

Resources Development toward Civil Society

Based on Local Wisdom

Volume: 1



EDITORS
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**Resources Development toward Civil Society
Based on Local Wisdom**

Volume: 1

Editors:

**Hidayati Mustafidah
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Preface

Thank to Almighty God who has given His bless to us for finishing the 2nd International Conference on Research and Community Services (IRECOMS) with the theme “Resources Development toward Civil Society Based on Local Wisdom” in Purwokerto, Central Java, Indonesia. We present three sub-themes as results of research: 1) education based on human resources development and national competitiveness (4 titles), 2) poverty alleviation based on local resources, entrepreneurship, rural and shore area management based on local wisdom (10 titles), and 3) technology development based on environmental insight, health, nutrition, tropical diseases, and medicine (6 titles). On this occasion, we say thanks and deepest gratitude to all the honors committee organizers of the 2nd International Conference on Research and Community Services (the 2nd IRECOMS 2017) and to all authors in this book.

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**EDUCATION BASED ON HUMAN RESOURCES DEVELOPMENT
AND NATIONAL COMPETITIVENESS**

1

Chapter 1: The Role of Instructional Leadership on the Students' Satisfaction

Sukris Sutiyo

The research aimed to reveal the effects of instructional leadership on students' satisfaction directly, teachers' performance, organizational communication and school culture altogether as the intervening variables. The research employed a quantitative approach by means of survey method. The research was carried out at vocational high schools (VHSs) in Magelang City because they have special mission to prepare the students to get into the labor market after finishing their study and there were 19 VHSs involved in the research. The sampling technique that the researcher used was proportional random sampling and the data was collected through questionnaires. The data were analyzed by means of path analysis. Based on the results of the research, the relationship structure between the instructional leadership and the students' satisfaction were empirically proved. The researchers found that the empiric instructional leadership had a significant effect on the students' satisfaction both directly and indirectly through the intervening variables, namely teachers' performance, organizational communication, and school culture.

Keywords: *instructional leadership, teachers' performance, organizational communication, school culture, students' satisfaction*

1.0 INTRODUCTION

Vocational high schools have strategic role and position in the Indonesian national education system. At least, there are two reasons that put the vocational high schools on the position. First, the vocational high schools have become one of the institutions for pursuing the intelligence and fulfilling the educational demands of the Indonesian citizens. Second, the vocational high schools have provided important contributions for the Indonesian economic by means of providing the skilled labors for the business and industrial domain.

Jacinto (2010) states that Vocational Training defined in its origin as final training system for workers, is characterized by three distinctive elements: (a) independence from the regular

education system; (b) flexibility, establishing it as a non-formal system of education; and (c) tripartite government (that state, business and workers) although this is the result of an initiative from the state.

The purpose of technical and vocational and educational training (TVET) is preparation for work in the labor market. The focus of Technical and Vocational and Educational Training (TVET) is on the job (in contrast, general education focuses on the ability to learn, to understand the environment, and to prepare for the next level).

The graduates of vocational education are expected to be productive individual and to be able to mediocre labors. Furthermore, these graduates are also expected to be prepared when they have got certain occupation and to be prepared in encountering the changes of competence standard in the demand business and industrial domain competence. Vocational high schools as the institutions of human resources development should be able to provide the competences that will improve the quality of their graduates. The existence of vocational high schools nowadays has been expected by the society especially the one that demands an educational system that might generate graduates with competences necessary for the labor market.

Attentions toward the customers' satisfaction have been the main focus not only in the business and industrial domain but also in the educational domain although not all schools, including vocational high school ones, focus their attention to the customers satisfaction, in this case the students' satisfaction. It is important for the principals as the learning leaders to put their attention toward the improvement of learning service quality so that the students are convenient in attending the teaching-learning process. Therefore, the principals should understand the importance of students' satisfaction in order that management toward the students' satisfaction will gain attention and priority. The satisfaction that the teachers referred to is that the students should have well-qualified learning service so that they will have competences appropriate to the graduates' competence standards and the graduates are expected to meet the demands of business and industrial domain as well as the labor market.

Instructional leadership is very important to be implemented because the main mission of an educational institution is to create well-qualified learning in order to achieve the learning objectives. The principals have series of roles that should be performed altogether and the roles are educator, manager, administrator supervisor, motivator, entrepreneur and leader. The principals' role as a leader, and especially as an instructional leader, should have bigger priority compared to the other roles and functions because the schools' core business is to create a continuous learning. Therefore, the revision and the improvement of the learning service quality should be the main priority so the objectives of vocational high schools might be achieved.

On the other hand, the students as the main customers of the schools should have values or the students' values namely the satisfaction of accepting the service from their schools. The students' satisfaction might be achieved if the students perceive what they accept as something equal to or something beyond their expectation. In an educational context, the satisfaction might

be realized according to the schools' quality and the schools' quality might be achieved through the principals' role as the instructional leaders in improving the teachers' performance and in establishing the organization communication and the school culture.

The research aims to prove empirically the structure of instructional learning relationship toward the students' satisfaction by means of teachers' performance, organization communication and school culture mediation.

2.0 THEORETICAL BACKGROUND

Learning should be the principals' focus of attention within their role as a school leader because the schools' main mission is to educate and to provide opportunities for all of the students in order to attain knowledge, skills and values necessary for being successful adults in facing the future with many challenges. It is this mission, then, that demands the principals to focus their attention on the learning (learning-focused schools) which components consist of curriculum, teaching-learning process and learning results assessment. In addition, in order to improve the quality of learning results the principals are expected to be able to establish learning community, learning culture and learning school. On the other hand, Fidler (1997) states that the practical implications for instructional leadership as including: (1) managing the curriculum and teaching, including the organization of pupil grouping and time allocation, but also stimulating curriculum development (2) supervising teaching, (3) monitoring student progress; and (4) providing a positive teaching climate.

TVET (Technical Vocational and Educational Training) contributes to economic growth and competitiveness by enhancing productivity-individual, enterprise, and national." In other words, vocational education and training assists the economic development and the competitive edge by improving the individual, the company and the national productivity.

The principals as the learning leaders should be able to implement and to synergize a visionary and a situational leadership altogether in the same time. A visionary leadership is a leadership that should be based on a vision that one would like to achieve in the future. Riesenmy (2008) states that visionary leaders have the ability to clearly communicate the organizational vision. These leaders have personal characteristics that create follower self-confidence and trust. They empower their follower by creating an organizational culture that is caring and drives high performance.

