profitable to do. However, to find out whether the pepper farming in the future remains profitable and feasible to do, a financial feasibility analysis of the pepper farming in North Lampung Regency is necessary to perform.

Based on the results of this research (See Table 2 in Appendices), the value of R/C ratio of 5.98 is >1 . It means that the pepper farming is feasible to run. The value B/C Ratio of 4.99 is >1 means that the pepper farming is profitable. The NPV obtained from the pepper farming for 15 years is Rp177.403.489,66.

The net B/C obtained from the calculation of pepper farming for 15 years is 10.87. This means that the net profit received by farmers by expending an investment of Rp1 for 15 years is Rp10.87. The gross B/C of pepper farming is 4.72 which means that by spending Rp1 the farmers earn Rp4.72. The IRR of the pepper farming is equal to 0.75 or 75% which means that the pepper farming will experience a loss if the bank lending rate reaches 75%.

The feasibility analysis indicates that the pepper farming in North Lampung regency is feasible to run and develop. This supports the policy of the local government of North Lampung Regency in terms of pepper farming development. Based on the results of the evaluation and financial feasibility analysis of the pepper farming for 15 years before and 15 years after in the future, it can be stated that the pepper farming is profitable and feasible to develop in the future.

The analysis of the pepper farming shows that it is potentially profitable in the future, however, the time taken for the pepper plants to produce become one of considerations for farmers to rejuvenate their pepper plants that have reached the non-productive age. The costs incurred for pepper farming and those of incurred for household purposes are also other factors that become their considerations to rejuvenate their pepper plants.

CONCLUSION AND SUGGESTIONS

Based on the results and discussion, it can be concluded that the pepper farming in North Lampung regency is profitable with a value of R/C ratio of 5.98 and that of B/C ratio of 4.98. It is feasible to develop with an NPV value of Rp177.403.489,66. The Net B/C obtained from the calculation of a 15-year pepper farming is 10.87 with an IRR of 75%. In addition, this study has some implications and suggestions. Pepper farmers are expected to provide more nutrients such as manure and chemical fertilizer additions in order to increase pepper production. The government is also required to provide experts to counsel the local pepper farmers on how to successfully run and cultivate a pepper farming in terms of appropriate methods of tillage, when to apply additional fertilizers, and appropriate strategies to develop pepper farming.

APPENDIX

Table 1 – Analysis of Financial Evaluation of Pepper Farming in North Lampung Regency

Crop Age Tanaman (Year)	Revenue (Rp)	Total Cost (Rp)	Net Benefit (Rp)	CF 20,87 (%)	PV Rv (Rp)	Pv Ct (Rp)	NPV (Rp)
1	0,00	10.263.653,33	(10.263.653,33)	1,21	0,00	12.405.677,78	(12.405.677,78)
2	0,00	8.148.528,57	(8.148.528,57)	1,46	0,00	11.904.639,18	(11.904.639,18)
3	0,00	6.896.222,22	(6.896.222,22)	1,77	0,00	12.177.743,27	(12.177.743,27)
4	83.750.000,00	13.258.487,50	70.491.512,50	2,13	178.755.290,48	28.298.803,40	150.456.487,09
5	94.117.647,06	10.952.166,67	83.165.480,39	2,58	242.808.380,24	28.254.827,14	214.553.553,10
6	110.666.666,67	13.691.191,11	96.975.475,56	3,12	345.086.493,55	42.692.576,50	302.393.917,05
7	104.000.000,00	12.027.280,00	91.972.720,00	3,77	391.979.174,59	45.331.185,45	346.647.989,14
8	102.857.142,86	12.702.419,05	90.154.723,81	4,56	468.578.797,24	57.867.485,66	410.711.311,58
9	116.666.666,67	11.723.583,33	104.943.083,33	5,51	642.411.768,96	64.554.582,07	577.857.186,89
10	86.666.666,67	10.815.011,11	75.851.655,56	6,66	576.816.020,96	71.980.057,80	504.835.963,17
11	90.000.000,00	12.948.633,33	77.051.366,67	8,04	724.012.813,94	104.166.405,07	619.846.408,87
12	70.000.000,00	11.362.400,00	58.637.600,00	9,72	680.644.446,39	110.482.206,54	570.162.239,85
13	57.142.857,14	9.126.428,57	48.016.428,57	11,75	671.587.708,04	107.260.951,82	564.326.756,22
14	50.000.000,00	11.473.333,33	38.526.666,67	14,21	710.279.554,87	162.985.481,86	547.294.073,01
15	47.500.000,00	13.811.658,33	33.688.341,67	17,17	815.589.153,07	237.150.288,90	578.438.864,18
Sum	1.013.367.647,06	169.200.996,47	844.166.650,59	93,65	6.448.549.602,34	1.097.512.912,43	5.351.036.689,91
Net B/C	147,65						
Gross B/C	5,88						
NPV	5.351.036.689,91						
IRR	1,56						

Table 2 – Financial Feasibility Analysis of Pepper Farming in North Lampung Regency

Crop Age (Year)	Revenue (Rp)	Total Cost (Rp)	Net Benefit (Rp)	DF 20,87 (%)	PV Rv (Rp)	Pv Ct (Rp)	NPV (Rp)
1	0,00	10.263.653,33	(10.263.653,33)	0,83	0,00	8.491.481,21	(8.491.481,21)
2	0,00	8.148.528,57	(8.148.528,57)	0,68	0,00	5.577.533,00	(5.577.533,00)
3	0,00	6.896.222,22	(6.896.222,22)	0,57	0,00	3.905.311,51	(3.905.311,51)
4	83.750.000,00	13.258.487,50	70.491.512,50	0,47	39.238.349,15	6.211.834,77	33.026.514,38
5	94.117.647,06	10.952.166,67	83.165.480,39	0,39	36.481.984,18	4.245.290,69	32.236.693,49
6	110.666.666,67	13.691.191,11	96.975.475,56	0,32	35.489.975,24	4.390.662,95	31.099.312,28
7	104.000.000,00	12.027.280,00	91.972.720,00	0,27	27.593.302,66	3.191.080,55	24.402.222,11
8	102.857.142,86	12.702.419,05	90.154.723,81	0,22	22.578.042,15	2.788.292,04	19.789.750,11
9	116.666.666,67	11.723.583,33	104.943.083,33	0,18	21.187.518,30	2.129.088,31	19.058.429,99
10	86.666.666,67	10.815.011,11	75.851.655,56	0,15	13.021.675,61	1.624.956,54	11.396.719,07
11	90.000.000,00	12.948.633,33	77.051.366,67	0,12	11.187.647,30	1.609.608,25	9.578.039,04
12	70.000.000,00	11.362.400,00	58.637.600,00	0,10	7.199.059,69	1.168.551,37	6.030.508,32
13	57.142.857,14	9.126.428,57	48.016.428,57	0,09	4.862.069,52	776.533,28	4.085.536,24
14	50.000.000,00	11.473.333,33	38.526.666,67	0,07	3.519.740,90	807.663,21	2.712.077,69
15	47.500.000,00	13.811.658,33	33.688.341,67	0,06	2.766.405,11	804.392,47	1.962.012,64
Sum	1.013.367.647,06	169.200.996,47	844.166.650,59	4,51	225.125.769,81	47.722.280,14	177.403.489,66
Net B/C	10,87						
Gross B/C	4,72						
R/C Ratio	5,98						
B/C Ratio	4,99						
NPV	177.403.489,66						
IRR	0,75						

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COMMERCIAL SMALLHOLDER LAYING HENS: PRODUCTION EFFICIENCY AND INTENSITY OF INPUT USE ACCORDING TO PRODUCTION PHASE IN SOUTH SULAWESI, INDONESIA

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ABSTRACT

The study was aimed to analyse production efficiency and intensity of input use according to production phase in commercial smallholders laying hens (CSLH) in South Sulawesi, Indonesia in three consecutive months. Production phase was determined by the hens' age, i.e. 5-12 months in Phase I and 13-18 months in Phase II. Data were collected from a survey to 35 and 32 CSLH samples from Phase I and II, respectively. Daily egg production was calculated in percent (%), the main ration and feed additive was expressed in Indonesian currency unit (IDR) and the labor and experience were stated in hour/day and year, respectively. Data were subject to Cobb-Dougllass production function (CD) analysis using SPSS 16 software. Results showed that production efficiency of Phase I and II hit Increasing Return to Scale (IRT) and a 1% proportional increase of total input would improve egg production in Phase I and II by 3.07% and 2.06%, respectively(>1%). Intercept of production function in Phase I (61.60) was higher than that of Phase II (52.60). The intensity of main ration in Phase I and II was still underutilized; therefore, increasing the input potentially improved egg production. The intensity of feed additive in Phase I was optimum but overutilized in Phase II. Labor and experience inputs were overutilized in both Phases. In conclusion, CSLH efficiency in Phase I and II in South Sulawesi was subject to optimization by increasing the main ration input and decreasing labor and working experience input.

KEY WORDS

Efficiency, production, input, underutilizise, intensive, overutilizise.

Studies on production efficiency and intensity of input use on commercial laying hens have been published. The area of the studies includes productivity and technical efficiency of poultry egg production in Nigeria (Ojo, 2003); technical efficiency of poultry egg production in Ogun State (Yusuf and Malomo, 2007); productivity analysis of eggs production in Khorasan Razavi province (Mohaddes, 2009); technical efficiency of poultry production in Afijio Local Government Area of Oyo state (Nigeria Adesiyon and Israel, 2014); technical, allocative and economic efficiency of commercial poultry farms in Bangladesh (Begum et al, 2010); evaluation of technical and economic efficiency of laying hen farms in Konya (Dogan et al, 2018) and stochastic frontier production function and efficiency status of poultry layer farms in Malaysia (Elpawati et al, 2018). From seven publications, not one is discussing or referring to production phase. Nevertheless, we appreciated the authors for investing and disseminating information on the efficiency of laying hens farm for further studies.

The production phase of laying hens is based on the age. From the perspective of nutrient demand, Leeson and Summers (2008) categorized production phase into three: Phase I (5-8 months), Phase II (8-12 months) and Phase III (12-18 months). However, production curve trend divides the phase into two; Phase I (5-12 months) and Phase II (12-18 months) (Donald et al, 1992; *Ciwf.org*, 2012; Paly, 2015 and Arifin, 2016). The reason is that hens that lay eggs during mature sexual age (five months) reach peak production quickly then declines as the hen is aging. Therefore, there are two significant trends—rise and fall (Narincet al, 2014; Adam and Bell, 1980; Savegnago et al, 2012).

The first reason to understand production phase is to make production process efficient by intensifying input utilization; secondly, to decrease the level of amino acid in protein feed

during the last stage (Phase II) in relation to the high cost of protein feed (Leeson and Summers, 2008). However, obtaining a higher efficiency goes beyond compromising protein level; all inputs must be adjusted according to the ongoing production phase.

Accordingly, it is important to acknowledge the characteristics of egg production phase in laying hens. The study that focused on efficiency without referring to production phase may prove less reliable because the efficiency score is resulted from production phase instead of feed or other inputs. With equal feed or input, hens in Phase I would show better efficiency than that of Phase II, or vice versa.

The study is aimed to analyse the production efficiency and intensity of input use in CSLH according to production phase I and II. The result of the study is expected to contribute to the improved measurement of production efficiency in laying eggs. Furthermore, the study may encourage the farmers to make input adjustment based on the production phase to achieve a more efficient farming venture.

MATERIALS AND METHODS OF RESEARCH

The study was conducted in South Sulawesi, Indonesia for three months (April - June 2018). The CSLH in the province contains 1000-15000 hens per household. The farmers establish a community named The Community of Household Laying Hen Farmers. The community is collaborating with the provincial government (Department of Livestock and Animal Health) to provide information on livestock breeding technique, animal market and animal health.

Using a survey method, the data were collected from observation, interview with the farmers, documentation and recording. The survey revealed 629 CSLH in the community. Purposive sampling method was applied based on hen's population size and age, concluding a total of 67 samples (10.65% of the population) consisting of 35 for Phase I and 32 for Phase II. The production phase was determined based on the hens age; 5-12 months for Phase I and 13-18 months for Phase II (Donald et al, 1992, *Ciwf.org*,2012; Paly, 2015 and Arifin, 2016).

Table 1 – Variables of the study

Variables	Production Phase I	Production Phase II	Unit
Egg production	Y_1	Y_2	%
Main ration	X_{11}	X_{21}	IDR
Feed additive	X_{12}	X_{22}	IDR
Labor	X_{13}	X_{23}	Hour
Experience	X_{14}	X_{24}	Year

The average egg production was calculated based on the percentage of daily production (%) in three consecutive months. The main ration (the commercial ration commonly purchased from the agent) was calculated from the average feed intake during the study. The nutrient composition and the price of main ration were different between Phase I and II. Feed additive among farmers were varied in price, brand, form (liquid or solid), ingredients and administration according to the farmers' perception and taste. Therefore, the unit of the two inputs is converted into Indonesian currency (IDR).

The labor unit was hour/day calculated by multiplying the number of labor by the hour of work, and the unit of experience was expressed in year. Labor is considered an important aspect because CSLH required a focused energy and attention. Similarly, the longer the farming experience, the more efficient the farmers work. Therefore, labor and experience are the contributing factors to production efficiency and intensity of input use in this analysis.

Table 2 presents the different composition of main ration between Phase I and II. Nevertheless, the composition was following the National Standard (SNI) 01-3929-1995 on the balanced nutrition for laying hens in Indonesia (SNI, 1995) as well as nutrition expert in laying hens (Leeson and Summers (2008).

Table 2 – Nutrient content of main ration

Nutrient	Unit	Production Phase I	Production Phase II
Crude protein	%	20-22	17-18
Metabolic energy	Kcal/kg	260-290	280-285
Calcium	%	4-5	4-5
Phosphorus	%	0.4-0.50	0.3-0.4

Source: farmer samples.

Data were subject to Cobb-Douglass production function (CD) analysis using Ordinary Least Square (OLS) according to Soekartawi (2003) and Ioanet al (2015). The whole stage of analysis was conducted using SPSS 16 (Ghozali, 2014).

The general model of CD production function is below:

$$Y = \alpha X^{\beta} \quad (1)$$

Mathematical model:

$$Y = \beta_0 X_1^{\beta_1} X_2^{\beta_2} \dots X_3^{\beta_3} \dots X_4^{\beta_4} \dots e^u \quad (2)$$

Where Y = egg production; X₁ (main ration); X₂ (feed additive); X₃ (labor); X₄ (experience); β₁, β₂, β₃, β₄ (elasticity coefficient to count); e^u (disturbance term).

To simplify the estimation, the equation was broadened and converted into linear by natural algorithm (2) (Soekartawi, 2003; Chen 2012).

$$\ln Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + e \quad (3)$$

The equation of CD production function is different between Production Phase I and II, similar to the formula by Giyanto (2003) in Marine and Fishery field.

Model for Production Phase I:

$$\ln Y_1 = \beta_{10} + \beta_{11} \ln X_{11} + \beta_{12} \ln X_{12} + \beta_{13} \ln X_{13} + \beta_{14} \ln X_{14} + e \quad (4)$$

Model for Production Phase II:

$$\ln Y_2 = \beta_{20} + \beta_{21} \ln X_{21} + \beta_{22} \ln X_{22} + \beta_{23} \ln X_{23} + \beta_{24} \ln X_{24} + e \quad (5)$$

Subscript 1 in equation 4 represents Phase I, Subscript 2 in equation 5 represents Phase II (see Table 1).

Goodness of Fit was statistically tested using R-multiple, R-squared and F value (Ghozali, 2014). R-multiple measures the degree of association of all inputs on egg production. The range value of R-multiple was 0-1 where value closer to 1 is more fit (feasible). R-Square (R²) shows the percentage of input contribution to production; the higher the value, the more fit (feasible). F statistic is used to evaluate the effect of all inputs on egg production; if F is significant (p < 0.05), the input (X_i) in the model is fit (feasible).

Production efficiency was determined by calculating the elasticity coefficient (Σβ_i) in equation 4 and 5 (Soekartawi, 2003). If Σβ_i > 1, increasing return to scale (IRT) is achieved. However, it is not efficient because a proportional input increase (X_i) would result in a higher egg production (δΣX_i/δY > 1). If Σβ_i < 1, decreasing return to scale (DRT) is no longer efficient because increasing input (X_i) would result in equal egg production (δΣX_i/δY < 1). Efficiency is achieved when Σβ_i = 1 or Constant return to scale because a proportional addition of input (X_i) resulted in equal egg production (δΣX_i/δY = 1).

Evaluating the intensity of input use is conducted by identifying the partial input elasticity from the equation of CD production function (equation 4 and 5). The criteria are underintensive (underutilize) if β_i > 1; intensive if β_i = 1; and overintensive (overutilize) if β_i < 1 (Lau and Yotopoulos, 1971; Soekartawi, 2003).

RESULTS AND DISCUSSION

The summary statistics of the inputs for CD production function analysis is presented in Table 3. The average egg production, main ration, feed additive, labor and farming experience in Phase I were higher than those in Phase II. A higher standard deviation of production or input indicates that most of the production or input value are near the mean value. In contrast, a higher standard deviation shows a significant difference from one farmer to another.

Table 3 – Summary statistics

Variable	Fase I		Fase II	
	Mean	Std Dev.	Mean	Std Dev.
Egg production (%)	75.21	3.106	56.09	4.713
Main ration (IDR/day)	635.439	79.443	575.486	65.871
Feed additive (IDR/day)	74.577	13.067	72.526	18.669
Labor (jam/day)	24.163	2.636	23.744	2.725
Experience (year)	5.150	2.194	5.263	2.677
Age of laying hens (month)	9.250	2.411	16.770	3.723

The test was aimed to investigate the feasibility of regression model to estimate the relation between input variable and egg production variable. The test used R-multiple, R-squared (R^2) and F statistic values (Table 4).

Table 4 – The Goodness of Fit Model Test

Statistics	Fase I	Fase II	Keterangan
R-multiple	0.766	0.791	Fit (feasible)
R-squared (R^2)	0.5867	0.6256	Fit (feasible)
F (p-value)	0.010*	0.009*	Fit (feasible)

*Significant at 0.05 ($p < 0.05$).

Table 5 – Production model function for Phase I and II

Model	Coef.	Std. Error	T	P-value	Intensity of input use
1	2	3	4	5	6
Production Phase I					
Intercept	61.6	7.76	7.94	0.00	
Main ration ($\text{Ln}X_{11}$)	1.11	0.13	8.87	0,01	Under-intensive
Feed additive ($\text{Ln}X_{12}$)	0.92	0.04	24.76	0,01	Intensive
Labor ($\text{Ln}X_{13}$)	0.43	0.05	8.33	0,03	Over-intensive
Farming experience (X_{14})	0.61	0.06	10.91	0,22	Over-intensive
Total elasticity ($\sum \beta_j$)	3.07				
Production Phase II					
Intercept	52.6	7.02	7.49	0.00	
Main ration ($\text{Ln}X_{21}$)	1.18	0.43	2.74	0,01	Under-intensive
Feed additive (X_{22})	0.38	0.15	2.53	0,01	Over-intensive
Labor ($\text{Ln}X_{23}$)	0.33	0.12	2.75	0,03	Over-intensive
Farming Experience ($\text{Ln}X_{24}$)	0.17	0.04	4.19	0,22	Over-intensive
Total elasticity ($\sum \beta_j$)	2.06				

R-multiple measured the association between egg production (Y) and total variable inputs (X_i). R-multiple value in Phase I and II was 0.6 and 0.6, respectively (>0.5), indicating a strong association (fit). R Square (R^2) value or commonly referred as coefficient determinant measures the contribution of total input (X_i) simultaneously to production (Y). R^2 value in Phase I and II was 58.67% and 62.56%, respectively. It shows that the contribution of total input (X_i) to egg production in Phase I and II was 58.67% and 62.56%, respectively, and the rest were explained by other variables excluded in this analysis model. F value was used to investigate the simultaneous effect of total input (X_i) on production (Y). F value of Phase I and II showed a significant effect ($p < 0.05$); therefore, the effect of the sample

analysis can be applied or generalised to the whole CSLH population in South Sulawesi. The three tests concluded that the model of production function in Phase I and II (Table 5) is fit for the model to estimate production efficiency and intensity of input use in this study.

CD Production Function using the Ordinary Least Square (OLS) technique is the proper model to estimate efficiency and intensity of input use (Soekartawi, 2003; Ghozali, 2014 and Ioan, et al, 2015). The result of analysis is presented in Table 5.

From coefficient in Table 5 (column 2), the model equation is as follows.

Production Phase I:

$$Y = 61.60 x_{11}^{1.11} x_{12}^{0.92} x_{13}^{0.43} x_{14}^{0.61}$$

$$\ln Y = 61.60 + 1.11 \ln X_{11} + 0.92 \ln X_{12} + 0.43 \ln X_{13} + 0.61 \ln X_{14} = 79.558$$

If $X_i=1$, then

$$\ln Y = 61.60 + 1.11 (1) + 0.92 (1) + 0.43 (1) + 0.61 (1) = 72.67$$

Production Phase II:

$$Y = 52.60 x_{21}^{1.18} x_{22}^{0.38} x_{23}^{0.33} x_{24}^{0.17}$$

$$\ln Y = 52.60 + 1.18 \ln X_{21} + 0.38 \ln X_{22} + 0.33 \ln X_{23} + 0.17 \ln X_{24}$$

If $X_i=1$, then

$$\ln Y = 52.60 + (1.18 (1) + 0.38(1) + 0.33(1) + 0.17(1)) = 54.66$$

Production efficiency explained the association between total input and output (egg production). Analysis result showed that the elasticity of total input ($\sum\beta_i$) in production Phase I and II was 3.07 and 2.06, respectively ($\sum\beta_i > 1$). It showed that the production efficiency in Phase I and II was Increasing Return to Scale (IRS). Accordingly, every 1% proportional increase of input (X_i) improved egg production by 3.07% and 2.06% in Phase I and II, respectively ($>1\%$) or $\delta X_i / \delta Y > 1$. This result was not efficient because input capacity in IRT can be added to increase egg production to optimal level. It is considered efficient if $\sum\beta_i = 1$ or at Constant Return to Scale (CRT) where proportional addition of 1% input (X_i) increased egg production by 1% ($\delta X_i / \delta Y = 1$).

Previous studies were conducted by Yusuf et al (2007) in Ogun State, Begum et al (2010) in Bangladesh, Ramdhani (2011) in Indonesia, and Dogan et al. (2018) in Konya Turkey reported the production efficiency of commercial laying hen at IRT ($\sum\beta_i > 1$). Therefore, the present study conformed the previous findings.

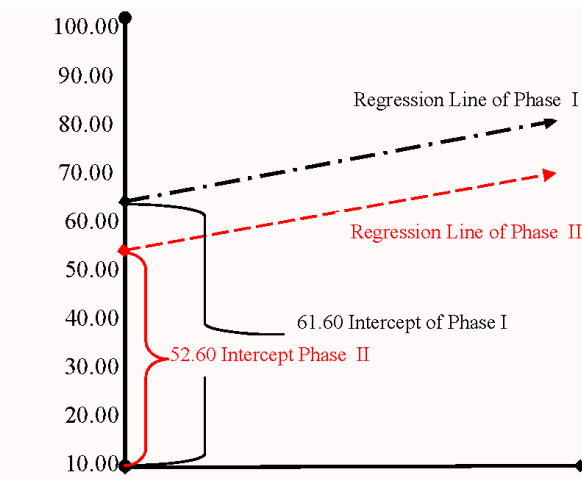


Figure 1. Different Intercept between Phase I and II
Source: Author self-made based on calculation in Table 5

The intercept value of equation 6 and 7 was 61.60 and 52.60, respectively. It shows that egg production value contributed from the total input in Phase I and II during observation was 61.60%, and 52.60%, respectively. If each variable ($X_{11} \dots X_{14}$ and $X_{21} \dots X_{24}$) was

distributed with the same value (1), the estimated egg production in Phase I and II was 72.62% and 54.66%, respectively. It was not significantly different from the average production in Table 2. The production gap between the two phases is 18.01% higher in Phase I (72.67-54.66%). The different intercept placed the regression line of Phase I higher than Phase II (Figure 1).

Previous studies reported that egg production in Phase I and II (in respective manner) was 71.20% and 61.70% (Donald et al,1992); 80% and 60% (Ciwf.org,2012); 75.67% and 57.17% (Narincet al, 2014) and 87.45% and 44.75% (Arifin, 2016). It indicated a consistently significant difference in production Phase I and II. Studies showed that in physiological perspective, laying hens' production and reproduction capacity starts to decline at 11-12 months old (Donald et al, 1992, *Ciwf.org*,2012; Paly, 2015 and Arifin, 2016). The average age of hens in Phase I and II of this study was 9.25 and 16.77 months, respectively (Table 2). Accordingly, it is evidenced that the different intercept in Figure 1 is due to the different Production Phase.

Intensity of input use of Phase I and II in Table 5 is explained in column 6 and visualized in Figure 2 where Production Phase II is signified by the red line. Input elasticity of main ration (X_{11} and X_{21}) in Phase I and II was 1.11 and 1.18, respectively, because it is within IRT zone or underintensive (underutilized). Accordingly, 1% additional input could increase egg production above 1% or 1.11% and 1.18% for Phase I and II, respectively. Feed additive elasticity (X_{12}) of Phase I was 0.92 (round up to 1) and Phase II was 0.38. Feed additive of Phase I is in CRT zone or intensive (optimum), while Phase II is in DRT zone or exceeding the intensive limit (over-intensive). Increasing 1% feed additive in Phase I would contribute to 0.92% or 1% (round up) egg production; however, less contribution was observed in Phase II despite the equal addition (0.38%). Therefore, the present finding conforms the previous studies (Mohaddes, 2009; Adesiyani and Israel, 2014).

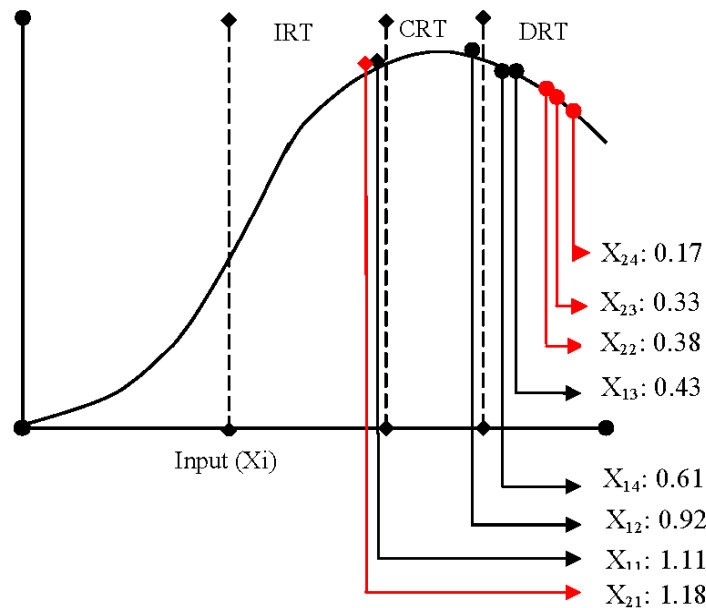


Figure 2. Map of intensity of input use
Source: Author-made according to calculation in Table 5

Labor elasticity (X_{13} ; X_{23}) of Phase I and II in this study was 0.43 and 0.33, respectively. Therefore, each 1% additional labor only contributed 0.43% and 0.33% (<1%) to egg production in Phase I and II, respectively. It indicated that labor input has exceeded intensive limit (over-intensive) or in DRT zone, similar to previous findings (Ramdhani, 2011; Paly, 2015 and Elpawati et al, 2018).

Experience input (X_{14} ; X_{24}) in Phase I and II was 0.61 and 0.17, respectively, exceeding the intensive limit (over-intensive) or in DRT zone. Additional 1% experience input made a

small contribution to egg production, under 0.61% and 0.17% (<1%) for Phase I and II, respectively. It conforms the previous findings (Ojo, 2003 and Dogan et al, 2018) who reported experience input in DRT zone, indicating a wastefulness and therefore, suggesting a cut down. It may not be difficult for the farmers because they often reduce or delay buying the unnecessary input in order to prioritize the more important inputs.

CONCLUSION

The study concluded that the production efficiency in Phase I and II are in Increasing return to scale (IRT) condition. A 1% proportional increase of total input could increase egg production by 3.07% and 2.06% (>1%) in Phase I and II, respectively. However, the intercept of production function in Phase I (61.600 was higher than that of Phase II (52.60), resulting in regression line of Phase I above Phase II. The different intercept was due to the different hens' age where Phase II consisted of the laying eggs with average age 16.77 ± 3.72 months which experienced a declining production and reproduction capacity.

The intensity of main ration use (X_{11} and X_{21}) for Phase I and II was under-intensive, and the additional 1% input could increase egg production by 1.11% and 1.18% (>1%), respectively. The intensity of feed additive use (X_{12}) in Phase I is considered optimum (intensive), and additional 1% input contributed to 1% of egg production. Phase II showed over-intensive because additional 1% input only contributed 0.38% (<1%) to egg production.

Intensity of labor (X_{13} ; X_{14}) and experience (X_{14} ; X_{24}) in Phase I and II was overintensive. Additional 1% input only contributed <1% to egg production. Overintensive input was categorized as wasteful input; therefore, it required a cut down from the regular use.

Efficiency of CSLH in Phase I and II could be optimized by increasing main ration input and decreasing labor and experience inputs.

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CONFLICT OF INTERESTS

The author certifies that he has no "conflict of interest" in the research, from undertaking the field research to writing the manuscript.

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FACTORS AFFECTING INVESTOR DECISIONS TO INVEST IN STARTUP: A CASE STUDY OF STARTUP XYZ

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ABSTRACT

The rapidly growing startup that happened all over the world, including Indonesia, not only caused by technology development and internet invasion but also the investor who participates in taking risk through their funds in this high-risk-high-return industry. The study aims to determine investor perceptions before they decided to invest in a particular startup by used XYZ company as a study case. The research was conducted by carrying out a depth interview on the internal party (startup XYZ) to find out the current conditions and strategies of the company, and external parties (three investors and three startups who have received funding from investors) to get a view on influence investors in investing as well as opinions related to startup XYZ. Data from interview results were processed using the IPA (Importance-Performance Analysis) method. Twenty-nine indicators are used as a reference to consider whether this affects investors to invest in startups. From the results obtained, it showed that some signs are very influential on investor decisions and some have no effect. The recommended strategies for XYZ startups are 1) increasing the focus of product development based on indicators considered necessary by investors based on Importance-Performance Analysis, 2) marketing specific market segments, 3) cooperating with certification bodies for customers who already passed Al Quran reading through the Learn Tajwid application.

KEY WORDS

Startup, investor, importance performance analysis, management strategy.

XYZ is an Indonesian startup base that provides digital education to learn to read Quran, called Learn Tajwid Application. XYZ sees some challenges for Muslim people who live in a Muslim minority country in learning to read Quran with Tajwid (proper rules of recitation), such as hard to find teacher, the busy schedule, or the long distance to reach the Islamic Centre. Learn Tajwid, that made in 2015, designed with visual and audiovisual who voiced directly by Qori (a person who recites the Quran with the proper Tajwid) who experienced in international Quran recitations and lecturers of various Quran classes. Learn Tajwid has a high standard learning curriculum compiled by an instructor from LIPIA (Islamic and Arabic Science Institutions). Currently, Learn Tajwid depends on ads in application and premium subscriber as their business model.

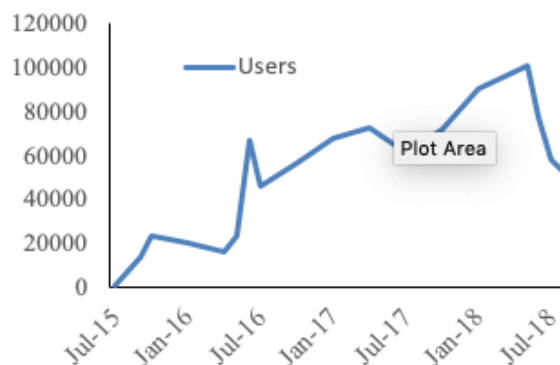


Figure 1 – Learn Tajwid Monthly Active Users period July 2015 to August 2018

Learn Tajwid have more than 1,5 million registered users, with around 60 thousand monthly active users as shown in Figure 1. In 2017, Learn Tajwid selected by ummahwide.com as one of the 21 most innovative global Muslim apps of 2017. This achievement is undoubtedly proud of local startups from Indonesia that can compete globally in their two years old.

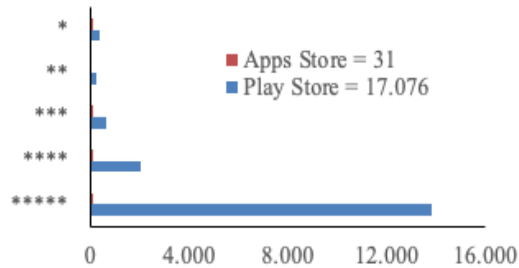


Figure 2 – Learn Tajwid Rate in Android and IOS

Learn Tajwid mostly accessed from Android phone than IOS; the application got the highest rate in Play Store (five stars *****) by 13,806 users as shown in Figure 2.

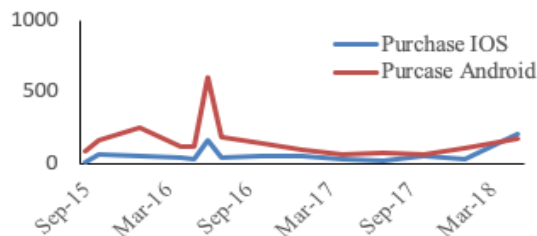


Figure 3 – The total purchased of Learn Tajwid in IOS and Android for period of September 2015 to May 2018

Unfortunately, of all the achievement above, the total purchased of premium subscriber Learn Tajwid as shown in Figure 3, it is less than 10% from the Monthly Active Users. It indicated that XYZ would get around USD \$200-300 per month from this income segment which is quite low. Combined with ads that projected to reach around USD \$11.000 from May 2016 until June 2018 (based on data from XYZ), XYZ will be expected to get revenue USD \$5.000 per month or USD \$60.000 annually. This amount is not enough to pay company operational cost and further product development. Currently, the company have another income source from donations.

Due to this condition, XYZ CEO decided to open opportunities for investors to fund the business. And understanding about investor preferences in startup investing will be necessary for the management. Before that, startup XYZ have to make sure; What indicators' that attract investor to invest in startup? And what investor perception about startup XYZ?

LITERATURE REVIEW

Warner (2011) and Graham (2012) defined a startup as an early stage company which has a product or service that are attractive, innovative, solutions and can meet the customer needs. The startup also designed with the aim of the company that able to rapid growth. According to Blank (2018), a startup is a temporary organization that developed to find business models that are repeatable and scalable. The differences between startups with another small business is that startup developed to create new and innovative services or products in conditions of high uncertainty. People who dare to make new products or services in an uncertain situation are entrepreneurs, regardless of whether they work alone, for-profit companies, or non-profit organizations' (Ries 2011).

Investment is the placement of one or several existing funds with hope that the investor(s) will generate profits, either from dividend or selling the stock with higher value in the future. In investing, investors need information from indicators that are considered important as a reference for deciding whether to invest or not (Halim 2005; Christanti et al. 2011). According to Goudriaan (2016), there are several types of investors for a private firm: Angel Investor, Venture Capital and Private Equity. Angel Investor is someone who use personal funds to invest in a startup that they think has a promising prospect. One example of the angel investor association in Indonesia is Indonesia Angel Investment Network (ANGIN)). Venture Capital is a firm that collects funds from several investors to invest in a particular business that considered to have long-term growth and profit potential (Muliya & Imaniyati 2008; Buchari et al. 2016)). Private Equity is a company that collects funds from limited parties to invest in strategic investment instruments with long periods.

Ghosh (2012) researched 2,000 startups that had been funded by venture capital from 2004 to 2010. The study concluded that 75% of the total startups studied never returned money or provided benefits to investors. Furthermore, based on research conducted by CB Insight (2018), there are five reasons that make startup fail: making unnecessary products (42%), empty cash (29%), lousy team management (23%), losing competition in the market (19%), and price selection inappropriate product (18%). Therefore, choosing the right method in the business model translation is a very crucial moment for a startup to reduce the risk of failure. The vision and strategy at startup are vital, and the right use of business models can make it easier for startups to create strategies to achieve the company's mission.

According to Muzyka (1996) quote by Nunes et al. (2014), there are 45 criteria used by Venture Capital in selecting and evaluating a startup. These criteria have been categorized into six categories. The first category is the personality of the entrepreneur: capacity of reaction and risk assessment, ability to perform a continuous and intense effort, desire to earn money, honesty and integrity, attention to detail, favorable to suggestions and critics, long-term vision, and ability to raise empathy with the VCs. The second category is the experience of the entrepreneur and management team: educational record, ability to organize the management team, professional experience, knowledge of the sector, focused and familiar with the market objectives of the company, entrepreneur available capital, references of others, technical skills, and management skills. The third segment is market: market size, the growth rate of the target market, VCs familiar with product market, company ability to create a new market to the product or service, minimum competition in the first three years, barriers to entry of new products, and easy access to distribution channels and suppliers. The fourth category is product or service: company owning the patent, product with demonstrated market acceptance, the product developed to the point of a prototype, high-tech product, potential foreign market, uniqueness of product, availability of raw materials, and innovation in the production process. The fifth category is financial aspects: expected rate of return, structure costs, time to break-even, time to pay back, investment size, synergy with current investees of the VCs, capacity to obtain complementary financing, and ease of exit. The last category is other investment aspects such as geographic location, business plan quality, VCs intuition, sensibility to economic cycles, production capacity.

METHODS OF RESEARCH

This research collects premier and secondary data. The premier data used in this research was 29 indicators that represent nine elements that exist in the business model, product and strategies. These elements are obtained through in-depth interview with the founder of XYZ, startup investor, and startup enthusiast. On the other hand, secondary data are procured from scientific literature and online news. Data was collected since June 2018 until February 2019.

Importance-Performance Analysis (IPA) was first introduced by Martilla and James in 1977, where they used it to measure the importance and attributes of performance about customer satisfaction with the services provided when offering car sales services. The IPA method is used to measure the performance of satisfaction that is considered important by

the customer and the satisfaction performance received by the customer (Algifari 2016). The IPA method is a method that is easy to implement, cost-effective, and can easily evaluate the effectiveness of marketing programs (Wong 2015).

The operational variable is a complete set of instructions on what must be observed and measuring something or concept to test perfection. Operational definitions of variables are needed to explain variables that have been defined as efforts to understand in this study, the following variables that are thought to be the considerations of respondents in investing in startups based on the journal Nunes et al. (2014), other related journals and input from investors. The researcher found that there are 29 indicators considered as essential and used by investors in evaluating companies according to Muzyka et al. (1996). The indicator is divided into three parts, as 1. Individual Perspective, consists of Product affinity, Work ethics at the company, Corporate responsibility to the environment, Charisma from company leaders, Vision mission founder, Work experience / entrepreneurial experience at the founder, Number of founders, Company legality, Growth of the company, Core team, Acquisition level, Timing is appropriate, Product concept, and Solving problem; 2. Fundamental Market consists of Revenue / profit, future projects, company cash flow, market size, previous investment, attraction, corporate sustainability, company valuation, and exit options; 3. The Public Perspective consists of: Comments from experts on the media, Number of advertisements on TV / radio / internet / etc., company decisions to follow government regulations, public sentiment towards companies, competitors, and market/industry conditions. Based on the indicators above, researchers obtained results from questionnaires distributed to respondents who had been selected based on purposive sampling from six respondents consisting of venture capital, angel investors and startup founders

This research used descriptive quantity analysis introduced by Miles and Huberman (1984) with management strategy concepts approach obtained from scientific literature and purposive sampling from respondents' opinions. Furthermore, Importance-Performance Analysis (IPA) Martilla and James (1977) has been selected as the primary tool to identify key attributes of performance that playing an important role in customer satisfaction.