Rapp (2011) states that successful superintendents will be those who have excellent communication skills, understand the instructional process, and work to create coalition that will ensure the financial and educational survival of the public systems. Meanwhile, Pashiardis, et al (2011) states that the strong interpersonal relationships among the principal and the teachers as well as the principal's approachable personality effectively created a strong culture of cooperation in the school. Hoy & Miskel (2008) explains a common definition of school climate

is “the set of internal characteristics that distinguish one school from another and influence the behavior of each school’s members.

Instructional leadership is very important to be implemented in the schools and is expected to be able to improve the teachers’ quality so that the quality might also improve the students’ learning achievement and eventually the graduates quality. Therefore, instructional leadership should be the main priority and the principals should provide more time allocations in order to improve the learning quality. Zepeda (2013) explains that Instructional leadership promotes excellence and equity in education and entails projecting, promoting, and holding steadfast vision; garnering and allocating resources; communicating progress; and supporting the people program, services, and activities implemented to achieve the schools’ vision.

The principals should provide more activities related to the curriculum renewal and improvement, the teaching-learning process and the learning results assessment. It will be better if the instructional leader makes instructional quality the top priority of the school and attempts to bring that vision to realization (Gupton, 2003). In other words, the learning leaders should put the learning quality into the top priority in the schools and should try to turn the vision into a reality. Besides, principals as learning leaders should be able to create a synergy between the focus on the teaching and the learning in one hand and the capacity of establishing teaching-learning process quality on the other hand. Robinson (2011) states that instructional leadership is performed by all teachers who have some responsibility, beyond their own classroom, for the quality of learning and teaching.

Meanwhile, Ohlson (2009) states that instructional leaders know what is happening in their classroom and develop the capacities of staff by building on their strength and reducing their weakness. These leaders attempt to sustain improvement and change in their schools by anticipating and overcoming the obstacles that inevitably will emerge along the way.

The results of a research by Blase & Blase (1999) find that model of effective instructional leadership was derived directly from the data; it consists of the two major themes: talking with teachers to promote reflection and promoting professional growth.” These findings imply that an effective instructional leadership model comes directly from two important themes namely discussions with the teachers in order to improve the reflection and improvement of professional development.

The influence of instructional leadership toward the improvement of students’ learning results should not be doubted anymore. Several educational experts have performed studies regarding the influence of instructional leadership toward the improvement of learning results and these experts conclude that: “If our schools are to improve, we must redefine the principal’s role and move instructional leadership to the forefront (Buffy, 1989);”. If a school is to be an effective one, it will because of the instructional leadership of the principal...(Findley, 1992);” and “Effective principals are expected to be effective instructional leaders....the principal must

be knowledgeable about curriculum development, teachers and instructional effectiveness, clinical supervision, staff development, and teacher evaluation (Hanny, 1987).

According to another research by Hoy and Hoy (2009), effective instructional leadership is generally recognized as the most important characteristic of school administrator. Furthermore, another research by Cosner & Peterson (2009) also states similarly that: promoting teachers professional development is the most influential educational leadership behavior.

3.0 RESEARCH METHOD

The research made use of quantitative approach with survey method. The research sites were 19 vocational high schools located in Magelang City and the student population was 3,176 people with 355 people as the research samples. Then, the teacher population was 750 people with 262 people as the research samples. Next, the principal population was 19 people and all of the principals became the research samples. The sampling process was done by means of proportional random sampling technique. During the sampling process, the researchers referred to the formula that had been developed by either Taro Yamane or Slovin. For the data gathering, the researchers distributed questionnaires that had been validated by the experts.

Construct validity in the research was intended to measure the validity coefficient constant through the empirical data. The calculation of the instruments' validity coefficient was performed by means of exploratory factor analysis (EFA), namely to test the ability of the instrument's items that had been designed in order to measure the variables. Several parameters that would explain the instrument's quality would be generated by EFA, namely: (1) Kaiser-Meyer-Olkin, abbreviated into KMO, and Measure of Sampling Adequacy, abbreviated into MSA, were the parameters that would explain the sample adequacy in order to measure several factors (Supranto, 2004) and the recommended value of KMO was bigger than 0.5; (2) Bartlett Test in the form of chi square was the parameter that measured the component (variables) independent resulted from the reduction and the recommended results of chi square should be less than 0.05; and (3) Loading Factor was the parameter that measured ability of the items and the recommended coefficient was bigger than 0.4. The instrument reliability was measured after the results of validity test had been classified as valid. The measurement of instrument's reliability in the research was performed by implementing the Alpha Cronbach formula and the acceptable minimum coefficient criteria was 0.70.

The analysis technique that the researchers employed in the research was path analysis. The path analysis was employed in order to describe and to test the inter-variable relationship model which had causal, instead of reciprocal, form. Through the path analysis, the researchers might find which path would be the most appropriate and the shortest one that an independent variable might take to the last independent variable (Sugiyono, 2012).

4.0 RESULTS AND DISCUSSIONS

4.1 Inter-Variable Relationship Structure

The direct and indirect influence of instructional learning toward the students' satisfaction were presented visually through the following Figure 1. The figure showed that the instructional leadership was hypothesized to have direct influence toward the students' satisfaction and to have indirect influence toward the mediation of teacher performance, organization communication and school culture.