Likert Scale measurement was used to give clarity of the level of importance which the lowest intensity scored as one (not important), and the highest intensity scored as five (the most important). For the level of performance, the lowest intensity recorded with one (not satisfied at all) while the highest intensity recorded with five (very satisfy). These scales will be placed in the Importance-Performance Matrix. This matrix as shown in Figure 4, is consisting of four quadrants: 1. Concentrate Here, 2. Keep Up the Good Work, 3. Low Priority, 4. Possibly Overkill. The interpretations of the quadrant are as follows (Martilla and James 1977; Wong 2015):

1. Concentrate Here. Quadrant one shows that the indicators in this quadrant are crucial for the customer but the performance or service provided is not satisfactory or the quality of service is poor. Therefore, the indicators included in quadrant 1 are the top priority for improvement.

2. Keep Up the Good Work. The second quadrant shows that the indicators in this quadrant are considered important by the customer and the performance or service provided is satisfactory, or the quality of service is excellent. No changes are needed in this quadrant, other than to maintain consistency in performance or service.

3. Low Priority. The third quadrant shows that the indicators included in this quadrant are considered to have a low or less important level of importance by the customer and the level of performance or service provided is of low quality. So that resources allocated to attributes in this quadrant may need to be reviewed and reduced.

4. Excessive (Possibly Overkill). In quadrant 4, the indicators included in this quadrant are considered not important by the customer, but the performance or services provided by the company are of good quality. Therefore, the indicators included in this quadrant are considered excessive, and the resources allocated to this quadrant must be reviewed, reduced or stopped by the product or service, and the resources transferred to other attributes so that the performance is optimal and efficient for the company.



Figure 4 – The Importance-Performance Matrix

The measurement to calculate the score in this research are:

$$\bar{X}_i = \frac{\sum_{i=1}^n X_i}{n} \quad \bar{Y}_i = \frac{\sum_{i=1}^n Y_i}{n}$$

1. Calculation of the average level of importance and performance for each item of the attribute: with X_i is score of the average performance level of the i attribute, Y_i is score of the average level of importance of the i attribute and n is the number of respondents.

$$\bar{X} = \frac{\sum_{i=1}^p \bar{X}_i}{p} \quad \bar{Y} = \frac{\sum_{i=1}^p \bar{Y}_i}{p}$$

2. Calculation of the average level of interest and performance for the overall attribute: With X is an average level of performance, Y is a value of average level of importance, and P is the number of attributes.

RESULTS AND DISCUSSION

Kaplan and Lerner (2010), prove that almost half of the companies listed on the Stock Market (IPO) are companies that have been funded by Venture Capital. Furthermore, Harris, Jenkinson and Kaplan (2014, 2016) found that the average startup that had been financed by investors had an outstanding performance in the Stock Market. And the result after calculating the Importance-Performance Analysis formula from the 29 indicators as shown in Table 1.

As shown in Table 1, the average value obtained from the respondents' interest in the startup of XYZ according to respondents is 4.0. This shows that the indicators that are considered by investors to invest in startup are those which values are above the average value of 4.0, namely: Vision and mission of the founder (5), Sustainability (4.8), Product concept (4.7), Market size (4.7), Charisma of the company leader (4.5), Company growth (4.5), Future projects (4.5), Work ethics at the company (4.3), Appropriate timings (4.3), Solving problem (4.3), Number of advertisements on TV / radio / internet / etc. (4.3), Product affinity (4.2), Acquisition level (4.2), Revenue / profit (4, 2), Market / industry conditions (4.2), Core team (4.0), and Attraction (4.0).

While indicators which values are below the average value, are indicators that are not too considered by investors to invest such as: Corporate valuation (3.8), Exit Options (3.8), Comments from experts on the media (3,8), Community sentiment towards the company (3,8), Competitors (3,8), Corporate responsibility in the environment (3,7), Work experience / entrepreneurial experience at founder (3,5), Company legality (3,3), Company cash flow (3.2), following government regulations (3.2), previous investment (3), and number of founders (2,3).

Table 1 – Average Value of Importance and Average of Performance from XYZ

No.	Factors	Average Importance	Average Performance
	Individual Perspective		
1	Product affinity	4,2	4
2	Work ethics at the company	4,3	3,7
3	Corporate responsibility for the environment	3,7	3,7
4	Charisma from the company leader	4,5	4,5
5	Founder's mission vision	5	4,8
6	Entrepreneurial experience / work experience at the founder	3,5	3,7
7	Number of founders	2,3	2,7
8	The legality of the company	3,3	3,5
9	Company growth	4,5	4,3
10	Core team	4	4,7
11	Acquisition level	4,2	4
12	Appropriate timings	4,3	4,5
13	Product concept	4,7	4,8
14	Solving problem	4,3	4,5
	Fundamental Market		
15	Revenue / profit	4,2	4,2
16	Future projects	4,5	4,3
17	Company cash flow	3,2	3,5
18	Market size	4,7	4,7
19	Previous investment	3	3
20	Attraction	4	4,3
21	Sustainability of the company	4,8	4,7
22	Company valuation	3,8	3,8
23	Exit Options	3,8	4,2
	Public Perspective		
24	Comments from experts on the media	3,8	3,7
25	Number of advertisements on TV / radio / internet / etc.	4,3	4
26	The company's decision to follow government regulations	3,2	3,3
27	Community sentiment towards the company	3,8	4
28	Competitor	3,8	3,7
29	Market / industrial conditions	4,2	4
	Average	4,0	4,02

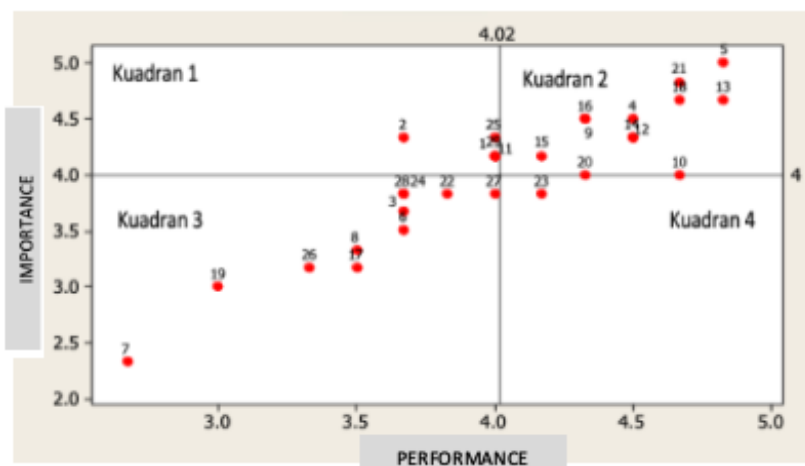


Figure 5 – Importance-Performance Matrix with 29 Indicators

Based on Table 1, the average value obtained from respondents' performance on startup XYZ is 4.2 and the indicators that influence investors' perceptions of startup XYZ are indicators which values are above the average value of 4.2, namely: Vision of the founder (4.8), Product concept (4.8), Core team (4.7), Market size (4.7), Sustainability of the company (4.7), Charisma of the company leader (4.5), Appropriate timing (4.5), Solving problem (4.5), Corporate growth (4.3), future projects (4.3), Attraction (4.3), Revenue / profit (4.2), and Exit Options (4.2).

While indicators which values are below the average value, are indicators that do not affect investors' perceptions of investing in startups, namely: Product Affinity (4.0), Acquisition level (4.0), Number of advertisements on TV / radio / internet / etc. (4.0), community sentiment towards the company (4.0), market / industry conditions (4.0), company valuation (3.8), work ethics in the company (3.7), corporate responsibility in the environment (3.7), Entrepreneurship experience at founder (3,7), Comments from experts on media (3,7), Competitors (3,7), Company legality (3,5), Cash flow company (3,5), Company decisions to follow government regulations (3.3), previous investment (3.0), and number of founders (2.7).

The data used to perform IPA calculations are data obtained from the results of depth interviews with questionnaires and carried out by purposive sampling with respondents who have been determined, namely representatives of BUMN (State-Owned Enterprise) and private Venture Capital, Angel Investors and Startup Activists. From the interviews, the results are included in a graph that shows an assessment of current interests and conditions. These results are plotted into the Importance-Performance Matrix as shown in Figure 5.

From Figure 5, it can be seen that the 29 indicators that allegedly influence investors' decisions to invest in startups are as follows:

In Figure 5, there is Importance-Performance Matrix that illustrates the spread of 29 indicators to 4 quadrants and indicators that are the main priorities to be addressed by startup XYZ in the first quadrant as in Table 2.

Table 2 – The Main Priorities that must be addressed at Startup XYZ

No	Attribute
2	Work ethics at the company
25	Number of advertisements on TV / radio / internet / etc.
1	Product affinity
11	The level of acquisition offered
29	Market / industrial conditions

As seen on Table 2, there are 5 main priorities that must be addressed at startup XYZ such as: 1. Work ethics at the company, it can indicate that ethics is the science of what is good and bad, and about moral rights and obligations. It can be concluded that work ethics is a value system adopted by someone, such as relationships between employees and companies. And the respondents considered the performance of ethics in XYZ still not in line with the expectations and judged to be able to hinder the development of the company. 2. Number of advertisements on TV / radio / internet / etc. are indicated that the marketing campaign strategy carried out by XYZ. Respondents considered the lack of marketing campaigns strategy which resulted in users being less familiar with Learn Tajwid, so the expected targets were still not achieved. 3. Product affinity is an interest characterized by equality of interests. In the business world, it is known as affinity marketing or strategic partnership between complementary brands that sell similar products. Respondents considered that the product affinity of Learn Tajwid was quite appropriate, but in a strategic partnership XYZ had not been able to meet respondents' expectations with their current performance. 4. The level of acquisition offered by the company greatly influences investors' decisions to invest in the company or not. Because it affects what percentage of acquisition the investor can have and how much the funds will be distributed to the company. Respondents considered that the current level of acquisition offered by XYZ (performance) was not interesting, therefore the strategy needed to be re-established. 5. Market / industrial conditions be considered by investors before deciding to invest or not, because it affects the return that investors will get in the future. According to respondents, the digital education market conditions are very promising. But this is needed to be proven by XYZ by showing how much market share is currently owned.

XYZ is good enough in the eyes of respondents; this can be seen from 29 existing indicators; there are 12 of indicators whose achievements should be maintained by XYZ. These indicators are attributes that are included in the second quadrant as in Table 3.

Table 3 – Achievements that should be maintained by XYZ

No	Attribute
5	The founder's vision and mission
21	Company Sustainability
13	Product concept
18	Market Size
4	Charisma of the company leader
9	Company growth
16	Future projects
12	Appropriate timings
13	Solving problem
14	Revenue / profit
10	Core team
20	Attraction

But unfortunately, from 29 indicators there are 11 indicators which according to respondents are of low priority. Indicators or attributes that are a low priority are in quadrant 3 because the importance of the decision of investors to invest is below the average. These attributes can be seen in Table 4.

Table 4 – Attributes that are Low Priorities at Startup XYZ

No	Attribute
27	Community sentiment towards the company
22	Company valuation
24	Comments from experts on the media
28	Competitor
3	Corporate responsibility for the environment
6	Work experience / entrepreneurship at the founder
8	The legality of the company
17	Company cash flow
26	The company's decision to follow government regulations
19	Previous investment
7	Number of founders

Over-performing. Attributes that are judged to be overperforming but considered less critical by investors according to respondents are in the fourth quadrant as in Table 5.

Table 5 – Attributes whose performance is over-performing at Startup XYZ

No	Attribute
23	Exit option

Importance-Performance Analysis method applied to identify key performance attributes that play an essential role in customer satisfaction, in this case, is to attract investors to invest in startup XYZ. The research aims to see investors' perceptions of XYZ based on the Importance-Performance Analysis method.

The researcher uses the 29 indicators from Muzyka et al. (1996) and collaborate with Nunes et al. (2014) and other related journals and input from investors. And it considered as essential and used by investors in evaluating companies.

The result showed that influence investors' perceptions of startup XYZ are indicators whose values are above the average value of 4.2 which are 13 indicators as seen on Table 1. But as seen on Table 2, there are 6 main priorities that must be addressed at startup XYZ. These indicators can influence investors to invest in XYZ.

CONCLUSION

The study explored there are 13 indicators that influence investors' perceptions of startup XYZ, there are indicators whose values are above the average value of 4,2. XYZ also has 12 indicators that need to be maintained (out of 29 indicators) which indicates that the

company has been performing at an optimum level. But they have six indicators that need to be addressed as a main priority since it will influence the investors to invest in their startup. However, to get more attraction from investors, XYZ needs to make better strategy in monetizing their business. Targeting specific customer segment, increasing brand awareness and more innovation in product development can be an option of plan to grow the business.

RECOMMENDATIONS

Based on the research findings, the startups which looking for investment or a guide to attract the investors to minimize the risk and maximize the funding, can use this method and collaborate with the indicators to check their value to get investors' perceptions. The Importance Performance Analysis method is used to measure the performance of satisfaction that is considered important by the customer and the satisfaction performance received by the customer, and this method is easy to implement, cost-effective, and can easily evaluate the effectiveness of marketing programs.

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THE EFFECT OF ATM SERVICE QUALITY ON CUSTOMER'S SATISFACTION AND LOYALTY: AN EMPIRICAL ANALYSIS

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ABSTRACT

Technology has made the life faster and easier. With the growth of technology, every sector has upgraded them to be competitive in the market. With the introduction of latest technology, customer satisfaction comes into picture. Banks are also using technology for satisfying the customers. The bank offers various services to their customer to satisfy them. Automated Teller Machine (ATM) services if one of them. Customer satisfaction is the prime objective of Banks. This research work is aspiring to examine the ramification of Automated Teller Machine (ATM) service qualities on overall customer satisfaction. Survey method was used to collect data. Information from 211 ATM users was collected from different places of Kurdistan region using a structured questionnaire. A pilot survey was conducted to ensure all dimensions meets to its objectives of research. SPSS-22 was used for analyzing the data. To recognize the service quality components of ATM and their association with overall customer satisfaction descriptive analysis, correlation and coefficient and regression test and ANOVA test were used. Results indicates that majority of dimensions are significantly correlated with overall customer satisfaction. At the end, few recommendations were made for improvement of ATM service quality.

KEY WORDS

ATM services dimensions, convenient, customer satisfaction, ease of use, fulfillment, reliability, responsiveness, security, privacy.

There have been enormous development and broadening in banking exercises in the course of the last one-and-a-half decades. Improvement of a sound and satisfactory information system has turned into a need to address the difficulties of development and expansion. ATM (Automated Teller Machine) Services is one of them. At the time of manual exchanges, an account holder needed to hang tight for a considerable length of time at the bank counters for getting his own cash. ATM is an autoelectronic monetary outlet, which empowers customers to complete essential exchanges in absence of an operator of the branch. ATM implies both going without cash and whenever cash. Availability of ATMs at major places like Malls, Hospital, Fuel Stations and other prime location helps the customers to save lot of time. An ATM allows a banks customer to conduct their banking transactions 24*7, i.e. non-stop banking. By observing the potential market in Erbil city outside banks likewise opened their financial administrations in the area. The major outside banks are BBAC, Byblos bank, Vakyfbank, Bank Asya, IBL Bank¹. In spite of the nearness of various private banks, the State-owned banks dominate the Iraqi banking industry. The Iraqi financial part itself is made out of 7 state-claimed banks, which are by a long shot the most predominant performing artists in the division, and 47 private banks, 15 outside banks and 9 Islamic banks. Trade Bank of Iraq, Rafidain Bank and Rasheed Bank are the Iraq's three biggest state banks that hold 87% of the whole financial part's advantages¹. From this, the future prospects of ATM services tasks can be broke down.

Customer satisfaction and Services offered has always been a hot topic for the researchers to do their research work. With the advent of technology in banking system, it is expected that the customers would not face any hassle during the financial transaction. Coming to ATMs, there are working burden of ATM machines and routinely there are issues looked by customers while utilizing the ATM machines, for example, not providing the

money, charge exchange when money isn't apportioned, card stuck in the ATM, unfit to pull back money with found ATM and so on. As the users of ATM is expanding every day. It is essential to make an investigation to pick up understanding about the consumer satisfaction level concerning different parts of ATM services offered to them. With this problem, the researchers would like to investigate on the Satisfaction Level with the ATM services provided to them. Thus, the first objective for this research work becomes to investigate the consequences of various ATM service quality dimensions on customer satisfaction. And secondly to suggest recommendations based on research.

LITERATURE REVIEW

Previous researches are evident that ATM is an autoelectronic cabin where the customers visit it to make monetary transactions, be it cash dispensing, depositing or balance inquiry. Santos (2003) stated that ATM service quality is the clients' general assessment and prudence of the brilliance of services gave through ATM channels. Narteh (2013) opined that ATM quality dimensions have several dimensional and these dimensions are Trust/Reliability, Convenient, Easiness in use, Security and Privacy, Fulfillment, and Responsiveness.

Wolfenbarger and Gilly (2003) claimed of trust/reliability to be hearty translator of buyers loyalty in electronic channels. The reliability measurement is basic since it inserts the dynamic competency to play out the embraced administration constantly and precisely. In the ATM condition, dependability predicts the limit of the machine to work always, and give mistake free and steady administrations.

Narteh (2015, 2013) opined that Conveniences is regarded as the area or site of the ATM and includes 24/7 accessibility of the services to the customers. Al-Hawari et al., (2009) stated that convenience has been the most utilized element of ATM administration quality and has been observed to be decidedly identified with consumer satisfaction.

Gounaris and Koritos, (2008), examine utilizes the idea to mean how much ATMs offer inconvenience free exchange for the client. Viability is a key component in characterizing the acknowledgment and use of various data advancements, for example, web based banking. Analysts, for example, Al-Hawari et al. (2009) found that Ease of use prompts consumer satisfaction in case of ATM utilization.

Chong et al. (2010) uncover in Vietnam that security and protection as significant factors in the reception of E-banking. Each client anticipates insurance for their cash and individual data from their banks. In the studies of USA, Australia, and Pakistan, security and privacy were considered as important ATM service quality dimensions (Joseph and Stone, 2003; Al-Hawari et al., 2009). Subsequently, the present examination accepts that security and protection will be decidedly related to consumer satisfaction.

The satisfaction of sites affects all out quality, fulfillment, and dedication expectations (Wolfenbarger and Gilly 2003). Past investigations identified with ATM thought about satisfaction as a quality dimension to gauge result allure or how much the ATM performs results to meet the clients' desires. This incorporates the justifiability of notes given by the ATM (destroy fakes); the aggregate provided for customers per trade, and the ATM's esteem based charges forced on clients. Narteh (2015) discovered the accessibility of money and the quality of money to be significant ATM service quality factors.

Like all advancements, ATMs are likewise once in a while arranged to support disappointments. Responsiveness estimates the achievement of methodologies which the banks acquaint with show signs of improved services when ATM services are unfortunately settled (Narteh 2015). Responsiveness or recuperation is a noteworthy determinant in numerous electronic service quality scales (Parasuraman et al., 2005; Nambirajan and Prabhu 2010 Narteh 2013; 2015). Narteh (2015) expressed that compelling ATM reaction procedures envision consumer loyalty in Pakistan.

A client is said to be loyal to a brand that gives an attractive experience. Berrli et al., (2004) expressed that fulfillment has been appeared to have its impact on client loyalty and the reason that fulfillment together with close to home exchanging costs are forerunners of

reliability. Some researcher's points out that Satisfaction and loyalty are connected. Satisfaction is, thusly, a component of the overall dimension of desire and perceived execution. Desires are based on past involvement with the equivalent or comparative circumstances, explanations made by friends, or different partners (Oliver 1999; Prabhu et al., 2019)

Expanding on the current literature changed over, the present investigation recommends that Reliability, Convenience, Ease of use, Security and privacy, Responsiveness, and Fulfillment are anticipated to be the central elements of ATM service quality which will affect consumer loyalty and impact customer satisfaction. Thus, the following research framework is drafted.

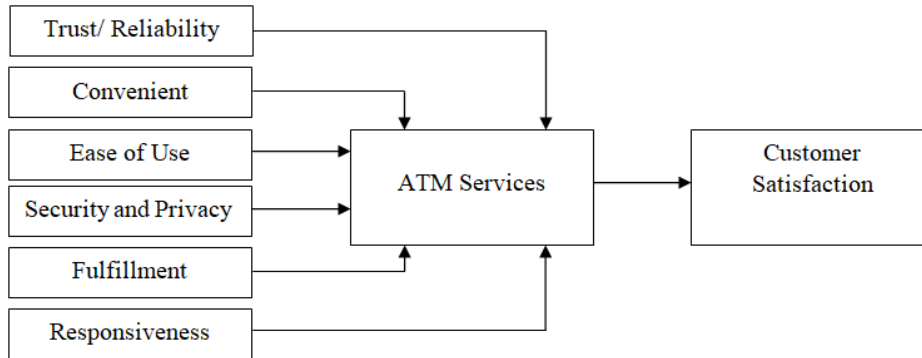


Figure 1 – Research Framework

METHODS OF RESEARCH

To investigate on ATM service quality impact on customer satisfaction, primary data were collected through structured questionnaire. Questionnaire was designed after deep study of many research papers. To document the respondents' opinion on ATM services five-point Likert-type questionnaires were used as a survey instrument (Ranging from "Strongly Agree" (5) to "Strongly Disagree" (1)).

The things utilized for the review instrument were embraced from before studies and the estimations taken are referenced in Table 2. The Questionnaire was based on two parts: one was related to demographic profile of respondents and the other was based on constructs. After compilation of the questionnaire, it was circulated among the respondents in both hard copy and soft copy form. A Simple Random convenience sampling method was implemented. A total of 230 questionnaires were distributed, but 211 usable completed questionnaires were received making the response rate to be 91.73%.

Data were collected from ATM users of different places of Kurdistan region.

Descriptive analysis, correlation analysis, reliability analysis was performed to assess the inner consistency of the things. Regression and ANOVA test performed to evaluate hypothesis testing by the help of IBM SPSS 25.0.

RESULTS AND DISCUSSION

Table 1 describes the demographic profile of respondents. In this research 54.5% male and 45.5% female participated. Majority of respondents were between 20-30 years i.e. 68.2%, 15.1% belongs to below 20 years, 8.6% between 30 to 40 years and 8.1% were from 41 – 50 years. Maximum respondents i.e. 37.7% are graduate, 30.3% are post graduate and 31.7% were under graduate. Maximum i.e. 46.4% are salaried employed, 30.3% are students, 23.2% are self employed. Maximum i.e. 31.3% respondents income level belongs to \$1001 to \$1500, then 22.8% between \$501 to \$1000, then 15.6% below \$500 and 7.5% for both between \$2001 to \$2500 and \$2500 to \$2500. It is quite disappointed that 37.9% respondents use their ATM card for balance enquiry and only 24.1% use for cash withdrawal.

Bank must have to pay attention towards this. 32.7% responds opinion is ATM is easy banking any time anywhere but only 9.9% respondents says it means for faster transactions.

Table 1 – Demographics Profile of the Respondents (%)

	n/n	Frequency	Percent
Gender	Male	115	54.5
	Female	96	45.5
Age (in years)	Below 20 years	32	15.1
	20 - 30 years	144	68.2
	30 - 40 years	18	8.6
	41 - 50 years	17	8.1
Education Qualification	Under Graduate	67	31.7
	Graduate	80	37.9
	Post Graduate and above	64	30.3
Occupation/ Economic Activity	Student	64	30.3
	Salaried Employed	98	46.4
	Self employed	49	23.2
Family Monthly Income	Below \$500	33	15.6
	Between \$ 501 to \$1000	48	22.8
	Between \$1001 to \$ 1500	66	31.3
	Between \$1501 to \$ 2000	32	15.2
	Between \$2001 to \$ 2500	16	7.5
	Above \$2500	16	7.5
Purpose of using ATM card	Cash withdrawal	51	24.1
	Balance Check	80	37.9
	Shopping	48	22.7
	Other	32	15.1
Reason to preference of ATM	Easy banking any time any where	69	32.7
	Easy to use	32	15.2
	Faster transactions	21	9.9
	Time saving	48	22.7
	All of above	41	19.4
	Total	211	100

Table 2 – Exploratory Factor Analysis

Items	Adapted Source	Factor Loadings
RELIABILITY Cronbach's Alpha= .802		
ATM works constantly.	Narteh, (2015)	.965
ATM provides consistent services.		.959
I don't discover counterfeit money notes from my ATM.	Jha et al. , (2014)	.981
I never found my ATM out of cash.		.927
CONVENIENCE Cronbach's Alpha= .754		
ATMs are conveniently located in my city.	Narteh, (2015)	.924
ATMs of my bank are easily found at all useful places like hospitals, malls, airports & stations etc.	Jha et al. , (2014)	.885
I can locate my bank's ATMs easily when I am out of station.	Narteh, (2015)	.735
ATM cards are perfect on different stages.		.899
EASE OF USE Cronbach's Alpha= .840		
ATM gives clear directions on use.	Narteh, (2015)	.942
ATMs are user friendly for transactions.		.927
Language of ATM is easy.		.973
ATM gives illustrations and adverts of bank administrations.		.964
SECURITY AND PRIVACY Cronbach's Alpha= .700		
I can rely and have belief in the security of ATM Banking.	Narteh, (2015)	.959
I feel safe amid ATM exchanges.		.981
I believe in the security of my own data.	Collier, (2006)	.927
I trust that Bank ATM will not misuse my personal information.		.971
FULFILLMENT Cronbach's Alpha= .696		
ATM provides fast services.	Narteh, (2015)	.965
ATM gives enough cash amid exchanges.		.959
ATM fulfills the majority of my financial needs.		.981
ATM charges are sensible.		.927
ATM gives instant money all the time.		.971
RESPONSIVENESS Cronbach's Alpha= .821		
ATM contact person is available to set right the problems.	Narteh, (2015)	.836
ATM Broken-down are promptly fixed.		.927
ATM cards are speedily replaced.		.973
ATM banking is able to settle complaints in a very short time.		.938
CUSTOMER SATISFACTION Cronbach's Alpha= .786		
My bank's ATMs provide me all the service that I need.	Cockrill et al., (2009)	.959
Generally speaking, I am exceptionally happy with the services an ATM gives me.		.976
I like to urge family, friends and relatives to utilize an ATM machine worked by this bank.	Casalo et al., (2008)	.918
I imagine that I settled on the right choice to utilize this current bank's ATM		.768
CUSTOMER LOYALTY Cronbach's Alpha= .759		
I have a positive passionate association with the bank's ATM I have picked.	Eakuru and Matt, (2008)	.879
I intend to remain a user of the bank's ATM I have chosen.		.928
I would dependably prescribe my bank's ATM to somebody who looks for my recommendation.	Beerli et al., (2004)	.859
In light of my experience, I am in all respects prone to proceed with my association with this present bank's ATM in the following months.	Casalo et al., (2008)	.906

Source: Authors' calculations

The Cronbach's alpha reliability test has been utilized to distinguish the items utilized in review. From the table no. 2 Cronbach's alpha for group variables of Reliability (.802), Convenience (.754), Ease of use (.840), Security and Privacy (.700), Fulfillment (.696), Responsiveness (.821), Customer Satisfaction (.786) and Customer Loyalty (.759).

To check the dimensionality of the instrument, all the items of the questionnaire were factor analyzed by using varimax rotation. The validation process was initiated with an underlying exploratory examination of reliability and dimensionality. Values of test of Bartlett test of sphericity and Kaiser-Meyer-Olkin (KMO) unwavering quality and dimensionality. and the group and individual's variable have more than .700 up to .981, it means they are highly reliable variable for further research.

Table 3 shows total number of Respondents, its Means and Standard Deviation of respondents. The table shows the extent to which the participated respondents agreed/disagreed with the questions. The highest mean was 4.85 (I don't discover counterfeit money notes from my ATM, I feel safe during ATM transactions and thirdly ATM fulfills the majority of my financial needs.) and 4.15 (I trust that Bank ATM will not misuse my personal information and ATM gives instant money all the time) while least was 2.54 (ATM gives illustrations and adverts of bank administrations).

Table 3 – Descriptive Statistics

n/n	N	Mean	Std. Deviation
ATM works constantly.	211	2.77	.893
ATM provides consistent services.	211	3.08	1.074
I don't discover counterfeit money notes from my ATM.	211	4.85	.534
I never found my ATM out of cash.	211	3.31	.823
ATMs are conveniently located in my city.	211	3.38	.626
ATMs of my bank are easily found at all useful places like hospitals, malls, airports & stations etc.	211	3.38	.626
I can locate my bank's ATMs easily when I am out of station.	211	3.38	.626
ATM cards are perfect on different stages.	211	3.08	.617
ATM gives clear directions on use.	211	3.46	.845
ATMs are user friendly for transactions.	211	3.69	1.068
Language of ATM is easy.	211	3.46	.932
ATM gives illustrations and adverts of bank administrations.	211	2.54	.845
I can rely and have confidence in the security of ATM Banking.	211	3.08	1.074
I feel safe during ATM transactions.	211	4.85	.534
I believe in the security of my own data.	211	3.31	.823
I trust that Bank ATM will not misuse my personal information.	211	4.15	.362
ATM provides fast services.	211	2.77	.893
ATM gives enough cash amid exchanges.	211	3.08	1.074
ATM fulfills the majority of my financial needs.	211	4.85	.534
ATM charges are sensible.	211	3.31	.823
ATM gives instant money all the time.	211	4.15	.362
ATM Contact person is available to set right the problems	211	3.38	.838
ATM Broken-down are promptly fixed.	211	3.69	1.068
ATM cards are speedily replaced.	211	3.46	.932
ATM banking is able to settle complaints in a very short time.	211	3.23	.893
My bank's ATMs provide me all the service that I need.	211	3.38	.626
Generally speaking, I am exceptionally happy with the services an ATM gives me.	211	3.38	.626
I like to urge family, friends and relatives to utilize an ATM machine worked by this bank.	211	3.38	.626
I imagine that I settled on the right choice to utilize this current bank's ATM	211	3.15	.534
I have a positive passionate association with the bank's ATM I have picked.	211	3.69	.463
I intend to remain a user of the bank's ATM I have chosen.	211	3.77	.422
I would dependably prescribe my bank's ATM to somebody who looks for my recommendation.	211	3.69	.463
In light of my experience, I am in all respects prone to proceed with my association with this present bank's ATM in the following months.	211	3.31	.723
Valid N (listwise)	211		

Connection between Service Quality and Comprehensive Customer Satisfaction:

- H_{01} : There is no critical connection between overall service quality dimensions and clients' satisfaction in ATM service;
- H_{a1} : There is critical connection between overall service quality dimensions and clients' satisfaction in ATM service.

Dilijonas et al., (2009) and Komal & Singh, (2009) found that that service quality has critical connection with overall customers satisfaction in ATM service. However, the present research does not fully support this. Table no. 4 indicates that from all dimensions four dimensions are significantly correlated with overall customer satisfaction and three dimensions are not significantly correlated. Easy to use, Reliability and Convenience are correlated and is significant at the 001 level (2 tailed), Fulfillment is correlated at 0.05 level. Whereas, Responsiveness, Security & Privacy, and Customer Loyalty are not in significant level with overall customer satisfaction.

Table 4 – Correlations

n/n		Reliability	Convenience	Easy_to_use	Security Privacy	Fulfillment	Responsiveness	Customer Satisfaction	Customer Loyalty
Reliability	Pearson Correlation	1	-.412**	.779**	.924**	.990**	.823**	.252**	.430**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
	N	211	211	211	211	211	211	211	211
Convenience	Pearson Correlation	-.412**	1	-.288**	-.191**	-.321**	-.355**	-.278**	-.392**
	Sig. (2-tailed)	.000		.000	.006	.000	.000	.000	.000
	N	211	211	211	211	211	211	211	211
Easy_to_use	Pearson Correlation	.779**	-.288**	1	.716**	.797**	.945**	.192**	.699**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.005	.000
	N	211	211	211	211	211	211	211	211
Security_Privacy	Pearson Correlation	.924**	-.191**	.716**	1	.946**	.802**	.027	.371**
	Sig. (2-tailed)	.000	.006	.000		.000	.000	.695	.000
	N	211	211	211	211	211	211	211	211
Fulfillment	Pearson Correlation	.990**	-.321**	.797**	.946**	1	.849**	.162*	.427**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.019	.000
	N	211	211	211	211	211	211	211	211
Responsiveness	Pearson Correlation	.823**	-.355**	.945**	.802**	.849**	1	.053	.580**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.449	.000
	N	211	211	211	211	211	211	211	211
Customer_Satisfaction	Pearson Correlation	.252**	-.278**	.192**	.027	.162*	.053	1	-.021
	Sig. (2-tailed)	.000	.000	.005	.695	.019	.449		.758
	N	211	211	211	211	211	211	211	211
Customer_Loyalty	Pearson Correlation	.430**	-.392**	.699**	.371**	.427**	.580**	-.021	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.758	
	N	211	211	211	211	211	211	211	211

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Therefore:

- H₀₁ was accepted in case of Responsiveness, Security & Privacy and Customer Loyalty;
- H_{a1} was accepted in case of Easy to Use, Reliability, Convenience and Fulfillment criteria.

Hypothesis:

- H01 (Null Hypothesis): Customer satisfaction is not dependent on responsiveness;
- Ha1 (Alternative Hypothesis): Customer satisfaction is dependent on responsiveness;
- H02 (Null Hypothesis): Customer satisfaction is not dependent on easy to use;
- Ha2 (Alternative Hypothesis): Customer satisfaction is dependent on easy to use;
- H03 (Null Hypothesis): Customer satisfaction is not dependent on reliability;
- Ha3 (Alternative Hypothesis): Customer satisfaction is dependent on reliability;
- H04 (Null Hypothesis): Customer satisfaction is not dependent on convenience;
- Ha4 (Alternative Hypothesis): Customer satisfaction is dependent on convenience;
- H05 (Null Hypothesis): Customer satisfaction is not dependent on fulfillment;
- Ha5 (Alternative Hypothesis): Customer satisfaction is dependent on fulfillment;
- H06 (Null Hypothesis): Customer satisfaction is not dependent on security and privacy;
- Ha6 (Alternative Hypothesis): Customer satisfaction is dependent on security and privacy;
- H07 (Null Hypothesis): Customer satisfaction is not dependent on customer loyalty;
- Ha7 (Alternative Hypothesis): Customer satisfaction is dependent on customer loyalty.

Model:

The authors have used the overall customer satisfaction as the dependent variable and others dimensions modified in groups like – responsiveness, easy to use, reliability, convenience, fulfillment, security and privacy and customer loyalty as the independent variables.

The Regression model as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + e_i$$

Where: Y = Overall Customer Satisfaction; X₁= Responsiveness; X₂=Easy to use; X₃ =Reliability; X₄=Convenience; X₅= Fulfillment; X₆= Security and privacy; X₇= Customer loyalty; e_i=Error.

The overall regression model and its ANOVA are summarized as follows:

Table 5 – Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.883 ^a	.780	.772	.90711	.780	101.345	7	200	.000
a. Predictors: (Constant), Customer_Loyalty, Security_Privacy, Convenience, Easy_to_use, Reliability, Responsiveness, Fulfillment									
b. Dependent Variable: Customer_Satisfaction									

Table 6 – ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	583.739	7	83.391	101.345	.000 ^b
	Residual	164.569	200	.823		
	Total	748.308	207			
a. Dependent Variable: Customer_Satisfaction						
b. Predictors: (Constant), Customer_Loyalty, Security_Privacy, Convenience, Easy_to_use, Reliability, Responsiveness, Fulfillment						

Table 7 – Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	31.182	1.429		21.819	.000
	Responsiveness	-.588	.143	-.935	-4.122	.000
	Easy_to_use	.963	.136	1.540	7.073	.000
	Reliability	4.271	.405	5.791	10.541	.000
	Convenience	.222	.101	.221	2.206	.029
	Fulfillment	-3.906	.377	-5.349	-10.370	.000
	Security_privacy	-.332	.130	-.379	-2.552	.011
	Customer_loyalty	-.632	.084	-.533	-7.523	.000
a. Dependent Variable: Customer_Satisfaction						

Table 8 – Hypothesis Testing

Path	Significance	Hypothesis accepted	Remark
Responsiveness to customer satisfaction	.000	Ha1 (Alternative Hypothesis)	Customer satisfaction is dependent on responsiveness.
Easy to use to customer satisfaction	.000	Ha2 (Alternative Hypothesis)	Customer satisfaction is dependent on easy to use
Reliability to customer satisfaction	.000	Ha3 (Alternative Hypothesis):	Customer satisfaction is dependent on reliability.
Convenience to customer satisfaction	.000	Ha4 (Alternative Hypothesis):	Customer satisfaction is dependent on convenience.
Fulfillment to customer satisfaction	.029	H05 (Null Hypothesis)	Customer satisfaction is not dependent on fulfillment.
Security and privacy to customer satisfaction	.000	Ha6 (Alternative Hypothesis)	Customer satisfaction is dependent on security and privacy.
Customer loyalty to customer satisfactions	.011	H07 (Null Hypothesis)	Customer satisfaction is not dependent on customer loyalty

From the above ANOVA test table no. 6 significance level is .000 and calculated value of ANOVA is 101.345 is greater than the critical value. Hence, it is proved that null hypothesis is rejected. It shows that alternative hypothesis is accepted. Its means that there is a significance relation between the customer satisfaction and various dimensions of ATM services.

From table no. 5 of model summary, it can be concluded that all mentioned dimensions of ATM services have 78% impact on overall customer satisfaction which can be considered a high significance impact.

Here, the value of R=.883. There is a high volume of positive correlation among the independent and dependent variables.

Value of $R^2 = .780$ or 78.0% or 78%. 78% variation in the dependent variables can be concluded by the regression model.

Adjusted $R^2 = .772$ or 77.2% or 77%.

The Regression Equation:

$$\text{The customer satisfaction (Y) = } 31.182 + (-.588) (X1) + 0.963 (X2) + 4.271 (X3) + 0.222 (X4) + (-3.906) (X5) + (-.332) (X6) + (-.632) (X7)$$

CONCLUSION AND RECOMMENDATIONS

After this research it can be concluded that a) maximum respondents are youngsters b) maximum are graduated c) they mould into moderate income class d) but respondents they use ATM for balance enquiry and in comparison lesser in cash withdrawal and online shopping which is point of concern e) when respondents says ATM is easy banking any time anywhere so why they do use only for only two times or three times only? It is because they do not have trust on online payment and trust more on agencies f) if we look at each and every dimension of ATM service (Table 2) it is observed that there is very significant difference in opinion of respondents. Because of population is growing up banking industry have wide scope in future. Banking industry must earn the confidence of the respondents by providing safer transaction; do the changes after doing pilot survey and taking opinion of the respondents.

This research is carried out in different places of Erbil city. The result is based on information provided by the respondents. Because of time constraints maximum populations could not be traced. Different places may have different opinion.

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BUSINESS PLANNING OF HUMAN RESOURCES MANAGEMENT: THE HOSPITAL CLASS ENHANCING PROGRAM – FROM CLASS D TO BE CLASS C

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ABSTRACT

Preparing human resources for the hospital class improvement is very important because the human resources in the hospital is an important asset with a variety of their respective fields, both professionals and personnel who support it. When preparing human resources we need to know what kind of services that will be given, so we can predict the number and type of personnel who will provide for the service. Pademangan Regional General Hospital conducting its business by using hold and maintenance strategy with the main strategy of market penetration require reliable and skilled human resources in marketing the excellent service type which is owned by professional so that people get to know Pademangan General Hospital. The government has regulated amount and type of labor requirements required in accordance with the hospital class by the method of counting to the workload and the level of dependence of the patient for determining Human Resources. Human resource management start from job analysis that will be given to the employee, making job description, recruitment, new employee orientation, training, seminar and workshop. Training adjusted by the needs of the company to produce employees with dedication and high integrity.

KEY WORDS

Strategy, management, hospital staff, human resource.