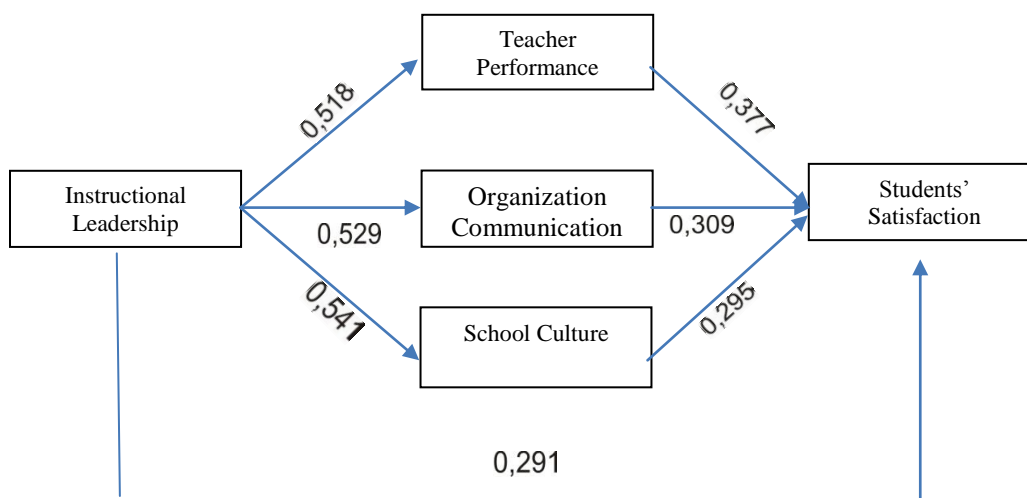


Figure 1. Inter-variable relationship

The results of empirical hypothesis testing supported all of the hypotheses. In the following Table 1, the researchers would like to present the inter-variable relationship that was hypothesized to have coefficient of regression with probability less than 0.05. These results implied that the exogen had been proven empirically to give significant influence toward the endogen.

Table 1. Results of Path Analysis

No	Variable		Γ	Direct			Indirect		
	Exogen	Endogen		B	Z	P	B	z	P
1	Instructional Leadership	Teacher Performance	0.518	-	3.69	0.001**	-	-	-
2	Instructional Leadership	Organization Communication	0.529	-	2.79	0.001**	-	-	-
3	Instructional Leadership	School Culture	0.541	-	2.49	< 0.0001**	-	-	-
4	Teacher Performance	Students' Satisfaction	-	0.377	3.32	< 0.0001**	-	-	-
5	Organization Communication	Students' Satisfaction	-	0.309	3.45	0.005**	-	-	-
6	School Culture	Students' Satisfaction	-	0.295	3.60	0.013*	-	-	-
7	Instructional Leadership	Students' Satisfaction	0.291	-	2.83	0.005**	0.518	3.94	< 0.0001**
Total Influence									
				B	t-hit	P			
Instructional Leadership toward Students' Satisfaction				0.809	6.00	< 0.0001**			

*: Significant at 5 %

**: Significant at 1 %

Source: Results of Path Analysis Testing

4.2 The Exogen Influence toward the Mediating Variables

Teacher performance, organization communication and school culture were the mediation of instructional leadership influence toward the students' satisfaction. From Table 1, the gamma (standardized) coefficient of instructional leadership toward the teacher performance was 0.518 with probability 0.001. $p < 0.01$ interpreted that the instructional leadership had very strong influence toward the teacher performance with the size of contribution equaled to 0.5182 or 26.83%.

The gamma (standardized) coefficient of instructional leadership toward the organization communication was 0.529 with $p = 0.001$ and toward the school culture was 0.541 with $p < 0.0001$. The $p < 0.0001$ interpreted that the instructional leadership had very strong influence toward the organization communication with influence of contribution equaled to 0.5292 or 27.98% and also had very strong influence toward the school culture with the size of contribution equaled to 0.5412 or 29.27%.

4.3 The Influence of Mediating Variables toward the Endogen

The mediating variables, namely teacher performance and organization communication had been proven empirically to have very strong influence toward the students' satisfaction and the finding was marked by the probability of coefficient beta that had been less than 0.01. Then, the school culture had strong

influence toward the students' satisfaction with $p < 0.05$. The teacher coefficient had coefficient beta $\beta = 0.377$ and the coefficient explained that the teacher performance was able to influence the students' performance for about 14.21%. The organization communication had coefficient beta $\beta = 0.309$ and the coefficient explained that the organization communication was able to influence the students' performance for about 9.55%. The school culture had coefficient beta $\beta = 0.295$ and the coefficient explained that the school culture was able to influence the students' performance for about 8.70%.

The significant findings altogether with the exogen ones toward the mediating variables that had been elaborated previously explained that the teacher performance, the organization communication and the school culture might mediate significantly the instructional leadership toward the students' satisfaction.

4.4 The Direct, Indirect and Total Influence

The direct influence of instructional leadership toward the students' satisfaction was shown the coefficient value $\Upsilon = 0.291$. The coefficient explained that the contribution of direct influence of instructional leadership was 8.47%. On the other hand, the indirect influence might be explained from the multiplication of β and Υ coefficient value from the previous results. The indirect influence of instructional leadership through the teacher performance was $0.518 \times 0.377 = 0.195286$, through the organization communication $0.529 \times 0.309 = 0.163461$ and through the school culture $0.541 \times 0.295 = 0.159595$; as a result, the total indirect influence was 0.518 with $p < 0.0001$ (very significant) or 26.83%.

The composite of direct and indirect influence explained the influence size of instructional leadership toward the students' satisfaction through all of the existing paths. In Table 1, the influence was 0.809 or 65.45% with $p < 0.0001$ (very strong).

4.5 The Structure of Inter-Variable Relationship

The results of the research which showed that the structure of instructional leadership inter-variable relationship had influence toward the students' satisfaction by means of teacher performance, organization communication and school culture had been empirically proven. Based on the results of path analysis, the researchers found that the hypothesized structure of inter-variable relationship had coefficient of regression with probability less than 0.05. The variable structure showed that the instructional leadership had direct influence toward the students' satisfaction and had indirect influence by means of teacher performance, organization communication and school culture mediation. The influence of each variable would be explained as follows.

4.6 The Influence of Instructional Leadership toward the Teacher Performance

The researchers found that there had been positive influence from the instructional leadership toward the teacher performance and the influence was 0.518 (see Table 1). The finding interpreted that the principals' instructional leadership had very strong influence toward the teacher performance and the contribution was 0.5182 or 26.83%. These results showed the important role that the principals had in managing the schools' resources by focusing on the teachers' performance. The principals as the instructional leaders might mobilize the schools' resources in order to achieve the multiple educational objectives, one of which was to optimize and to empower the teachers' performance which had been one of the most important educational components.

The principals, in the teaching-learning planning, should: direct and guide the teachers in identifying the students' needs, interest, talent and ability; arrange the learning objectives; develop the syllabus; develop the lesson plan; and select the teaching material and the teaching method according to the students' condition. Then, in the learning implementation, the principals should guide and facilitate the teachers in using and developing the multiple teaching methods. Next, in the learning assessment, the principals should guide the teachers in arranging the assessment tools, analyzing the assessment results, deciding the passing grade and assessing the learning effectiveness. Similarly, in the class management, the principals should guide and direct the teachers in managing the students, managing the tools and managing the laboratory. In addition to developing their performance, the principals should also evaluate the teachers' performance.