Referring to the Republic of Indonesia's Law number 44 of 2009 about hospitals that the health service is the right of every person guaranteed in the 1945 Constitution of the Republic of Indonesia which must be realized with the effort to improve the highest level of public health. In addition, the hospital is a health service institution for people who provide services and have a specific in terms of human resources, infrastructure, and equipment used. Although it has characteristics that are slightly different from other industries.

In the National Health Insurance (JKN) era the governments command the Indonesian people to participate in the Indonesian public health improvement program with BPJS health insurance. In the implementation of the program the hospital as a place of health care providers receive policies regulated by the government, especially about the payment of patient care costs for hospital treatment. There is a significant difference between class D hospitals with class C hospitals, which is higher cost rates for the same illness and cases in class C, therefore the preparation of human resources is essential for the improvement of the hospital class.

LITERATURE REVIEW

Human resource management is a study or a way to manage how the relationship and role of manpower work effectively and efficiently so that it can be maximized to achieve common goals, both for the company and for the employees themselves. Human resource management used to manage people, it is important because within the organization or company employees become the driving force of the life of the company. Human Resource Management has two functions: managerial functions and operational functions. Managerial functions include planning, organizing, directing, and controlling. While the operational

function is the procurement of labor, development, integration, maintenance, compensation and termination of employment.

In the hospital industry, employees are an important asset with a variety of respective fields, both professionals and workers who support it. In addition the hospital is a capital-intensive and labor-intensive enterprise, so that required good human resource management in accordance with competency standard. Similarly, in terms of energy needed in the hospital industry is very different from the company in general. For that government set in Permenkes number 56 year 2014 about the needs of medical and non-medical personnel in accordance with the hospital class.

In performing its functions human resource management to create a strategy to manage resources owned, it can be described as seen in Table 1.

Table 1 – Human Resource Management Strategy

Function	Strategy	Activity
Managerial	Analysis and design of work	Identify tasks, duties (duty), and responsibilities (Kaswan, 2012: 19) The hospital identifies the required profession, as well as determines the qualifications appropriate to the task to be performed.
	Human Resource Planning	Human Resource Planning involves how many people are required to perform the activities assigned, and what to do (Kaswan, 2012: 20) Ensure that the organization has the right amount of human resources, available the right type of workforce, available at the right time, for the right position or place, and doing the right job. The hospital planned the type of services, qualifications and workloads.
	Recruiting	Activities undertaken by the organization in order to identify and attract potential qualified employers. The hospital should undertake a recruitment process by specifying recruitment methods, listing candidates, selecting eligible candidates, make deals with elected candidates and pass the selection.
	Selection	The process which the organization identifies applicant knowledge, skills, abilities and other characteristics that needed to assist the organization to achieve the goal (Sekiguchi, 2004). In conducting the selection of hospital staff candidates set in Governor Regulation no 837 of 2015 on the selection of the Department of Health DKI Jakarta Province.
	Training and Development	Training and development is very important in the company. Training refers to the need for skills currently, while the development is for the future. In the need to improve the quality of service and professionalism for employees hospital conduct training, both internal and external so that employees have the same standards in providing services to patients and families. The hospital also conducts development for employees for the future of the hospital.
Operational	Compensation	Compensation that receive by employees on a regular basis, whether in the form of wages or salaries. Hospitals provide fixed compensation (salary or wages), compensation of variables (bonuses, incentives, commissions) and non-financial compensation benefits received by employees for good performance outcomes in the form of praise, recognition, self-esteem, achievement, responsibility, progress, development.
	Performance management	Performance management is defined as the way managers ensure that employee activities and work results are consistent with organizational goals (Aguinis, 2009). Hospital performance is reflected in the performance of its employees, demonstrated by ownership, full of responsibility and high loyalty.
	Employee Relations	In a hospital organization the work environment will provide comfort, feel involved, understandably and trust each other so that employees will work well. Hospitals should have Value (value that is applied in work culture in hospital). So all employees in carrying out their duties and work apply the values of organizational culture.

FRAMEWORK OF STUDY

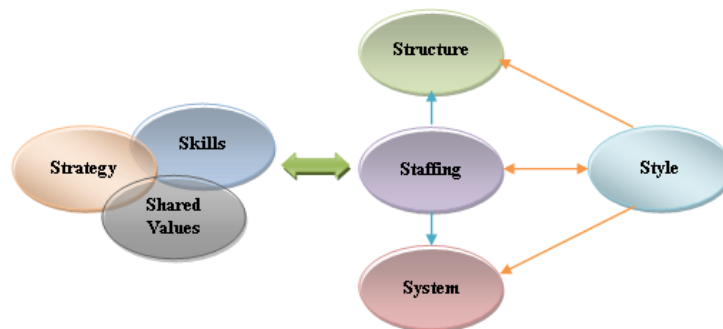


Figure 1 – Research Framework (Source: Harvard Business School Management Consulting Club)

In running the operational of Pademangan Public Regional Hospital, McKinsey 7S framework is being used. In running the hospital business, the hospital uses strategy based on internal and external analysis. From those analysis, Pademangan Public Regional Hospital use Market Penetration strategy. Market Penetration is a growth strategy where a company focuses on selling the products which are in the market before while maintaining the hospital service quality and improving the facility by adding services based on android and Apple.

This model shows a relationship between leader, organization culture, and strategy. Mc Kinsey elaborates that strategy (strategy) that agreed by the leaders have to be supported by organization structure (structure) and system (system) applied on that organization. Those structure and system are decided by leader (Style). Leader decided who will help him (staff) and skills own by those staffs. Structure, system, style, staff and skill contributes to the success of the strategy. Contribution from 5S (structure, system, style, staff and skill) blend into one variable called Shared Value or as we know Culture (Organization Culture) (Pearce and Robinson, 2000).

Strategy is a way chosen by organization for it's future or a plan designed by organization to get sustainable competitive advantage. In running business, hospital uses strategy based on result of external and internal hospital analysis. After running an internal analysis (strength, weakness) and external analysis (opportunity, threat) it yields a correct strategy for developing organization or hospital.

Organization culture is a set of belief and attitude applied between the member of organization. Culture that adapts and pushes member involvement could brighten the goals and the direction of operational strategy and teaches values and beliefs that could help organization reach the growth, reach the target, and earn profit and give higher satisfaction for the customers (Darmawan, 2013).

Skill is a unique ability owned by the employee which different an organization from others. To support strategy chosen, hospital provides medical staffs that have skill in operating the hospital. Each one of the profession has specific skill to carry on the job. One skill that has to be in every employee is communicated on. This is very important because every activity require verbal or non-verbal communication. Because of that hospital prepare marketing staffs that promotes hospital services provided by the hospital. The marketing staffs has to be able to use strategy to aim the market so people could be interested in using service provided by Pademangan Public Regional Hospital. Aside from the marketing staff, hospital should provide staff to handle the application as a higher service for the customers, so the customers could get the healthcare easier. Skill doesn't happen overnight, skill needs training and education, interprofessional workshop, internal and external. General training starts from front line to back office. General training like basic life support, disaster management, fire management, hand hygiene, effective communication, and excellent service are very important.

Training for nurses focuses on competency that has to be owned depend on the career in nurses. For medical skill and nursing skill, they had to be given an emergency training, methods used are bedside teaching, classes and mentoring for new nurses.

Structure is a frame where activity of the members is coordinated. Organization structure is a composition from different components or work unit in an organization. In this structure there are division of work and how functions are being coordinated and there is also line of command and presentation of report. The function in organization is to give information to the employee to know the activity or job that they have to do, consulting and responsible to whom, so the process to reach a goal could be succeeded as planned.

Staff is a human resource in an organization; according to how employee trained, built, socialized, integrated, motivated, and how their career managed. In organization structure this belongs to Human Resource Development that has training and development program to manage employee so they could become trained ones. Having a wide knowledge, good ethics in providing service. Integrated coordination is need from every part of the hospital, not only doctors and nurses but also every department are trained to have equivalent position based on their part in giving health service. Service staff help leader in carrying on the task,

In giving service to all the line in organization. The main function in service staff is to give the best service in a form of operational activity, not giving advice or judgment. Every staff in hospital carry on the work based on decided job description, so they can give fast and correct service professionally.

System is informal and formal procedure, innovation system included, compensation system, management of information system, capital allocation system that decide everyday activity. System is translated on decision, guidelines, ways, and standard operational procedure. System manage could be in a manual or electronic form. Hospital built on integrated service system could give satisfaction to patients and their family. Reciprocally in managing employee, it should be one system that provide quality employee with a standardized recruitment process, training with socialization and development of the employee for the organization.

Leadership in organization or company is needed. An ideal leader has to be able to persade, motivate, push people into giving contribution and work effectively until reaching a success by a company or organization. The leadership style often had by the leaders is transformational leadership. This leadership points to positive changes to the subordinate. Transformational leaders mostly are energetic, enthusiastic, passionate, not only the leaders pay attention and get involved but also are focused on helping every member of the organization to succeed. Hospital Leader (directors) have qualification listed, is a doctor that have skill to manage hospital.

The need of hospital staff is based on staffing standard of the government regulations, consist of doctors, specialists, dentist, nurses, midwives, dental nurses, pharmacist, pharmacy assistant, nutritionist, sanitarian, medical analysis, radiographer, physiotherapist, medical record, refractions, electro medic staff, public relation, structural board, and functional staff. This need refer to work load. For example, calculating the need of nurses could be done referring to Depkes (2003): Calculating the amount of nurses are influenced by patient dependency, room lay out, diagnostic test outside the care room. According to Depkes (2003) this calculation based on patient dependency, the amount of patient a day, hours of care that needed /day/patient, the hours of room/day, effective work hour every nurse.

Based on the level of dependence of nursing care patients are divided into: (1) Minimal nursing care 2 hours / 24 hours include personal hygiene, bathing, clothes changing by their own, eating and drinking by their own, ambulation with supervision, vital signs observation every shift, minimal treatment, stable psychological status. (2) moderate nursing care 3,08 hours / 24 hours include; personal hygiene aided, aided eating and drinking, vital signs observation every 4 hours, assisted ambulation, treatment more than once. (3) Heavy nursing care 4.15 hours / 24 hours covering assisting most activities, vital signs observation every 2 to 4 hours, equipped with folley catheter and recorded intake & output, equipped with infusion, treatment more than once, treatment with necessary preparation (4) Maximum nursing care 6.16 hours / 24 hours include; all activities are assisted by nurse, arranged position, vital signs observation every 2 hours, feeding patients using Naso Gastric Tube, intra venous therapy, suction utilization.

Calculation Number of Effective Days of Nurse and calculation of nurse staff:

1.	Number of non-effective working days in 1 year:
a.	Sundays/ year = 52 days
b.	National holidays/year= 12 days
c.	Day-offs/ year = 12 days
d.	Sick leaves/year = 5 days
e.	Development = 2 days
Total = 86 days	
2.	Number of effective working days in 1 year = 365 days- 86 days = 279 days
3.	Number of effective working hours of nurses:
a.	Number of effective working weeks =279: 7 = 39,8 = 40 weeks (rounded up)
b.	Number of effective working hours in 1 year = 40 weeks x 40 hours = 1600 hours/year
4.	Analysis of activities to meet patients' requirements
a.	Number of days in 1 year = 365 days
b.	Number of non-effective days/year = 86 days
c.	Number of effective working days = 279 days

Example of treatment rooms requirement's calculating: number of beds – 19; average number of patients per day – 18.

Table 2 – Average Number of Patients per Day

Categories	Average Σ patients/day	Σ Hours nurses/day	Σ Treatments rooms/day
Minimal nursing care	-	2	-
Moderate nursing care	2	3,08	6,16
Heavy nursing care	13	4,15	53,9
Maximum nursing care	3	6,16	18,4
Total	18		78,5

$$\Sigma \text{ required nurses: } \frac{\Sigma \text{ treatment hours/day}}{\text{Effectiveworking hours/shift}} = \frac{78,5}{7} = 11,2$$

$$\text{Loss day: } \frac{\Sigma \text{Non-effectivedays}}{\text{Effectiveworkingday hours}} \times \Sigma \text{ nurses} = \frac{86}{279} \times 11,2 = 3,4$$

$$\text{Correction 25\% (non-nursing tasks): } = \frac{25}{100} \times (\Sigma \text{ nurse staffs} + \text{loss day}) = \frac{25}{100} \times (11,2 + 3,4) = 3,65$$

Total required nurses: $11,2 + 3,4 + 3,65 = 18,25 = 18 \text{ person} + 1 \text{ Ka. Unit} + 1 \text{ Maternal leave} = 20 \text{ person}$

Ministry of Health Decree No. 81 / MENKES / SK / I / 2004 on guidelines for the arrangement of human resources of health at provincial, regency / municipality level and hospitals is a guideline used for planning of supply and demand Source of Workload Indicator Staffing Need (WISN), as the method described is an indicator that shows the amount of personnel requirements on health facilities is based on workload, therefore location / relocation will be easier and rational.

The human resource requirements calculation based on WISN includes 5 steps, namely:

- Determining available working time;
- Establishing working units and HR categories;
- Arranging workload standards;
- Arranging permission standards;
- The calculation of personnel requirements per work unit.

Table 3 – Class C Hospital Personnel Requirements

No	Occupation	Available number	Consist off		Additional
			Government employee (GE)	Non GE	
1	Medical Specialist	13	1	12	5
2	General Practitioner	10	4	6	1
3	Dentist	2	1	1	0
4	Nurse	43	2	41	6
5	Midwife	15	3	12	0
6	Dental nurse	2	-	2	0
7	Pharmacist	2	-	2	6
8	Pharmacist assistant	7	1	6	0
9	Nutritionist	3	-	3	0
10	Sanitarian	2	1	1	0
11	Medical Analyst	8	-	8	0
12	Radiographer	5	-	5	0
13	Physiotherapist	2	-	2	0
14	Medical record staff	3	-	3	1
15	Refractionist	-	-	-	1
16	Electromedical engineer	1	-	1	1
17	Public Relation, Marketing	1	-	1	1
18	Structural staff	4	-	4	0
19	General functional staff	71	3	68	0

CONCLUSION

In order to improve the hospital class, reliable personnel are required to run the strategy and plan. Changes in labor standards should be in accordance with the requirements for licensing for hospital grade improvement. In terms of the addition of the

number of personnel, personnel specification improvement is needed to meet the service target. To add the number of personnel, improvement of knowledge and skills of the caregivers who serve the patient. Therefore, the quality of services provided becomes improved.

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EFFECT OF CAPITAL STRUCTURE ON RETURN ON EQUITY: A SURVEY ON ISSUERS OF CATEGORIES JII70 OF THE INDONESIA STOCK EXCHANGE

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ABSTRACT

The research conducted in this study is the effect of the capital structure on return on equity, the survey was conducted on issuers in the JII70 with a sample of 32 issuers. The data taken are financial report data for 2016 and 2017. Based on the results of data processing with the SPSS version 25, it shows that the capital structure has a positive and significant effect on return on equity. This positive influence shows that effective use of debt will have an impact on return on equity increasing. But this increase in capital structure is a result of debt expansion. Therefore debt needs to be controlled and evaluated so that its use is effective which will ultimately have an impact on return on equity.

KEY WORDS

Capital structure, return on equity, financial report, survey, business.

Business risk is a very important indicator in determining the optimal capital structure. The business risk of each company will be different, this depends on the type of industry, thus the capital structure will vary greatly.

One of the important decisions faced by financial managers in relation to company operations is the decision on Capital Structure, namely financial decisions relating to the composition of debt, preferred shares and ordinary shares that must be used by the company.

Decision Capital Structure taken by the manager, not only affects the profitability of the company but also affects the risks faced by the company, because the capital structure contains the cost of debt and the cost of equity as a burden or risk for a company.

Capital Structure is a funding choice between debt and equity. Determination of the right capital structure will determine the success of a company in achieving its objectives. Determination of the size of capital requires the right solution so that available funds can maintain the continuity of the company.

Based on this background the researcher is interested in examining the effect of capital structure on return on equity, a survey of issuers in the category JII70.

LITERATURE REVIEW

Debt and capital are sources of corporate financing in carrying out company activities. The funding source is used by companies to purchase assets both current assets and fixed assets. In financing current assets, the source used comes from short-term debt, while financing for fixed assets comes from long-term debt and equity. The sources of financing both debt and equity require costs, because the source of financing must be used effectively and efficiently to produce maximum returns.

Various methods used to analyze the success of the company related to the effectiveness of the use of financing sources, one of which is return on equity, which measures the level of profits associated with invested capital or equity. *Return On Equity* (ROE) is a ratio to measure net income after tax with own. *Return On Equity* is a measurement of income (*income*) that is available to the owners of the company (both ordinary shareholders and preferred shares) for the capital they invest into the company.

In general, the higher the *return* or return obtained, the better the value of the company and vice versa if the *return* or return obtained is low then the worse the value of the company. Thus ROE will determine the value of the company. Then the formula used to

measure the performance is *Return On Equity* (ROE) = Net profit after taxes / Shareholders' equity (Van Horne, James C., John M. Wachowicz, Jr. 2008) or ROE = Net Income / Average Total Stockholders' Equity (Williams, Susan F, Bettner and Carcello, 2008).

The capital invested in the company is made the basis for measuring the level of success of the company in carrying out its activities. However, in carrying out the activities of the company the funds used are not only sourced from equity but from debt, both short-term debt and long-term debt. Therefore it is necessary to analyze the proportion of debt used in the company; the results of the analysis will reflect the effectiveness of the use of debt. If debt is used effectively, it will support the success of the company, but if the debt is not used effectively, it becomes a burden on the company which ultimately impacts on the company's performance. The proportion of debt with equity is known as the capital structure or capital structure.

The mixture of debt and equity, a business use, is called its *capital structure* (Libby, Robert, Patricia A. Libby, Daniel G. Short. 2011). Capital structure is a mixture of a firm's long-term debt, short-term debt, common equity and preferred equity. When analysts refer to capital structure, they are most likely to refer to a firm's debt-to-equity (D/E) ratio, the Debt-to-Equity Ratio as a Measure of Capital Structure (<https://www.investopedia.com/terms/c/capitalstructure.asp>).

With a combination of debt and capital as a source of assets and operational financing, it is expected to provide maximum benefits, because in the source of funds contained costs, both the cost of debt and the cost of equity. Thus, with these assets must generate maximum income to finance debt in the form of interest to the debtor and dividends that must be given to investors. The two sources of financing are described in the chart as follows (Gapenski, Louis C, 2005):

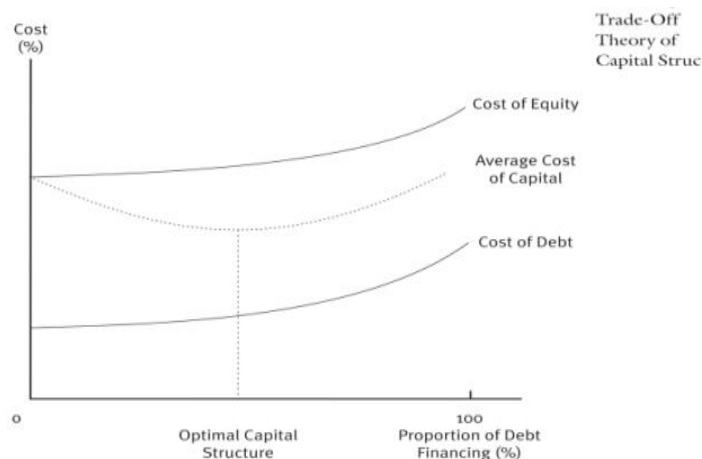


Figure 1 – Trade-Off Theory of Capital Structure

In figure 1 above, shows what is most relevant to the financing decision not only the cost of debt or just the cost of equity but the weighted average cost (combination) of the two components. Weighted average costs are displayed on the chart as dashed lines labeled "average capital costs." At zero debt (Y axis), the company is financed by all equity, so the average cost of capital is only the cost of its equity. When a business first starts using debt financing, it adds a lower cost component to its capital structure, and therefore the average cost of financing decreases. However, when the proportion of debt financing increases, both the cost of equity and the cost of debt increase, and at an increasing rate. At some point, increased component costs outweigh the fact that more low-cost debt components are being used, and the average cost of capital outflows. Beyond this point, the cost of average capital starts to increase.