The results of the research had been in accordance with a theory that had been developed and a research by Blase & Blase (1999) model of effective instructional leadership was derived directly from the data; it consists of the two major themes: talking with teachers to promote reflection and promoting professional growth and effective principals are expected to be effective instructional leaders. The principal must be knowledgeable about curriculum development, teachers and instructional effectiveness, clinical supervision, staff development, and teacher evaluation.

Petterson (1993) stated that principals should provide support for the learning, for example by supporting that student needs - oriented teaching should be a top priority. Furthermore, Daresh & Playco (1995) stated that instructional leadership should be an effort of leading the teachers to a better teaching which in turn would improve the students' achievement.

Cosner & Petterson (2003) stated that promoting teachers professional development is the most influential educational leadership behavior. In order to focus most of the

time to improve the teachers' quality and the optimum benefit in the learning process, Finlay (1998) stated "if a school is to be an effective one, it will be because of the instructional leadership of the principal. Then, Daryanto (2011) stated that the principal had the task of developing the personnel's performance, especially the teachers' professionalism. In addition, Hopkins (2000) stated Instructional leaders are able to create synergy between a focus on teaching and learning on the one hand, and capacity building on the other. In other words, principals as the instructional leaders should be able to create a synergy between the focus on teaching and learning in one hand and the capacity of teaching-learning quality formation process on the other hand.

Furthermore, Halverson et al. (2005) stated the definition of instructional leadership has been expanded to towards deeper involvement in the core business of schooling which is teaching and learning. Attention has shifted from teaching to learning. The definition of instructional leadership had been expanded to the in-depth involvement with the schools' core activities namely the teaching and learning activities. As a result, the attention shifted from the teaching activities to the learning activities.

Meanwhile, Robinson (2011) stated Instructional leadership is performed by all teachers who have some responsibility, beyond their own classroom, for the quality of learning and teaching. The statement implied that the instructional leadership was shown directly by all of the teachers who had responsibilities in the teaching and learning quality.

Based on the discussions of the influence from the instructional leadership toward the teacher performance, the researchers would like to conclude that the results of the research strengthened the theories implemented in the research. The researchers understood that the principals as the instructional leaders should develop, improve and empower the teachers' performance. The teacher performance quality would influence the learning quality heavily. In addition, the principals should understand their role and function as the instructional leaders.

However, the results of the research was contrary to those of Stronge (1988) which stated that from all of the tasks that the principals should perform only 10% of the tasks were allocated to the instructional leadership. Similarly, the results of the research was contrary to those of Fink & Resnick (2011) which stated that the principals had been less optimum in benefitting their time in the class and in analyzing the teaching with the teachers. The principals should schedule meetings with the teachers but they rarely provided their leadership for improving the teachers' teaching capability. Within the recent research, the researchers found that the principals had allocated most of their time to the instructional leadership and

one of the components in the instructional leadership was teacher assessment and development.

4.7 The Influence of Instructional Leadership toward the Organization Communication

The researchers found that there had been positive influence from the instructional leadership toward the organization and the influence was 0.529 (see Table 1). The finding interpreted that the instructional leadership had very strong influence toward the organization communication and the contribution was 0.5292 or 27.98%. These results showed that the principals had an important role in establishing agreement between and among the stakeholders in the schools where they had been in charge of. The principals as the instructional leaders had a role and a function in communicating and coordinating the visions, the missions, the programs, the regulations and the policies to the teachers, the parents, the related institutions as well as in establishing cooperation with the society (business and industrial domain). The principals' ability in communication should be accepted, be comprehended and be implemented so that the ability would support the conductive learning activities.

The findings of the research had been relevant and in accordance with those of Pashiardis, et al. (2011), which stated the strong interpersonal relationships among the principal and the teachers as well as the principal's approachable personality effectively created a strong culture of cooperation in the school.

On the other hand, Rapp (2011) stated successful superintendents will be those who have excellent communication skills, understand the instructional process, and work to create coalition that will ensure the financial and educational survival of the public systems." The statement implied that the successful principals had been the ones who had good communication skills, understood learning process and worked for creating relationships that would ensure the sustainability of educational life. Meanwhile, Riesenmy (2008) stated that Instructional leadership has the ability to clearly communicate the organizational vision. These leadership have personal characteristics that create follower self-confidence and trust. They empower their follower by creating an organizational culture that is caring and drives high performance.

The statements implied that instructional leadership had an ability to communicate the organization's visions clearly. Such leadership had personal characteristics that might make the disciples to be self-confident. The leadership empowered the disciples by creating organization culture that paid attention and that encourage high performance.

The communication ability was one of the competences that should be possessed and be mastered by the principals. By possessing effective communication ability with the teachers, the parents, the students and the society members, the principals would be easier and would be more successful in implementing their role and function of instructional leadership.

Based on the discussions of the influence from the instructional leadership toward the organization communication, the researchers would like to conclude that the results of the research had been proven empirically and had supported the relevant theories and studies referred to in the research. The reason was that the principals, in implementing their main role and function as the instructional leaders, had not been apart from the organization communication both internally and externally. Internally, the principals should be able to communicate the visions, the missions, the programs, the activities and the policies to all of the school members in order to be comprehended and to be implemented; the communication was important in order to support a well-qualified teaching-learning process. Externally, the principals should be able to establish cooperation with related institutions, business domain and industrial domain for the sake of training, field practice and occupation placement so that the students' expectation and satisfaction might be met.

4.8 The Influence of Instructional Leadership toward the School Culture

The findings on the instructional leadership had significant influence toward the school culture and the influence was 0.541 (see Table 1). These findings showed that the instructional leadership had strong contribution toward the school culture and the contribution was 0.5412 or 29.70%. These findings had also been a fact that confirmed that the success of school culture establishment was not apart from the principals' role as the instructional leaders. The principals, through their authority, might encourage the conditions that supported the establishment of school culture such as embedding positive habits, values, beliefs and norms that might support conducive and progressive teaching and learning process. In the practice the principals created academic atmosphere that had been built by making school policies and programs in order to improve the students' learning achievement as well as to develop and to increase the quality of the learning atmosphere. As a result, the students would always be disciplined, be ordered, be safe and be convenient in learning activities. Then, the students would establish and maintain a strong sense of family; would respect and appreciate the occurring differences in the ethnical, social, economic and religious domain; and would establish the values of solidarity in their schools.

The results (findings) of the research had been in accordance with a theory and a research by Squires & Kranyik (1996) which found that “A positive school culture may have a significant influence on the academic and social success of the students within schools.” The finding of their research implied that the positive school cultures would have good influence toward the students’ academic achievement and social success within the school environment.

When a school exhibits characteristics of positive culture, there are fewer suspensions, increased attendance rates, and increased achievement of standardized test scores.” The finding here implied that schools that had positive cultural characteristics might be able to increase the general attendance rate and the standard test score. Furthermore, Ross (2007) stated that “Working collaboratively with school leadership and teachers to strengthen the culture of the school , with the intent of improving teaching practice and students learning, is a promising school reform strategy.” In this case, the finding implied that the cooperation between the principals and the teachers might strengthen the school culture with an objective of improving the teaching practice and the students’ learning. The objective might be made as one of the strategies for the school reformation.

In relation to the case, Hoy & Hoy (2003) stated that the principal, however, is responsible for developing a school climate that is conducive to providing the very best practice instructional practices. Their statement implied that the principals should be responsible in developing the conducive school culture in order to provide the best learning practice. Fink & Resnick (2011, p.7) also stated that as Instructional leaders, principal has to lead-by creating a culture of learning by providing the right kinds of specialized professional development opportunities when they are needed. Their statement implied that as instructional leaders the principals should be able to create learning culture by providing opportunities of specific professional development whenever the development was necessary.

In addition, Hasanah (2008) stated that school culture might be described the attitudes of being supportive, collegial intimate and cooperative. Peterson (2002) suggests that culture is built within a school over time as teachers, school leaders, parents and students work together. His statement implied that the school culture established within the school environment might encourage the cooperation between and among the teachers, the principals, the parents and the students. Similarly, Hoy & Miskel (2008) stated that a common definition of school climate is the set of internal characteristics that distinguish one school from another and influence the behavior of each school’s members. Their statement implied that in general the school atmosphere/culture had been a set of internal characteristics that

differentiated one school from another and that influenced the behaviors of each school members.

Based on the discussions on the influence of instructional leadership toward the school culture, the researchers would like to conclude that the results of the research strengthened the theories and the relevant studies referred to in the research had been proven empirically. The researchers found that the principals, in performing the instructional leadership, should be able to establish school culture that might encourage the improvement of learning quality. It was important for the principals to embed the organization values, norms, beliefs, traditions, regulations and atmospheres to all of the school members and these aspects should be given attention by the principals in performing their function as the instructional leaders so that the students would be satisfied.

4.9 The Influence of Instructional Leadership toward the Students' Satisfaction

The findings on the research showed positive influence from the instructional leadership toward the students' satisfaction and the influence was 0.291 and the contribution was 8.47%. These findings implied that the instructional leadership would give actual impact to the students' satisfaction. Therefore, it had been important to meet the students' needs and expectation in order that the students would be satisfied. The students' satisfaction might be achieved if the students perceived that the service had been equal to their expectation or even beyond their expectation. In order to achieve the students' satisfaction, the principals should provide well-qualified teachers, sufficient facilities, modern laboratories, convenient libraries with complete book collection and high performance service in order to improve the students' learning achievement. In addition, the principals altogether with the teachers should provide high-quality service to the students because the students had been the main customers who should be the focus of attention.

The results of the research had been in accordance with a research by Deming (1982) which stated that quality referred to the market demand or the customer demand. Similarly, according to Feigenbaum (1986) quality referred to the full customer satisfaction. In relation to the statement, Kotler (1994) stated, "Satisfaction is the level of a person's felt state resulting from comparing a product's perceived performance (or outcome) in relation to the person's expectation." Furthermore, Ekowati (2008) stated that satisfaction referred to the sense of happiness or of disappointment that an individual exposed after comparing the generated product/service (the output) performance and the expected product/service (output). Tjiptono (2004) also stated that satisfaction referred to the

conscious evaluation or the cognitive assesment regarding the product performance; according to the definition, the users should consider whether the product had good or bad relative performance and whether the product had been appropriate to the use/the operation or not. Then, Tjiptono & Chandra (2007) also confirmed that the service quality should start from the customers' demands and should end with the customers' satisfaction and the positive perception toward the service quality.

Based on the discussions on the influence of the instructional leadership toward the students' satisfaction, the researchers would like to conclude that the results of the research strengthened the theories referred to in the research. The students' satisfaction would be achieved if the students' expectation might be met by the schools. The satisfaction that the researchers referred to was in the form of teacher quality, communication fluency and supportive school culture and the three aspects were able to support the creation of high-quality learning and sufficient facilities. The results of the research explained the established theory and were supported by the relevant studies that had been empirically proven.

5.0 Conclusions and Suggestions

5.1 Conclusions

The results of path analysis that had been elaborated in the previous section explained and empirically proved the influence of instructional leadership toward the students'. The researchers found that empirically the instructional leadership had significant influence toward the students' satisfaction both directly and indirectly through the following variables: teacher performance, organization communication and school culture.

5.2 Suggestions

The researchers would like to recommend the following suggestions:

5.2.1 The instructional leadership might be constructed altogether with the other variables in order to achieve the students' satisfaction. The mediation variables, namely teacher performance, organization communication and school culture would possibly have similar impact if these variables had been associated to the other variables that the school possessed. Thereby, the schools might maximize the already possessed potentials in order to manage the students' satisfaction; furthermore, the variables might be expanded in order to impact more variables. It would be more helpful if the research might be re-tested in several constructions of different variables.

5.2.2 in implementing the instructional leadership principals should involve and empower the teacher performance, improve the organization communication and develop the school culture in order to manage the students' satisfaction as well as possible.