There are four factors that influence decision making Structure capital (Houston and Brigham; 2010): business risk; the firm's tax position; financial flexibility; managerial conservatism or aggressiveness.

METHODS OF RESEARCH

The method used in this research is descriptive analysis. Then the variables studied consisted of capital structure as an independent variable and dividend payout ratio as a dependent variable.

The population in this study was all issuers include the category JII70 Index in Indonesia Stock Exchange which consists of 70 listed companies into the *list* JII70 Index constituents per 28 November 2018. Then the sample of this research is the issuer who met the study criteria as the following:

1. Issuers who distribute dividends in 2016 and 2017.
2. Reporting the Long Term at the end of 2016 and 2017.

Based on the criteria set, out of 70 issuers obtained 34 issuers who meet the criteria set by the researcher consisting of:

Table 1 – Research Subject

No	Code	Emitter	No	Code	Emitter
1	LPPF	Matahari Dept Store Tbk	17	KLBF	Kalbe Farma Tbk
2	LSIP	PP London Sumatra Indonesia Tbk	18	KAEF	Kimia Farma Tbk
3	MAPI	Mitra Adiperkasa Tbk	19	JSMR	Jasa Marga (Persero)Tbk
4	MNCN	Media Nusantara Citra Tbk	20	ITMG	Indo Tambangraya Megah Tbk
5	MYOR	Mayora Indah Tbk	21	ISAT	Indosat Tbk
6	PGAS	Perusahaan Gas Negara Tbk	22	INTP	Indocement Tunggal Prakars Tbk
7	PTBA	Bukit Asam Tbk	23	INDF	Indofood Sukses Makmur Tbk
8	RALS	Ramayana Lestari Sentosa Tbk	24	ICBP	Indofood CBP Makmur Tbk
9	SCMA	Surya Citra Media Tbk	25	AALI	Astra Agro Lestari Tbk
10	SIDO	Industi Jamu danFarmasi Sido Muncul Tbk	26	ACES	Ace Hardware Indoenesia Tbk
11	SIMP	Salim Ivomas Pratama Tbk	27	ADRO	Adero Energy Tbk
12	SMBR	Semen Baturaja (Persero) Tbk	28	AKRA	AKR Corporindo Tbk
13	UNTR	United Tractors Tbk	29	AUTO	Astra Otoparts Tbk
14	UNVR	Unilever Indonesia Tbk	30	ASII	Astra International Tbk
15	WTON	Wijaya Karya Beton Tbk	31	BMTR	Global Mediacom Tbk
16	LINK	Link Net Tbk	32	ELSA	Elnusa Tbk

Source: *IDX Indonesia 2018*.

To test used analysis, the authors performed a correlational test to determine whether there are influences and extent of their influence on structure of capital return on return on equity.

To see how far the Traffic models in explaining variations in the dependent variable. The correlation coefficient is between zero and one. The R^2 means the variables are dependent and explained very limited. A value that is close to independent variables is needed to predict the dependent variables. In general, the cross section is relatively low, while for the data period (Time Series) and time section, usually has a high coefficient determination.

Hypothesis is a temporary solution to the research problem; therefore the formulation of research problems is usually arranged in the form of a question sentence. Testing hypotheses to be done with the author with the following:

- Ho1: $\rho = 0$ Capital structure does not affect Return on Equity;
 Ha1: $\rho \neq 0$ Capital structure affects Return on Equity.

The trust level used in this study was 95% with a 5% significance level ($\alpha = 0.05$). It is often used in social science which shows the real two variables correlation.

RESULTS AND DISCUSSION

Based on the recapitulation of data collected by researchers on the variables of capital structure and return on equity in 2016 and 2017, then the processing is carried out using the SPSS Version 25 program, the results of which are described in table 2 as follows:

Table 2 – Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,425 ^a	,181	,168	,2405856	,181	13,678	1	62	,000

a. Predictors: (Constant), Capital Structure

The effect of capital structure on Return on Equity is 0.181 or 18.1% is significant where F is calculated $< F_{table}$ is $0.00 < 0.05$ while the influence of other factors on ROE is 0.819 or with an epsilon coefficient of 0.905. The influence of other factors that affect ROE outside the capital structure is very large; it is possible to influence the management competencies for managing assets.

Then the regression equation from the results of processing the data can be described in table 3 as follows:

Table 3 – Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			
	B	Std. Error	Beta			Zero-order	Partial	Part	
1	(Constant)	,066	,048		1,379	,173			
	CS	,156	,042	,425	3,698	,000	,425	,425	,425

a. Dependent Variable: Return On Equity

Table 4 – ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	,792	1	,792	13,678	,000 ^b
	Residual	3,589	62	,058		
	Total	4,380	63			

a. Dependent Variable: Return On Equity
b. Predictors: (Constant), Capital Structure

Based on table 3 above, the regression equation that can be made is $Y = 0.066 + 0.156X$ and based on Table 4 the regression equation shows significant meaning that the equation is feasible to use. The regression equation shows a positive slope of the mean shows if there is an increase in the capital structure then has an impact on the Return on Equity but this positive effect shows that the use of debt is actually used effectively. This is in accordance with the results of the study Khalid Ashraf CHISTI, Khursheed ALI, Mouh-i-Din SANGMI (2013) Elisabeth Mueller (2002, Abeywardhana, DKY (2015), Abor, Joshua (2005). But it is different from the results of research conducted by Anas Ali Al-Qudah. (2017), Mahfuzah Salim (2012), Mohamed Khalifa M. Tailab (2014), T. Velnampy. & J. Aloy Nires (2012), that structure capital has a negative relationship with profitability with the ROE indicator.

CONCLUSION

Based on the results of the 2016 and 2017 financial statement data processing on JII70 companies with a sample of 32 issuers, capital structure has a positive effect on return on equity, meaning that if the capital structure increases, the return on equity will increase, but this capital structure increase there is a limit because the increase in capital structure is due to an increase in debt. Therefore companies must be able to determine the optimal limit of capital structure; this is illustrated by Gapenski, Louis C, (2005: 395).

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ANALYSIS OF RICE DISTRIBUTION CHANNEL IN NGAWI REGENCY, EAST JAVA PROVINCE OF INDONESIA

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ABSTRACT

Food production is an important factor in food security. Government efforts to achieve rice self-sufficiency continue to be carried out so that community needs can be fulfilled without having to import. Strengthening the distribution channel for rice production can be a solution to food security. This research aims to analyze the rice distribution channel efficiency in Ngawi Regency, East Java. In determining the rice distribution channel efficiency, marketing margins, share of margins, share of costs, and share of profits were analyzed. The research results show that there are nine channels in Ngawi Regency in which six channels of channels I, II, V, VI, VIII, and IX are efficient, while channels II, IV and VII are not yet efficient. It implies the need for policies that can provide reasonable profits for each party to support more efficient rice distribution channels.

KEY WORDS

Margins, share, costs, profits, efficiency, channels.

The availability of food in sufficient quantity at affordable prices is one of the main objectives of national agricultural development (Yosefanny et al. 2017), especially rice availability. Rice is the main staple food for Indonesian people. The increased population of Indonesia from year to year results in insufficient rice supply. Sugianto (2006) states that rice consumption in Indonesia is higher than rice production. It influences social and economic stability. An increased rice production program can act as a solution to deal with these problems. In addition, the distribution aspect and affordable prices are components need to be considered to facilitate people's access to food. To improve public accessibility to rice, it is necessary to apply the supply chain management concept to meet people's needs for rice supply in an effective and efficient manner.

The weak economic competitiveness of rice in Indonesia is caused by weak economic institutions, especially supply chain. Supply chain was first introduced in the early 1980s (Nee, 2008). Regional institutional system is still shackled by centralized development policy, causing undeveloped people's creativity and weak social capital. Therefore, reforms within the regional autonomy framework should provide opportunities and trust to regional institutions to improve resource management efficiency. Agricultural supply chain in Indonesia involves many actors, from farmers to consumers. However, due to the lack of a direct collective system of small farmers, many actors and transactions must be passed first. This eventually resulted in high prices of agricultural products. The above problems arise because of the lack of coordination in product collection between producers and market players. High logistics costs are a challenge in the supply chain process. It is due to the long chain process from small farmers to market players. At present, many retailers become the power holder in the supply chain. Thus, it needs cooperation from various parties to overcome the high logistics costs in Indonesia, both from the government and business actors. According to Sharma et al. (2014), overcoming supply chain inefficiency can be conducted by redesigning procurement, distribution, intermediary's collaboration, and logistics system.

Many researchers have conducted research on rice supply chains in Indonesia. Garside and Asjari (2015) found that, in general, the rice supply chain network in Indonesia starts from farmers as rice cultivators who sell dry unhusked rice to middlemen. Then, middlemen sell dry unhusked rice to the rice milling unit to be dried and grounded into rice.

Finally, rice is sold back to consumers. The research results of (South, Sumarauw, and Karuntu 2017) showed that the rice farmers get relatively small profits from the rice supply chain. It is due to different time and costs in rice cultivation activities. The longer the time the farmers take, the higher the costs incurred. Meanwhile, traders only need around one week to sell rice to retailers or consumers. However, some of the literature describes descriptively. This research attempts to analyze the rice distribution efficiency by using several analytical tools including marketing margins, share of costs, share of margins, and share of profits. Data from the analysis results will show the efficiency level in each rice marketing channel.

LITERATURE REVIEW

Supply chain management is a unified marketing system that includes integration between actors so as to provide satisfaction to customers. The implementation of supply chain management includes the introduction of supply chain members and with whom he relates, what processes are carried out on each relationship between the actors of the supply chain. The aim is to win competition and profits for the company and all members, including the final consumer. The supply chain system is a dynamic and complex system (Eldabi & Keramati, 2011).

The marketing system is an important part of the chain of goods from production to consumers. The marketing system also determines the market efficiency of an item trading system, including food. In this agribusiness system, post-harvest rice is one of the subsystems covering activities ranging from harvest to producing rice and by products. Poor handling of post-harvest rice will result in the minimum yield of rice produced, this will have an impact not only on farmers, but also all institutions related to rice. Supply chain is a sequence of scenes (activities and actors) from upstream sourcing and downstream and vice versa. In the supply chain there are three streams that must be managed, namely the flow of products, the flow of money and information. Supply chain management involves various parties from inside and outside the company.

METHODS OF RESEARCH

This research was conducted in Ngawi Regency using purposive sampling (intentionally) with the consideration that Ngawi Regency was one of the regencies achieving the national-level rice production improvement award in 2018. In addition, according to (Mardianto, Supriyatna, and Agustin 2016), the rice supply chain in Ngawi Regency is relatively diverse compared to other regencies in East Java. It might be caused by the fact that Ngawi Regency is directly adjacent to Central Java, causing a wider rice marketing.

Purposive sampling was used to determine the respondents in this research. Farmers and unhusked rice/rice marketing agencies in Ngawi Regency became the respondents. Thus, the respondents were farmers, middlemen/collectors, wholesalers, retailers, and consumers. Farmers included the landowners and the rice farmers of 40 respondents. Collectors/middlemen comprised 3 respondents each. Wholesalers comprised 2 respondents and consumers comprised 15 respondents.

There were two types of data used in this research. The first type was Primary data obtained based on field survey results at farmer groups, farmers, traders, and consumers using a questionnaire. The second type was Secondary data obtained from related agencies or institutions. Secondary data were obtained from several related agencies such as:

- Department of Trade at the Regency level to obtain data on price at the consumer level and traders/wholesalers/distributors engaged in the unhusked rice/rice commodity;
- BULOG (The Indonesia Logistics Bureau) office of the sub regional division to obtain Government Purchasing Price, merchant partners, and rice policies;
- Department of Agriculture to obtain data on prices at the producer level and data of farmers/farmer groups.

In determining the rice distribution channel efficiency in Ngawi Regency, several analytical tools including marketing margins, share of costs, share of margins, and share of profits were used. The data results show the efficiency level in each rice marketing channel.

To determine the marketing margins, distribution, shares, and profits of the involved marketing agencies to the total margin of various marketing channels, the marketing margin analysis was used (Masyrofie 1994). The marketing efficiency theory used as a reference is the theory proposed by (Tomek Wg and Robinson Kl. 1990) which defines marketing margin as the difference between the price paid by consumers and that obtained by producers. Marketing margin can be calculated using the following formula:

$$MP = P_r - P_f \quad (1)$$

For one trader level, marketing margin can be calculated using the following formula:

$$MP = KP + BP \quad (2)$$

Where: MP = Marketing Margin; P_r = Price at the consumer level taken from the average price; P_f = Price at the producer level taken from the average selling price; KP = Marketing Profits; BP = Marketing Costs; $KP = MP - BP$; $BP = MP - KP$.

Share of margins can be calculated using the following formula:

$$S_m = \frac{M_i}{M_{total}} \times 100\% \quad (3)$$

Where: M_i = Margin in the i^{th} agency; M_{total} = Total margin in all marketing agencies.

Share of prices received by farmers can be calculated using the following formula:

$$S_f = \frac{P_f}{P_r} \times 100\% \quad (4)$$

Where: S_f = Share of prices received by farmers; P_f = Price at the farmer level; P_r = Price at the retailer level; Indicators of marketing efficiency can be measured by the following criteria:

- If share of prices is higher than share of marketing margins, the marketing channel is categorized as efficient;
- If share of prices is smaller than share of marketing margins, the marketing channel is categorized as inefficient.

Share of costs of the i^{th} marketing agency can be calculated with:

$$S_{bi} = \frac{B_i}{B_{total}} \times 100\% \quad (5)$$

Where: S_{bi} = Share of costs of the i^{th} marketing agency; B_i = Cost type; B_{total} = Total costs of all marketing agencies.

Share of profits of the i^{th} marketing agency can be calculated with:

$$S_{ki} = \frac{K_i}{K_{total}} \times 100\% \quad (6)$$

Where: S_{ki} = Share of profits of the i^{th} marketing agency; K_i = Profits of the i^{th} marketing agency; K_{total} = Total profits.

The π/C Ratio analysis was used to identify the real distribution of profits accepted by each agency. The π/C Ratio for producers can be calculated using the following formula:

$$\pi/C \text{ Ratio}_{\text{producer}} = \frac{\text{Selling Price}}{\text{Total Costs}} \quad (7)$$

Where: Selling Price = Product selling price by producers to traders; Total costs = Total production costs by producers.

The π/C Ratio for traders can be calculated using the following formula:

$$\pi/C \text{ Ratio}_{\text{trader}} = \frac{\pi (i)}{\text{Total Costs } (i)} \quad (8)$$

Where: $\pi (i)$ = Profits received by the i^{th} trader; Total costs (i) = Total marketing costs by the i^{th} trader.

If the comparison between share of profits and marketing costs of each marketing agency involved in the marketing process is equitable and quite logical, the marketing system is considered efficient.

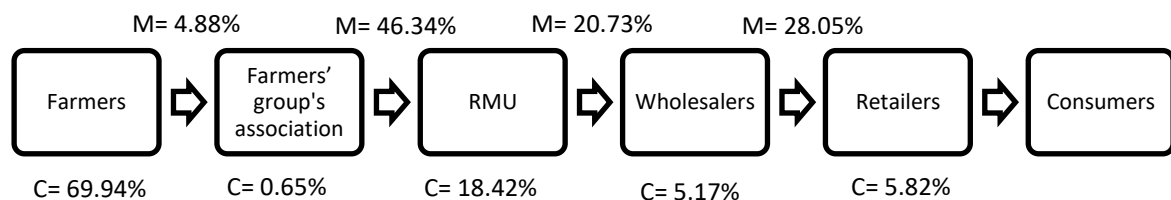
RESULTS AND DISCUSSION

The marketing margin analysis was used in determining the efficiency level of distribution channels to obtain share of profits and share of costs in each agency involved. By knowing the distribution of each agency's shares, we can determine the efficiency level of the existing distribution channels. Different distribution channels result in the different total margin at each distribution channel. Additionally, supply chain effectiveness can be analyzed through the results of the π/C Ratio which present profits for each cost incurred. The π/C Ratio analysis was used to identify the real distribution of profits acceptance by each agency. If the results of the π/C Ratio show a real distribution, the channel is considered efficient. Margin calculation is obtained from the difference between the selling price of P1 and producers, and so on. From the research results on rice distribution channels in Ngawi Regency, nine channels are obtained.

In Channel I of the unhusked rice distribution, the highest share of prices is in producers/farmers of 69.9%. It is because the farmers incur the highest farming costs to produce unhusked rice/rice compared to P1 (farmers' group's association), P2 (RMU), P3 (wholesalers), and P4 (retailers). Share of costs incurred by producers/farmers is 69.94%. When compared between P1, P2, P3, and P4, the highest share of prices and share of margins are in P2 (RMU). Share of margins and share of costs in P2 are 20.7% and 18.4%, respectively. The high share of margins and share of costs is in P2 because P2 (RMU) incurs the highest costs in processing unhusked rice into rice compared to traders who only sell without processing. Based on share of prices and share of costs, Channel I is considered efficient.

Table 1 – Calculation of Shares of Unhusked Rice/Rice in Channel I

Subject	Price	Margin	Cost	Profit	Share				π/C Ratio
					Price (%)	Margin (%)	Cost (%)	Profit (%)	
Producer	4,600	400	2,164	2,436	35.9	4.9	69.9	6.3	2.1
P1	5,000	3,800	20	4,980	3.1	46.3	0.6	12.9	249.0
P2	8,800	1,700	570	8,230	29.7	20.7	18.4	26.8	14.4
P3	10,500	2,300	160	10,340	13.3	28.0	5.2	32.7	64.6
P4	12,800	-	180	12,620	18.0	-	5.8	-	70.1



Where: C = Share of costs; M = Share of margins.

Figure 1 – Share of Margins and Share of Costs of Unhusked Rice in Channel I

Even though the highest share of prices, share of margins, and share of costs are in P1 and P2, the highest share of profits is in P3 (wholesalers) of 32.7%. It is because wholesalers have a small cost and sell rice in large quantities. Furthermore, the highest π/C

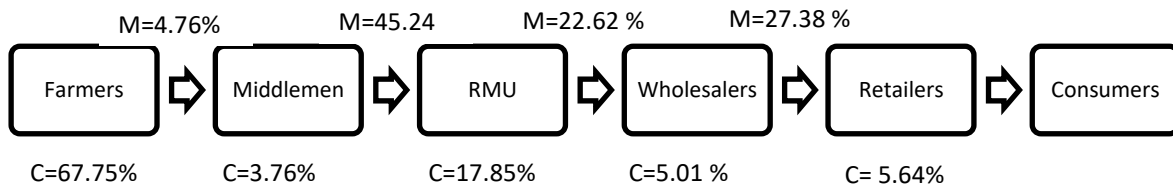
Ratio is in P1/Farmers' group's association because P1 incurs the least share of costs. The π/C Ratio of P1 is 249, meaning every IDR 1,- incurred by P1 will gain a profit of 249.

Figure 1 shows the rice distribution channel in the distribution channel I. Channel I starts from P (Farmers) - P1 (farmers' group's association) - P2 (RMU) - P3 (wholesalers) - P4 (retailers) – Consumers. Farmers as producers sell unhusked rice to farmers' group's association, then farmers' group's association sell unhusked rice to RMU. RMU processes unhusked rice into rice to be sold to wholesalers. Wholesalers sell rice in the form of large packages to retailers. Finally, retailers sell retail rice at a more expensive price.

In Channel I of the unhusked rice distribution, the highest share of prices is in producers/farmers of 69.9%. It is because the farmers incur the highest farming costs to produce unhusked rice/rice compared to P1 (farmers' group's association), P2 (RMU), P3 (wholesalers), and P4 (retailers). Share of costs incurred by producers/farmers is 69.94%. When compared between P1, P2, P3, and P4, the highest share of prices and share of margins are in P2 (RMU). Share of margins and share of costs in P2 are 20.7% and 18.4%, respectively. The high share of margins and share of costs is in P2 because P2 (RMU) incurs the highest costs in processing unhusked rice into rice compared to traders who only sell without processing. Based on share of prices and share of costs, Channel I is considered efficient.

Table 2 – Calculation of Shares of Unhusked Rice/Rice in Channel II

Subject	Price	Margin	Cost	Profit	Share				π/C Ratio
					Price (%)	Margin (%)	Cost (%)	Profit (%)	
Producer	4,400		2,164	2,236	34.4		67.7	5.9	2.0
P1	4,800	400	120	4,680	3.1	4.8	3.8	12.3	39.0
P2	8,600	3,800	570	8,030	29.7	45.2	17.8	21.2	14.1
P3	10,500	1,900	160	10,340	14.8	22.6	5.0	27.3	64.6
P4	12,800	2,300	180	12,620	18.0	27.4	5.6	33.3	70.1



Where: C = Share of costs; M = Share of margins.

Figure 2 – Share of Margins and Share of Costs of Unhusked Rice in Channel II

Table 3 – Calculation of Shares of Unhusked Rice/Rice in Channel III

Subject	Price	Margin	Cost	Profit	Share				π/C Ratio
					Price (%)	Margin (%)	Cost (%)	Profit (%)	
Producer	4,600		2,164	2,436	35.9		67.7	6.6	2.1
P1	4,800	200	120	4,680	1.6	2.4	3.8	12.6	39.0
P2	7,500	2,700	570	6,930	21.1	32.9	17.8	18.7	12.2
P3	10,500	3,000	160	10,340	23.4	36.6	5.0	27.9	64.6
P4	12,800	2,300	180	12,620	18.0	28.0	5.6	34.1	70.1



Where: C = Share of costs; M = Share of margins.

Figure 3 – Share of Margins and Share of Costs of Unhusked Rice in Channel III

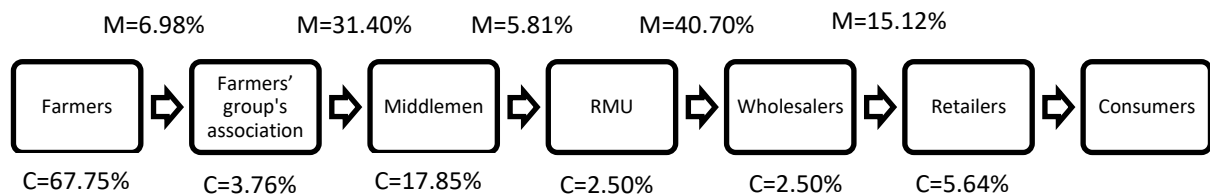
Even though the highest share of prices, share of margins, and share of costs are in P1 and P2, the highest share of profits is in P3 (wholesalers) of 32.7%. It is because wholesalers have a small cost and sell rice in large quantities. Furthermore, the highest π/C Ratio is in P1/Farmers' group's association because P1 incurs the least share of costs. The π/C Ratio of P1 is 249, meaning every IDR 1,- incurred by P1 will gain a profit of 249.

Even though the highest share of prices, share of margins, and share of costs are in P3, the highest share of profits is in P4 (Retailers) of 34.1%. P4 gains the highest profits because retailers have a small cost, the possibility to sell rice with a long shelf-life, and smaller rice packages sold compared to wholesalers. Furthermore, the highest π/C ratio is in P4 (retailer) of 70.1, meaning every IDR 1,- incurred by P4 will gain a profit of 70.1.

In Channel IV of the unhusked rice/rice distribution, the highest share of prices is in producers/farmers of 32.8%. It is because farmers incur the highest farming costs to produce unhusked rice/rice compared to P1 (farmers' group's association), P2 (middlemen), P3 (RMU), P4 (wholesalers), and P5 (retailers). Share of costs incurred by producers/farmers is 67.7%. When compared between P1, P2, P3, and P4, the highest share of prices and share of margins are in P2 (wholesalers) of 40.7% with a very low cost of 2.5%, causing wholesalers to gain the highest profits. It indicates the uneven distribution of share of margins and share of costs, resulting in inefficient rice distribution channels in channel I.

Table 4 – Calculation of Shares of Unhusked Rice/Rice in Channel IV

Subject	Price	Margin	Cost	Profit	Share				π/C Ratio
					Price (%)	Margin (%)	Cost (%)	Profit (%)	
Producer	4,200		2,164	2,036	32.8		67.7	4.5	1.9
P1	4,800	600	120	4,680	4.7	7.0	3.8	10.3	39.0
P2	7,500	2,700	570	6,930	21.1	31.4	17.8	15.2	12.2
P3	8,000	500	80	7,920	3.9	5.8	2.5	17.4	99.0
P4	11,500	3,500	80	11,420	27.3	40.7	2.5	25.0	142.8
P5	12,800	1,300	180	12,620	10.2	15.1	5.6	27.7	70.1

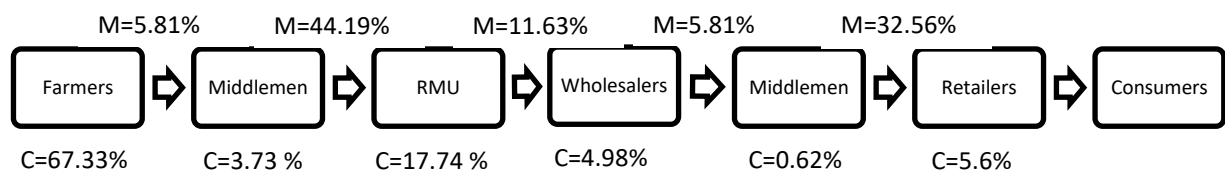


Where: C = Share of costs; M = Share of margins.

Figure 4 – Share of Margins and Share of Costs of Unhusked Rice in Channel IV

Table 5 – Calculation of Shares of Unhusked Rice/Rice in Channel V

Subject	Price	Margin	Cost	Profit	Share				π/C Ratio
					Price (%)	Margin (%)	Cost (%)	Profit (%)	
Producer	4,200		2,164	2,036	32.8		67.3	4.4	1.9
P1	4,700	500	120	4,580	3.9	5.8	3.7	9.9	38.2
P2	8,500	3,800	570	7,930	29.7	44.2	17.7	17.1	13.9
P3	9,500	1,000	160	9,340	7.8	11.6	5.0	20.1	58.4
P4	10,000	500	20	9,980	3.9	5.8	0.6	21.5	499.0
P5	12,800	2,800	180	12,620	21.9	32.6	5.6	27.1	70.1



Where: C = Share of costs; M = Share of margins.

Figure 5 – Share of Margins and Share of Costs of Unhusked Rice in Channel V

Furthermore, the highest π/C ratio is also in P4 because P4 incurs the least share of costs. The π/C Ratio of P4 is 142.8, meaning every IDR 1,- incurred by P4 will gain a profit of 142.8.

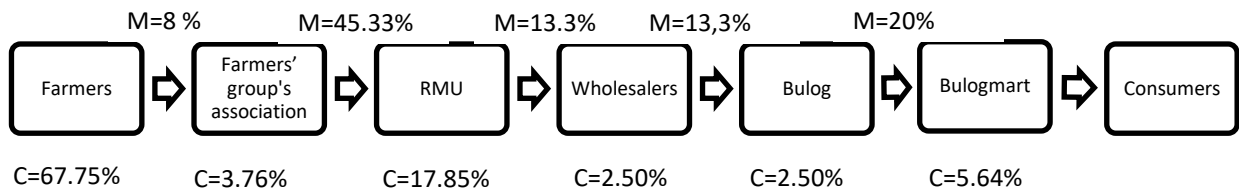
In Channel V of the unhusked rice/rice distribution, the highest share of prices is in producers/farmers of 32.8%. It is because the farmers incur the highest farming costs to produce unhusked rice/rice compared to P1 (middleman1), P2 (RMU), P3 (wholesalers), P4 (middleman2), and P5 (retailers). Share of costs incurred by producers/farmers is 67.3%. When compared between P1, P2, P3, P4, and P5, the highest share of prices and share of margins are in P2 (RMU). Share of margins and share of costs in P2 are 44% and 17.74%, respectively. The high share of margins and share of costs in P2 is due to P2 (RMU) incurs the highest costs in processing unhusked rice into rice compared to traders who only sell without processing. Based on share of prices and share of costs, Channel V is considered efficient.

Even though the highest share of prices and share of costs are in farmers and P2, the highest share of profits is in P5 (retailers) of 25.45%. P5 gains the highest profits because retailers have a small cost, the possibility to sell rice with a long shelf-life, and smaller rice packages sold compared to wholesalers. Furthermore, the highest π/C ratio is in P4 because P4 incurs the least share of costs. The π/C Ratio of P4 is 499, meaning every IDR 1,- incurred by P4 will gain a profit of 499.

In Channel VI of the unhusked rice/rice distribution, the highest share of prices is in producers/farmers of 34.8%. It is because farmers incur the highest farming costs to produce unhusked rice/rice compared to P1 (farmers' group's association), P2 (RMU), P3 (wholesalers), P4 (bulog), and P5 (bulogmart). Share of costs incurred by producers/farmers is 67.7%. When compared between P1, P2, P3, P4, and P5, the highest share of prices and share of margins are in P2 (RMU). Share of margins and share of costs in P2 are 45.3% and 17%, respectively. The high share of margins and share of costs in P2 is due to P2 (RMU) incurs the highest costs in processing unhusked rice into rice compared to traders who only sell without processing. Based on share of prices and share of costs, Channel VI is considered efficient.

Table 6 – Calculation of Shares of Unhusked Rice/Rice in Channel VI

Subject	Price	Margin	Cost	Profit	Share				π/C Ratio
					Price (%)	Margin (%)	Cost (%)	Profit (%)	
Producer	4,200		2,164	1,836	34.8		67.7	4.2	1.8
P1	4,800	600	120	4,480	5.2	8.0	3.8	10.2	37.3
P2	8,800	3,400	570	7,430	29.6	45.3	17.8	16.9	13.0
P3	10,500	1,000	80	8,920	8.7	13.3	2.5	20.3	111.5
P4	11,500	1,000	80	9,920	8.7	13.3	2.5	22.6	124.0
P5	-	1,500	180	11,320	13.0	20.0	5.6	25.8	-



Where: C = Share of costs; M = Share of margins.

Figure 6 – Share of Margins and Share of Costs of Unhusked Rice in Channel VI

Even though the highest share of prices and share of costs are in farmers and P2, the highest share of profits is in P5 (bulogmart) of 25.8%. P5 gains the highest profits because P5 (bulogmart) has a high margin with a small cost, the possibility to sell rice with a long shelf-life, and smaller rice packages sold compared to wholesalers. Furthermore, the highest π/C ratio is in P4 (bulog) because P4 incurs the least share of costs. The π/C Ratio of P4 is 124, meaning every IDR 1,- incurred by P4 will gain a profit of 124.

In Channel VII of the unhusked rice/rice distribution, the highest share of prices is in producers/farmers of 41.7%. It is because farmers incur the highest farming costs to produce unhusked rice/rice compared to P1 (farmers' group's association), P2 (wholesalers), and P3 (bulogmart). Share of costs incurred by producers/farmers is 69.7%. When compared between P1, P2, and P3, the highest share of prices is in P2 (wholesalers) with the least share of costs. Share of margins and share of costs in P2 are 44.8% and 5.2%, respectively. It indicates inefficient distribution channels in Channel VII.

The highest share of profits is in P3 (bulogmart) of 36.3%. P3 gains the highest profits because P3 (bulogmart) has a low share of prices, the possibility to sell rice with a long shelf-life, and smaller rice packages sold compared to wholesalers. Furthermore, the highest π/C ratio is in P2 of 62.9, meaning every IDR 1,- incurred by P4 will gain a profit of 62.9.

Table 7 – Calculation of Shares of Unhusked Rice/Rice in Channel VII

Subject	Price	Margin	Cost	Profit	Share				π/C Ratio
					Price (%)	Margin (%)	Cost (%)	Profit (%)	
Producer	2,164		2,164	2,636	41.7		69.7	8.5	2.2
P1	7,500	2,700	600	6,900	23.5	40.3	19.3	22.1	11.5
P2	10,500	3,000	160	10,340	26.1	44.8	5.2	33.1	64.6
P3	11,500	1,000	180	11,320	8.7	14.9	5.8	36.3	62.9



Figure 7 – Share of Margins and Share of Costs of Unhusked Rice in Channel VII

In Channel VIII of the unhusked rice/rice distribution, the highest share of prices is in P1 (farmers' group's association) of 41.16%, while the highest share of costs is in farmers. The highest share of margins is in P1 (farmers' group's association). P2 gains the highest share of profits because P2 has a low share of costs, the possibility to sell rice with a long shelf-life, and smaller rice packages sold compared to wholesalers. Furthermore, the highest π/C ratio is in P2 because P2 incurs the least share of costs. The π/C Ratio of P2 is 49.0%, meaning every IDR 1,- incurred by P4 will gain a profit of 49.0.

Table 8 – Calculation of Shares of Unhusked Rice/Rice in Channel VIII

Subject	Price	Margin	Cost	Profit	Share				π/C Ratio
					Price (%)	Margin (%)	Cost (%)	Profit (%)	
Producer	2,164		2,164	2,636	53.3		73.5	13.6	2.2
P1	8,500	3,700	600	88	41.1	88.1	20.4	40.8	13.2
P2	9,000	500	180	7,900	5.6	11.9	6.1	45.6	49.0

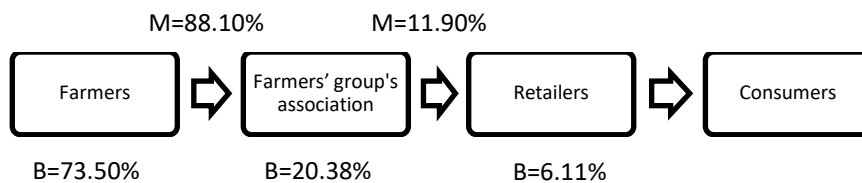


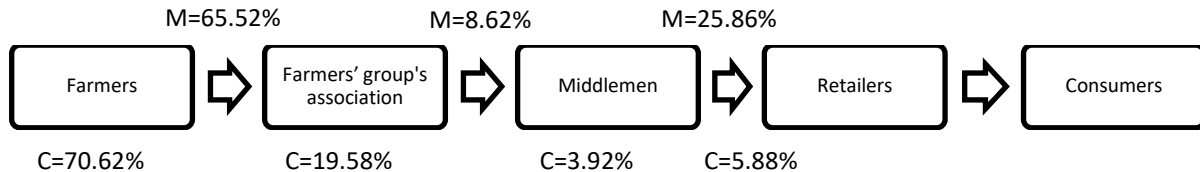
Figure 8 – Share of Margins and Share of Costs of Unhusked Rice in Channel VIII

In Channel IX of the unhusked rice/rice distribution, the highest share of prices is in producers/farmers of 44.8%. It is because farmers incur the highest farming costs to produce unhusked rice/rice compared to P1 (farmers' group's association), P2 (middlemen), and P3 (retailers). Share of costs incurred by producers/farmers is 70.6%. When compared between

P1, P2, and P3, the highest share of prices and share of margins are in P1 (farmers' group's association). Share of margins and share of costs in P1 are 65.5% and 19.6%, respectively. Thus, Channel IX is considered efficient.

Table 9 – Calculation of Shares of Unhusked Rice/Rice in Channel IX

Subject	Price	Margin	Cost	Profit	Share				π/C Ratio
					Price (%)	Margin (%)	Cost (%)	Profit (%)	
Producer	2,164		2,164	2,536	44.8		70.6	8.6	2.2
P1	8,500	3,800	600	2,440	36.2	65.5	19.6	26.7	13.2
P2	9,000	500	120	8,880	4.8	8.6	3.9	30.0	74.0
P3	10,500	1,500	180	10,320	14.3	25.9	5.9	34.8	64.6



Where: C = Share of costs; M = Share of margins.

Figure 9 – Share of Margins and Share of Costs of Unhusked Rice in Channel IX

Even though the highest share of prices and share of costs are in farmers and P1, the highest share of profits is in P3 (retailer) of 34.8%. P3 gains the highest profits because P3 (retailer) has a low share of costs, the possibility to sell rice with a long shelf-life, and smaller rice packages sold compared to wholesalers. Furthermore, the highest π/C ratio is in P2 of 74.0, meaning every IDR 1,- incurred by P2 will gain a profit of 74.0.

CONCLUSION

Based on the research results, it can be concluded that Ngawi Regency has nine rice distribution channels. Of the nine channels, six channels of channels I, II, V, VI, VIII, and IX are efficient, while channels III, IV and VII are not yet efficient. It is due to an uneven comparison between share of profits and marketing costs of each marketing agency involved in the marketing process. It implies the need for policies that can mediate the relationship between farmers, all marketing agencies, and consumers in an efficient supply chain and provide reasonable profits for each party.

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THE CROCHETING OF THE IMPLEMENTATION OF PANCASILA VALUES ON THE REGIONAL GOVERNMENT BUDGET

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ABSTRACT

This study examines how to crochet the implementation of Pancasila values on the regional government budget through a case study in Bantul Regency. The study focused on the implications of implementing Pancasila values which have been carried out at the Regional Government of Bantul as an effort to apply Pancasila in the government. Through the implementation of Pancasila values, it is hoped that Bantul Regency community will be safe, peaceful and prosperous. This study contributes knowledge about the impact of the implementation of Pancasila values in regional government and gives input to the government to apply Pancasila through the budget in accordance with the Minister of Internal Affairs speech, Tjahyo Kumolo (Kedaulatan Rakyat page 7, November 7, 2017) which invites regional government officials to implement Pancasila in their respective regions with regional income and expenditure budgets (APBD).

KEY WORDS

Crocheting, implementation, Pancasila values, regional government.

This article reports and analyzes the implementation of Pancasila values that have been carried out at the Regional Government of Bantul in an effort to apply the values of Pancasila through the budget, because Indonesia is an adequate country to fulfill the requirements of living and living in the world by standing on one's own feet. Without this hard struggle to cultivate Indonesia's earth, it is useless for God of One Almighty to provide all this. The Indonesian people do not depend on someone else's hand or dependence on other nations

The facts show that the Indonesian people are still lacking in development. This indicates that the Indonesian people failed to form a complete human being with the spirit of Pancasila, a philosophy of Pancasila, an ideology of Pancasila and a life view of Pancasila. The community should not be discouraged, because God of One Almighty still provides time to reconstruct the spirit of Pancasila.

The struggle is still long; the Indonesian people must not be complacent to keep the trust that has been given to the Indonesian people. Mistakes, mistakes and ugliness which have been facing the Indonesian nation so far, have to be eroded quickly to welcome tomorrow which is better and prosperous. To realize seriousness in welcoming this free tomorrow, everything is based on the foundation of Pancasila and the Constitution of 1945. This is a manifestation of the independence of the Indonesian nation without any influence from other countries.

This study uses a critical method approach, by criticizing the Regional Government of Bantul managers who have been known to the author, have not implemented Pancasila values. The study data is obtained through interviews with informants and observations as well as documents found in the field.

The most important thing for the Indonesian people is how to rearrange the values of Pancasila in daily life in accordance with the principles (understanding) which remain in the frame with diversity. The Indonesian people need a situation which they feel can alleviate life in the nation and state. Perseverance in living life is indeed expected from the partisanship of leaders in conducting government management in the management of society.

The role of a very large leader in the management of government is namely in an effort to make activities which is based on the values of Pancasila. In government, every leader at

any level, has inherent responsibility to develop capacity including serving the community and improving the welfare of the community in order to reconstruct people's trust in leaders with frames of diversity and in the grip of Pancasila.

The Implementation of Pancasila Values. Indonesian people love to theorize and speak, making Indonesia rich in brilliant theories and concepts including Pancasila, but very weak in consistent and effective implementation. Great leaders once discourse and do not balance the discourse with concrete action. Ordinary is only imagined so Pancasila values are only stored in the brain without taking action.

The implementation of the contents of the principles of Pancasila in daily life can be prepared and carried out by the community together with regional government as state administrators, state authorities in various fields of life, statehood and other fields. One source referred to is Al-Quran NurKharim and from human thought which a reference for the implementation of Pancasila is.

The First Principle - One Almighty God (QS: Al Ikhlas-1):

Say: He is God of One Almighty.