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Chapter 2: Teaching Efficacy Analysis of Economics Prospective Teacher Students

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Right to Education Index (RTEI) 2016 indicated that Indonesian education quality was considered mediocre, also it was supported by the below average result of teachers' competency examination. Empirically, professional teacher program has been implemented, yet it did not contribute significantly to the teachers' quality. To support professional teacher development, it requires good teaching efficacy. Teaching efficacy is an important variable which is related to knowledge, skill, and behavior of the teacher in performing efficient and effective learning. This study aims to determine the direct and indirect influence of attitudes toward the teaching profession, preparation of learning programs, collective efficacy to teaching efficacy of prospective teacher students. The data obtained through questionnaire distribution were then analyzed using path analysis. According to the research findings, it affirms a direct and indirect influence of attitude toward the teaching profession, preparation of learning programs, collective efficacy to teaching efficacy of prospective teacher students. Collective efficacy, successfully moderated the influence of preparation of learning program, attitude towards teaching profession and teaching efficacy of teacher prospectives. Prospective teacher students' knowledge and skill obtained in the college influence the teaching efficacy. Perceptions of prospective teacher students to the profession of teachers affect students' beliefs and confidence. Student perceptions of learning content, teaching difficulties, and student competence can form a good collective efficacy resulting in good teaching efficacy.

Keywords: *Teaching Efficacy, Preparation of Learning Program, attitude towards teaching profession, Collective Efficacy*

1.0 INTRODUCTION

The most recent educational policy is correlated with the development of professional teacher, the professional teacher is a teacher who possesses knowledge regarding effective teaching such as learning strategy and technique mastery as well as learning experiences. For a prospective teacher, classroom management ability and learning technique could be obtained through micro teaching, teaching practicum, an internship program in school. In order to support the formation of a professional teacher, it requires good teaching efficacy. Efficacy of teaching is the belief of teachers in managing and implementing learning successfully through teaching strategies, classroom management, and students' involvement. The teaching efficacy is an important variable related to knowledge, skills, and teacher behavior in producing efficient and effective teaching practices. As an academic efficacy, it is very important for students, and so is for teachers (Chambers & Hardy, 2005).

Based on the observation result of the students of Economics Education, during microteaching and internship in school, his or her teaching ability is low and does not believe in his or her own ability. Thus, the learning in the classroom looks stand-offish. Whereas, when it is regarded from the GPA they obtained, they have a considerable high GPA. Some studies reveal that prospective students possess knowledge regarding the subject matter and pedagogy, but they do not always have the ability to apply the pedagogy skills and present or practice their knowledge in the classroom. It shows that they have no efficacy of teaching, which they are not sure of teaching in the classroom (Redmon, 2007). In addition to collective teaching, Kent (2007) states that the prospective teacher's learning program during the lecture determines the need for teaching efficacy.

The first factor affecting the teaching efficacy is the quality of the preparation of learning programs obtained during the lectures. Specifically, the ability of prospective students in managing the class and motivating students is determined by the learning objectives that have been prepared. Furthermore, teaching efficacy is also influenced by attitudes toward the teaching profession. Attitudes towards the teaching profession is a positive or negative assessment of job conditions as teachers, its recognition and salary earned. Prospective teachers have satisfaction if they can teach and give a positive influence on students and able to shape the behavior and achievements in the classroom. Therefore, this study was conducted to examine the variables affecting the efficacy of teaching. The third factor is collective teaching. Teaching efficacy and collective teaching simultaneously complement each other to change the human lifestyle.

Bandura (1997) argues that individual tries control his or her lives not only through individual self-efficacy, but also collective efficacy. Collective efficacy is the belief of society that their efforts simultaneously can produce certain social changes. Self-efficacy and collective efficacy simultaneously complement each other to change the human lifestyle. Sources

of *collective efficacy* include the *perception of the teaching context, operationalizing the difficulty of the teaching task that faces the school and the faculty's collective competence*. Increasing evidence suggests that novice teachers complain about difficult teaching tasks with insufficient help from peers and lack of instructional resources (Hebert & Worthy, 2001; Podsen & Denmark, 2000). Bandura (1997) suggests that one can show more effort and perseverance when facing difficult tasks.

According to the aforementioned problems explanation, this research purpose is to identify the direct and indirect influence of attitudes toward the teaching profession, preparation of learning programs, collective efficacy on *teaching efficacy* of prospective teachers. This study will examine Teaching Efficacy derived from Self Efficacy Theory (Bandura, 1997).

2.0 METHODS

This research employed quantitative approach using explanatory research design to explain each variable within this research. This research appertains to causality associative which is ex-post facto. The data collection techniques used in this study was a questionnaire. Then, the data obtained were analyzed using path analysis method. According to Riduwan (2011) path analysis is a possible method of statistical analysis in giving a quantitative interpretation or interpretation of the relationship of a number of variables in the model. The purpose of this path analysis is to determine the direct and indirect effects among a number of variables. The population in this study was the Economic Education students who have taken internship Program at school (PPL) as many as 180 students. In the determination of the number of samples, this research samples was determined by using the Slovin formula with a percentage of 5% clearance. From the formula, it was obtained 124 students Economic Education as a sample. Furthermore, the sampling technique was using *simple random sampling* by random lottery. Also, the data processing were done by using SPSS version 21.

3.0 RESULTS

Having passed the validity, reliability, multicollinearity and normality test and based on testing of linearity it was found that the relationship between each independent variable and the dependent variable obtained a p-value which is greater than 0.05, 0.085. Thus, it is confirmed that the whole relationship between the independent variable and the dependent variable are linear and the linearity assumption of the relationship can be fulfilled. There is four variables which were tested in this research, Preparation of Learning Program as X1 variable, Attitudes toward Teacher Profession as variable X2, Collective Efficacy as X3 and Teaching Efficacy variable as variable Y. This test was done by using path analysis. First, it tested the influence of Preparation of Learning Program on Teaching Efficacy through Collective Efficacy. Second, it

tested the influence of Attitudes towards Teaching Profession to Teaching Efficacy through Collective Efficacy. The analysis of the path resulted in direct and indirect effects of these variables. Based on the regression results, it obtained partial path coefficient as Figure 1.