The main backrest of living people is God of One Almighty. God of One Almighty is omniscient what people do. What people talk about and do in this world, God of One Almighty hears and knows. Likewise without exception when people still live in the world whatever is done needs to be accounted for. The meaning of God of One Almighty, morphologically, contains abstract meanings or things (Ramlan, 1983: 245), namely conformity with the nature of values originating from God of One Almighty and realization in the form of religious values (which come from One Almighty God).

Every Indonesian citizen must believe and believe in God of One Almighty, because Indonesian people realize that God of One Almighty which is a source of life, morality and ethics is very important in all human behavior in Indonesia. For devoted Indonesian people, the main backing in life is God of One Almighty, not other objects or other creatures.

Humans as creatures created by God of One Almighty must worship God of One Almighty creator and respect each other with human beings and the natural environment. The concept aims to create a harmonious relationship between the Creator and people. They are humans and fellow people. Between people and the environment must also respect each other, even with supernatural beings also respect each other. If people do well to their fellow human beings, people will live in peace as well as must be towards the natural environment.

As an Indonesian nation that has different religions and beliefs, even though there are different religions and beliefs, they still work together to help each other and help without seeing any differences between them. Religion is a source of unification in carrying out national development. One cannot force others to embrace religion according to or force someone to move from one religion to another.

From the values contained in God of One Almighty principle, it can be stated that this principle is the basis of spirituality, a moral basis for the Indonesian people in carrying out the life of the state and community (Kaelan, 2009: 150). The value contained in this first principle, can be implemented in regional government in the life of the state which is based on God of One Almighty which means that in making the budget as the implementation of state life, it must pay attention and respect the instructions or laws.

The implementation of this first principle according to the Vice-Regent of Bantul Regency from the results of my interview as an author is:

"Carrying out religious guidance in the community, fostering the implementation of Islamic teachings, facilitating the departure of Bantul Regency pilgrimage, coordinating professional alms for the State Civil Apparatus conducting stimulants for mosque activities and other religions whose outcome is intended to improve faith and belief for God of One Almighty including other religions".

Thus, all religions recognized in the Unitary State of the Republic of Indonesia (NKRI) which reside in Bantul Regency are guaranteed to be able to move and develop well in accordance with the rules of each religion without leaving the rules has been made and agreed upon together with mutual respect and full of tolerance, because freedom of religion is one of the most basic rights, among human rights. The right to religious freedom comes

from God of One Almighty, not human, state or not giving groups so people are mutually tolerant.

The Second Principle - Just and Civilized Humanity (QS: An Nisa'-135):

So do not follow lust, let you be a justice man.

The justice will be achieved if people understand each other. In this world, there are no smart people and not smart, there are people who understand and do not understand. Human nature as a creature created by God of One Almighty in this world is not useless, but has benefits and has a noble duty as a caliph who upholds justice, not siding with individuals, groups or parties. Indonesian people are obliged and entitled to live freely or permanently (Dipoyudo, 1984: 9).

Humanity in this second principle implies the suitability of the traits and the state of the state with human nature (abstraction). The characteristics and circumstances include the main things of state including the nature of the state, state power, state goals, the system of state administration, matters relating to all aspects of state administration (Notonagoro, 1975: 87). This can be understood, because the essence of the principal supporters of the state is human. Thus, the state in essence is a humanitarian institution that has the duty to act fairly.

In Pancasila values are contained that the state must uphold human dignity and values as civilized beings. Human values which are justice and civilized contain the meaning that human nature as a cultured and civilized creature must be justly based. This contains an understanding that human nature must be fair in relations with oneself, fair to other human beings, fair to society, fair to the environment and fair to God of One Almighty.

The consequence of value which is contained in a justice and civilized humanity is to uphold the dignity and human dignity as God of One Almighty creature, uphold human rights, respect for equal rights and degrees, regardless of ethnicity, race, lineage, status social or religious. In addition, there is also an attitude of mutual love for fellow human beings tolerance, not arbitrary toward fellow human beings, upholding human values (Darmodiharjo, 1996).

The government as the State organizer must describe, carry out and implement these values in filling out national development, especially the moral development of state administrators. The values contained in this second principle for regional government, are carried out in the context of budgeting, that is, they must act fairly in a proportional manner in all fields. The budget must touch the community, fairly and civilized, given the relationship that must be considered between people, the environment and the existence of God of One Almighty which gives life to people on this planet earth.

The implementation of the second principle in Bantul Regency is according to the Vice-Regent of Bantul Regency through the results of my interview as an author is:

"Bantul Regency has a regional poverty reduction team, the Coordination Team of Regional Poverty Reduction (TKPKD) with its chairman, Vice-Regent, how regional budget and expenditure can lead to humanitarian interests among them are poverty, helplessness, concrete form: have development assistance uninhabitable homes for the poor, then we have scholarships for the poor, besides programs from the center, such as "community health insurance", the area also has to supplement the program with the name "regional health insurance", other social guarantees, such as assistance for people with disabilities in the form of wheelchairs and medicines, the provision of budgeting for flooring programs for poor people who have houses without floors, those who do not have electricity who do not have baths, there are bathing places as outcome to save basic needs that are very human so that society poor intellect can receive adequate attention".

The People in Bantul Regency do not live alone, but live in a society which requires socialization between people which is in the area, even outside the region with the attention of Bantul Regency government to be inseparable from the environment. In society, people individually, should not be arbitrary and act unfairly, because the essence of human beings born on earth is the same. In terms of justice, regional government will guarantee as a form of carrying out the mandate of the community.

The Third Principle - Indonesian Unity (QS: Al Hujarat-13):

And we make you some tribes so that you know each other.

During the struggle for Indonesian independence, the notion of Indonesian unity is a key factor, namely as a source of enthusiasm, motivation and drive for Indonesia's struggle. It can be considered in the expression "Anything as heavy as, if we lift together, it will become light, any heavy problem, and if we are a joint solution / unity will become liquid" Unity, morphologically, means a result of actions. So, it is a noun. In terms of dynamics, the notion of unity is a dynamic process. In 'Indonesia' is a quantity. This means, unity for the region, nation and state of Indonesia (Kaelan, 2009: 179).

The third principle contains the value that the state is the incarnation of the nature of human mono-dualists, namely as individual beings and social beings. Indonesian people have never lived alone, but always lived in unity with other people. The value contained in this third principle is that people in living in a society must develop an attitude of cooperation for unity in a shared life to realize a common goal.

Indonesian people understand and uphold every outcome of deliberation decisions, therefore all parties concerned must accept and implement with good intentions, sincerity and full of responsibility. This shows that the Indonesian people uphold common interests, not personal, group or group interests. The meaning of Indonesian unity is that the nature and state of Indonesia must be in accordance with the nature of one¹. The State of Indonesia is a personal self which has its own characteristics, characteristics and character which means having a unity and not being divided.

The values contained in this third principle, by regional government, are implemented when preparing a budget which is a consideration, by making and considering, the attitude of cooperation and harmony, not for individuals or groups that can divide. The budget is not for certain elites, but is made for the welfare of society.

The implementation of the third principle in Bantul Regency is according to the Vice-Regent of Bantul Regency through the results of my interview as author is:

"We have budgetary activities available for the building of harmony in religious life, there is a FKUB (Religious Harmony Forum) given stimulants for conducting meetings, outbound discussions among religious followers, there is also a budget for handling social conflicts whose outcomes are how We can realize this community unity, this is justice an example, because there are too many, I justice want to state that the regional income and expenditure budget in Bantul Regency, if it is drawn to the principle of Pancasila is there ".

On the basis of nationalism which means that the entire Indonesian nation including Bantul Regency must foster close unity between fellow citizens, regardless of ethnicity, class, religion with a united determination and a common ideal. Unity has the meaning of being united in various kinds of patterns which are diverse into one determination. In other words, the unity in Bantul Regency is something diverse, after being united into something that is harmonious intact and not contradictory and messy, between each other.

The Fourth Principle - Citizenship led by Wisdom in Deliberations / Representatives (QS: Ash Syuro-38):

While their affairs (decided) with deliberations between them.

The nature and nature of the state relating to the basis of State politics, enables the realization of a democratic basis for the country of Indonesia. Based on popular principles led by wisdom in deliberations / representatives, the Unitary State of the Republic of Indonesia became a mono-dualist democracy. In a democracy, don't be human beings to always win in every debate, because it cools the brain, more than winning the debate.

This fourth principle contains the value that people are not greedy, prioritize wisdom and prioritize deliberation in making decisions. The leader who is given the trust is a leader who can outline the values of the fourth principle in Pancasila. The value of democracy which must absolutely be carried out in the life of the state and society is a democracy that is not only based on individual freedom, but also based on conscience.

The main essence of this fourth principle which is populist means that the suitability of the nature of the state and nature of the state with the nature of the people cannot be separated from human nature, namely the human basis contained in the second principle of

¹The essence of one means that the absolute cannot be divided.

Pancasila (Kaelan, 2009: 210). In terms of nature and nature, human nature is the basis, because the essence of the principal supporters of the state is human.

Indonesia people understand and uphold every outcome of deliberation decisions. For this reason, all parties involved must accept and implement with good intentions and full responsibility. This means that shared interests are prioritized over personal or group interests. Talks to determine decisions in deliberation, based on common sense and in accordance with a noble conscience.

The values contained in the fourth principle in regional government must be implemented by a leader in the district as the trusted to carry out the mandate. Budget planning and implementation must pay attention to the needs and interests of the public in general. Likewise, people's representatives who sit in the House of Representatives (DPR) in considering the budget, they must also prioritize the people, not prioritize groups or individuals and groups and political parties.

Thus, the regional government in preparing the budget is based on the attitude of democratic deliberation, namely the attitude to base on majority with the principle of major-democracy with a system of expansion of public participation. This principle indicates that deliberation is needed in preparing the government budget.

The implementation of the fourth principle in Bantul Regency is according to the Vice-Regent of Bantul Regency through the results of my interview as author is:

"In budgeting forums, starting from village level budgeting we emphasize discussion and we provide assistance and provide guidance, how to develop development plans at the village level through deliberations so there are instructions for implementing deliberations so that development in the village really based on the aspirations of the people, such as in the Indonesian Youth National Committee (KNPI), youth organization and institutions that have the potential to be invited to develop the community".

The basis of consensus or democracy shows that the Unitary State of the Republic of Indonesia adheres to the notion of democracy. Understanding democracy means that the highest authority (sovereignty) to regulate the state and the people lies in the hands of all the people, not least in Bantul Regency, also doing the basis of consensus agreement.

This consensus meeting is sought in making all decisions, by means of deliberation to reach consensus, among all parties. If this cannot be achieved immediately, then the meeting leader can work with efforts so that the meeting can successfully reach consensus.

The Fifth Principle - The Social Justice for the Entire Indonesian People (QS: An Nahl-90):

Really God of One Almighty tells (you) to be fair and do well.

The justice in nature cannot be understood, if only based on an understanding that is very narrow. To be more profound, it is necessary to do a real action as an effort to provide justice which is based on the character of the Indonesian people. Dividing evenly is easier, but dividing the fair is more difficult, especially the inner birth justice.

The essence contained in this fifth principle, namely justice which means it contains the meaning of conformity and nature with fair nature. The consequences in every aspect of State administration must always be based on the values of justice (Kaelan, 2009: 228). In realization in living together (community), nation and State, there are three kinds of justice relations; it is mentioned as the relationship of triangular justice, namely distributive justice, obedience justice and commutative justice.

By referring to triangular justice, every aspect of the administration of the State in the realization of justice will always materialize these three aspects of justice, the realization of which is a relationship of justice, between state and citizens (distributive justice), between citizens and states (obedience justice) and between fellow citizens (commutative justice) (Notonagoro, 1975: 141-142)

The values which are contained in this fifth principle, explain that Indonesian human beings from birth developed as individuals who have personality as well as being social human beings who seek the welfare of society, the nation and humanity. Not people who can freely and arbitrarily treat other people, because of interests. Not prosperous and fair for some groups or groups. Such a thing is not a mirror of the fifth principle of Pancasila.

The justice that must be realized in value in this fifth principle is justice in shared life (social life). This justice is based and inspired by the nature of humanitarian justice, namely justice in the relationship between man and himself, people and other people, people and society, nation and state and human relations with God of One Almighty (Kaelan, 2014: 77). The value of justice must be a basis which must be realized in living together with the state to realize the goals of the country, namely the welfare of all citizens and protect all citizens and regions and educate all citizens.

The values contained in the fifth principle for regional government in preparing programs and budgets, are applied in a truly fair manner, namely fair distributive, fair compliance and commutative fair for all Indonesian people. For this reason, fairness must be developed towards others, maintaining continuity between rights and obligations and respecting the rights of others. Prioritizing shared interests without abandoning individual interests is a characteristic of the Indonesian nation's personality.

The implementation of the second principle in Bantul Regency is according to the Vice-Regent of Bantul Regency through the results of my interview as author is:

"This social justice also complements the second principle, talking about social justice in the regional income and expenditure budget which translates into the rights of all the people of Bantul Regency, from the right to basic services in the form of health, education then a decent life, if poor really has to be guaranteed, starting from housing insurance, health insurance through "regional health insurance" and education given a scholarship or being released, then other public services, then addressed and improved so that more justice is achieved well".

In a speech on June 1, 1945, President Sukarno stressed that the principle of welfare is the principle of no poverty in the realm of an independent Indonesia. At Bantul Regency, this welfare principle is also a concern. Social justice is the nature of a justice and prosperous society, happiness for everyone, no occupation, no humiliation, all happy, enough clothes, food and housing.

The Crocheting of the Implementation of Pancasila Values. For 19 years after the reformation, the implementation of Pancasila values felt increasingly fading. In fact, the hum of Pancasila also began to be heard. Therefore, it is necessary to strive to remember and apply again in earnest. As citizens of Indonesia, let's together, begin to reinvest the spirit of the soul and the implementation of the values of Pancasila in the life of the nation and state.

Most people may consider that Pancasila is only a point of thought, from the Indonesian founding fathers. The thing that is often overlooked is that Pancasila is a collective experience in Indonesian society for hundreds of years. Even Pancasila have existed since the kingdom and is carried out by the rulers at that time.

Pancasila is born, because President Sukarno deeply understood the conditions of the people of Indonesia which are diverse and varied, namely differences in ethnic groups, religions, beliefs, customs, languages islands and traditional customs. With the birth of Pancasila, President Sukarno hoped that the Indonesian people could be safe, harmonious and sentimental and united. Minister of Internal Affairs, Tjahyo Kumolo (Kedaulatan Rakyat page 7, November 7, 2017) invites regional government officials to implement the implementation of Pancasila in their respective regions with a regional income and expenditure budget. The government can also run the government based on Pancasila. With Pancasila foundation it is hoped that it can create a peaceful, peaceful and harmonious atmosphere for the life of the nation and state.

Pancasila is a strong Indonesian identity. Pancasila is able to make the Indonesian people who are of various ethnic groups, religions, beliefs and others become united. The Indonesian nation at that time considered the difference to be the beauty and gift of God of One Almighty which must not be contested or debated. The difference between the Indonesian people is used as a united starting point with the slogan "Unite we are firm we separate we collapse".

Indonesia has become strong, because it has Pancasila ideology which comes from the composition of the history and culture of the Indonesian nation itself. Pancasila is an ethical system and a system of community action which can make Indonesia a developed,

united sovereign, justice and prosperous nation. Pancasila can also be used as a reference in uniting the nation. Therefore, rearranging the values of Pancasila is a demand of the present in achieving a united, developed sovereign, justice and prosperous country in accordance with the ideals of the proclamation of 17 August 1945.

With Pancasila the Unitary State of the Republic of Indonesia is able to unite hand in hand, harmoniously and peacefully. This must be able to make a handle for the nation and state of Indonesia to re-formulate the values of Pancasila in daily life. As a young heir of the nation, it is obligatory to preserve and implement Pancasila in the context of daily life, according to current situations and conditions. Pancasila is an ancestral spirit, ancestors could have died, but their work would not die through the arrangement of Pancasila values so that the Indonesian people would remain the Unitary State of the Republic of Indonesia.

Therefore, all Indonesian people have a responsibility in accordance with their respective capacities to care for and maintain the integrity of the Unitary State of the Republic of Indonesia. The process of developing values which is the basis of that character requires a continuous process and the present. The young generation as the nation's successor must be motivated and triggered to create actions to build civilization with Pancasila foundation. Here the young generation as a strong cadre of the nation is needed as a relay process to crochet, practice and implement Pancasila values.

Conclusion. At this time the people of Indonesia are being hit by a wave of global capitalism which is not in favor of society in general. The Indonesian nation has lost the orientation of Pancasila as the ideology of the nation, the noble ideals of national life in accordance with the message of the opening of the Constitution of 1945 which has long been used as a source of direction for the nation and state. The wave of liberalization, slowly, but surely will affect the lives of nations and countries for the people of Indonesia.

As a great nation and country of Indonesia does not despair to face such an age and wave, because the Indonesian nation still has an ideology which is able to revive it to fight the tide of capitalism. The Indonesian nation also has figures with thoughts that are recognized by other countries, even by the international community who can revive the spirit of struggle, because of the prosperity of the nation and the Unitary State of the Republic of Indonesia. President Sukarno is a figure who has thoughts to fight capitalism and imperialism.

To neutralize the wave of global capitalism, leadership and character are needed to be able to make policies which are oriented towards efforts to protect the interests of the nation and the state and prioritize the interests of the people. Such leaders who are supported by the community to give enthusiasm towards a justice and prosperous society, President Sukarno as a Pancasila digger, still inherits values that are still relevant to face the tide of capitalism which needs to be lifted to the territory of Indonesia again. President Sukarno's teachings that are valuable while functioning to build modern Indonesian tribes are still stored in the minority of the people who want to restore the integrity of the Unitary State of the Republic of Indonesia based on Pancasila.

In the midst of a global situation in various aspects of life in a society that is full of pessimism about life social, economic and cultural, there are even social tensions between groups, between religions, between ethnic groups, caused by problems of justice, values the value of Pancasila in Bantul Regency is still relevant to reconstitute it through the implementation of Pancasila. As a consequence of practicing Pancasila values together, Bantul Regency society must be brave in the front guard to call more loudly in the public space to face globalization, pessimism and tension by rearranging² values Pancasila with the frame of Unity in Diversity (*Bhineka Tunggal Ika*) which is already owned by the Unitary State of the Republic of Indonesia. Pancasila is a seed that is spread by ancient Indonesian people whose strength has been tested.

² Crocheting, other terms, networking or make networking.

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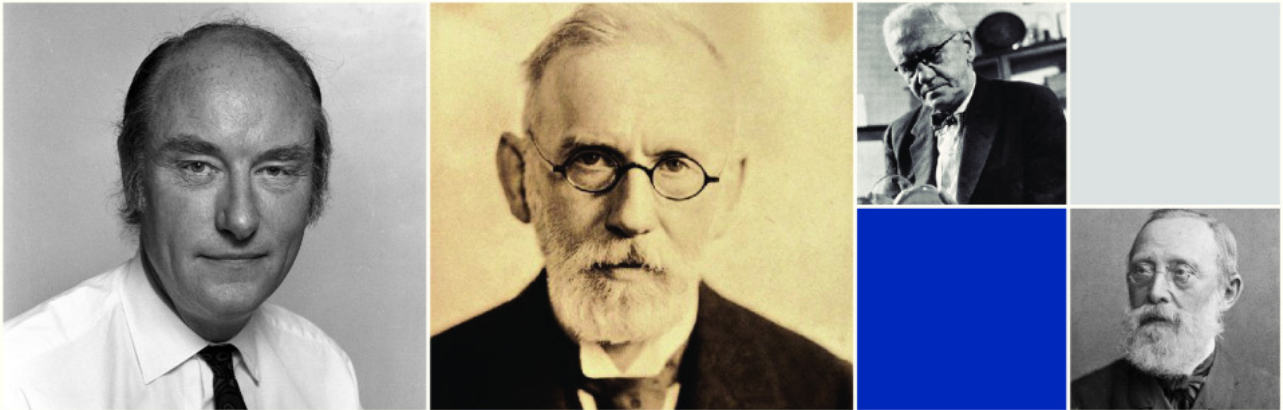
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