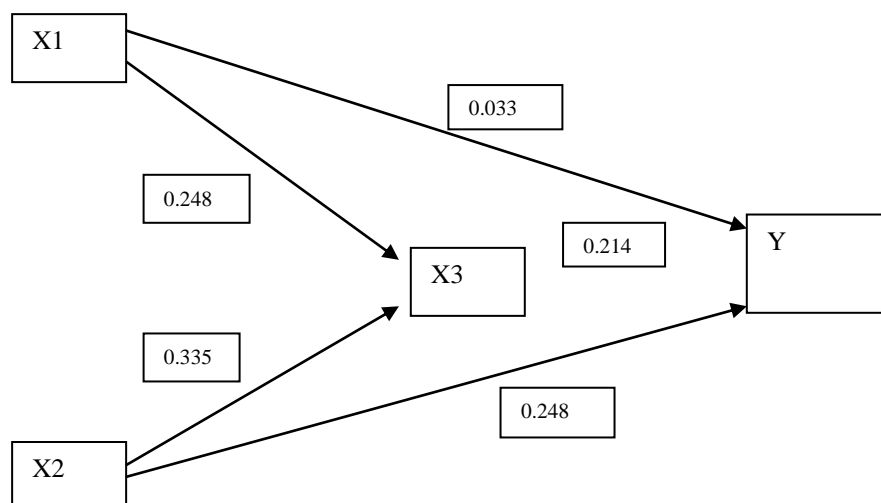


Figure1. Path Analysis

The direct influence which is presented in the research problems are 1) the influence of preparation of learning program (x1) on teaching efficacy (y), 2) the influence of attitude towards teaching profession (x2) on teaching efficacy (y) and 3) the influence of collective efficacy (x3) on teaching efficacy (y). Through path analysis, the influence can be shown by parameter β_{y1} , β_{y2} and β_{y3} in the following research design.

Table1. Direct Effects of Variables X1, X2, X3, and Y

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	23.137	4.394		4.810	.000
	X2	.252	.103	.248	2.438	.016
	X1	.355	.070	.335	6.545	.000
	X3	.347	.114	.214	3.908	.000

a. Dependent Variable: Y

According to regression coefficient table, it obtained $\beta_{y1} = 0,335$, $\beta_{y2} = 0,248$ dan $\beta_{y3} = 0,214$, each value of coefficient can be calculated regarding the influence of preparation of learning program on teaching efficacy : $\beta_{y1} \times \beta_{y1} = 0,335 \times 0,335 = 0,112$ or 11,2%. The direct

influence of attitude towards teaching profession on teaching efficacy : $Py2 \times Py2 = 0,248 \times 0,248 = 0,061$ or 6%. In accordance with the value of each coefficient, the direct influence of collective efficacy on teaching efficacy was $Py3 \times Py3 = 0,214 \times 0,214 = 0,045$ or 4,5%. Meanwhile, the indirect influences proposed in this research include indirect influence of preparation of learning program (X1), attitude towards teaching profession (Y) through collective efficacy (X3). The indirect influence of the variables is presented in the following table.

Table2. Coefficients of Indirect Effects

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	23.137	4.394		4.810	.000
	X2	.252	.103	.248	2.438	.016
	X1	.355	.070	.335	6.545	.000
	X3	.347	.114	.214	3.908	.000

a. Dependent Variable: Y

Table 3. Coefficients of Indirect Effects

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	23.137	2.125		9.973	.000
	X1	.252	.103	.248	2.438	.016
	X2	.355	.070	.335	6.545	.000

a. Dependent Variable: X3

According to the results, the indirect influence of preparation of learning program on teaching efficacy through collective efficacy was confirmed. This indirect influence could be identified by looking at the standardized coefficient (Beta), each of value is 0.248 and 0.214. According to the value of each coefficient, it obtained the calculation of indirect influence of preparation of learning program on teaching efficacy through collective efficacy amounted to $0,248 \times 0,214 = 0,053$ (5,3%). Meanwhile, the indirect influence of attitude towards teaching profession on teaching efficacy through collective efficacy was $0,335 \times 0,214 = 0,071$ (7,1%). In addition, based on the analysis results, the total influence value was 0.342 or 34.2%.

4.0 DISCUSSION

4.1 The Influence of Preparation of Learning Program on Teaching Efficacy

There is a direct influence of preparation of learning program on teaching efficacy. The results obtained through this study support and confirm Redmon's (2007) study which exposes that preparation of program before practicum, during practicum, and after practicum influence on the teaching efficacy of prospective teachers. The preparation includes pedagogic skill and knowledge required as an initial requisite in teaching and understanding materials which include a lesson plan, media, learning method, learning evaluation, and material of lesson.

Through the preparation of learning program, teacher's activity in the classroom will be well-directed. As explained by Tshannen-Moran et al (1998), the teacher will have greater confidence to manage and conduct the responsibility as a teacher the moment he or she has a prepared learning program before coming to the classroom. Prospective teacher and teacher will be more confident in teaching since they have understood what should be done in the classroom. In line with Bandura's theory regarding self-regulation and cognition, human as an individual could organize and manage him or herself, influences the behavior by organizing the surrounding environment, generating cognitive support, and creating consequences for his or her behavior.

Prospective teacher students should be able to arrange and compose preparation of learning program. The knowledge regarding the preparation of learning program has been obtained by students through pedagogical courses such as Curriculum, Lesson Plan, Learning Evaluation, Instructional Media, and Learning Teaching Strategy. Henke, Chen and Geis (2000) explain that curriculum in higher education should accommodate the necessities of prospective teacher for preparing them for teaching. It has an apparent distinction between teachers who possessed experiences which are correlated with good preparation or learning and teaching practice and teachers who did not possess such experiences.

4.2 The Influence of Attitude towards Teaching Profession on Teaching Efficacy

Prospective teachers' perception towards the teaching profession contributes to teachers' self-confidence in teaching. Attitudes toward the teaching profession according to Hoy and Miskel (2001) are a positive or negative assessment of job conditions as teachers, recognition and salary earned. The attitude of a prospective teacher to the profession of teachers will bring the motivation to remain consistent in this profession. In his or her praxis, when a prospective teacher perceives that the

teaching profession can give positive things to him or her, it will bring the confidence or optimistic of prospective teachers in carrying out learning.

4.3 Direct Influence of Collective Efficacy on Teaching Efficacy

This study proves that there is a direct influence of collective efficacy on teaching efficacy amounted to 4.5%. In an educational process, the physiological and psychological state of learners who are ready to learn, parental support of learners, supportive learning facilities and education system strongly supports the effectiveness of the implementation of the educational process. Educational institutions that support the development of professionalism of teachers will foster personal efficacy for every educator.

Collective efficacy can control the teaching efficacy of a teacher. Collective efficacy and personal efficacy simultaneously is able to alter the human lifestyle for the better. Teaching efficacy of prospective teachers in carrying out teaching practice in schools will be formed along with collective efficacy in schools where prospective teacher students practice teaching. Schools that provide support to their teachers when faced with difficulties in carrying out their duties will foster believe, enthusiasm and confidence in solving all problems related to learning.

4.4 Indirect Influence of Preparation of Learning Program on Teaching Efficacy through Collective Efficacy

Individual's confidence and belief are constructed by his or her own internal factor and behavior control from the surrounding environment. According to Bandura in social learning theory, human behavior and attitude are controlled by cognitive, behavior and environment. People determine their behavior by controlling the strength of the environment however it is also controlled by the strength of their own environment. Environmental factors will interact with the individual, forming a standard of self-evaluation of a person whether the individual is able to solve issues and problems as well as exist in his or her own environment.

When a prospective student has arranged learning program based on his or her knowledge skill, yet possessing depressed collective efficacy, it decreases the teaching efficacy. The learning program that has been created will not be implemented effectively, if the whole elements, such as fellow teachers, school facilities, learners and leaders in schools discourage the prospective teacher. Teaching efficacy of a prospective teacher and / or teacher will be formed when there is coordination of action from several related individuals or groups which support such activity. This research proves that collective efficacy moderate preparation of learning program on Teaching efficacy amounted to 5.3%. Further, it supports the research of Bakar et al (2008) which confirm that the efficacy of

teaching, professional commitment and satisfaction are correlated to program effectiveness. The above-mentioned commitment refers to one's commitment to the profession and the shared commitment establish within the organization.

4.5 Indirect Influence of Attitude towards teaching Profession on Teaching Efficacy through Collective Efficacy

This research also affirms that indirect influence of attitude towards teaching profession on teaching efficacy through collective efficacy amounted to 7.1%. Individual's attitude in appraising teacher profession will be generated for how the individual interacts with his or her surrounding environment. If the individual has good perception, thus his or her personal efficacy is relatively high and vice versa. Also, if teacher's collective efficacy is low, then the teaching efficacy will be low and vice versa. Prospective teacher students' efficacy will be generated the moment they conduct a teaching practicum in school. Flores (2001) exposes that individual's job as a teacher takes an imperative role in constructing prospective teacher's attitude which includes a commitment to profession and communication within the surrounding environment in school during teaching practicum.

Teaching practicum in school serves as a channel for prospective teacher students to strengthen their perception of the teaching profession. The initial perception regarding teacher profession obtained through courses and lectures, family circumstance, and another related environment will be developed after interacting with the real situation in school. Collective efficacy in school will then determine the further perception of prospective teacher students regarding teacher profession and result in their belief of teaching.

5.0 CONCLUSION

In accordance with the findings and data analysis within this research, there are direct and indirect influences of preparation of learning program attitude towards teaching profession, collective efficacy through teaching efficacy. Collective efficacy successfully moderates preparation of learning program and attitude towards teaching profession on prospective teacher students' teaching efficacy. Knowledge and skill obtained by prospective teachers during lectures in college determine their belief and confidence in teaching. Therefore, teacher's education institute should be able to accommodate prospective teacher needs such as providing relevant knowledge and skill to prepare them as a qualified teacher.

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Chapter 3: The Use of Fillers in a Verbal Communication by College Students

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This research is aimed at finding out types of filler used by students as well as their perception towards their uses. Data were collected through classroom observation, interview, as well as questionnaire. Subjects of this research were third semester students who join speaking 3 classes. From the gained data, it is known that most students used 'hum', 'what is it', as well as 'you know' as the most used filler in spoken communication. Students acquired these fillers mostly from such sources as lecturers, teachers, western films and internet. They intensively implant a communication model from which any types of filler are used. Students also assumed that fillers hold important functions in communication. Fillers are considered a part of communicative strategy to construct an appropriate communication model. Fillers are also regarded as an important learning material that should be discussed in a classroom discussion. This research is expected to be a consideration for lecturers to provide any appropriate models of communication which is effective in relation with the use of fillers for students. Fillers will also gain more attention as a learning material in a classroom discussion.

Keywords: *filler, communication, perception*

1.0 INTRODUCTION

The use of fillers is commonly found in a verbal communication. Fillers themselves are a part of discourse markers not referring to certain meanings. Their use is mostly intended to fill the gap in communication enabling engaged speakers to collect ideas and to share them. The speakers mostly have no certain patterns in using fillers as they appear mostly in spontaneous speech and represent speakers' moods (Candea, 2005). They may appear in the beginning or at

the end of produced utterances. Moreover, the use of fillers reflects the users' personality and characters which make each user unique in using a language.

Fillers are categorized into lexicalized and unlexicalized fillers. Lexicalized fillers are certain words which have certain meanings that are used to fill the gap in conversation. These fillers can be in the form of a single word like 'well' or even a clause like 'how do you put it?'. The most common lexicalized fillers used by speakers are "you know" and "I suppose" (Barr & Seyfeddinipur, 2010). Unlexicalized fillers are fillers which are representing certain sounds like 'humm' and 'er'.

The excessive use of fillers may generate negative effects despite being common in communication. An individual generating excessive fillers will pose an expression of hesitation, anxiety or lack of readiness (Hymes, 2005). However, people may consider that these excessive uses might be deliberately generated to create an informal communicative atmosphere. No matter what the purpose is, it is undeniable that fillers are inseparable part of communication.

The phenomenon of fillers use becomes an interesting topic to discuss in its relation to English language learning. During a communication process in the class, deliberately or undeliberately, fillers are an unavoidable element of language produced even by English teachers. Therefore, students will be likely to accept fillers as an permissible element as they will copy what their teacher do in using a language. One possible problem that may occur during this stage is the excessive use of fillers that certainly negatively impacts students' performance.

Considering the crucial role of fillers, this research was conducted to examine the implementation of fillers in verbal communication by university students. The description given in this research is expected to be a reference for education practitioners to achieve the appropriate language competence dealing with fillers use.

1.1 Fillers' Definition

Fillers are any sounds or words used to fill the gap in utterances production. They are usually transcribed into several words as uh, um, err, mm, ah, or others. In general, they are composed of vocal letter and nasal bilingual components which provide options for the users. Fillers' production are usually unpredictable as they deal with no certain communicative contexts and expected to appear around 2-5% of the whole utterance production.

Fillers' production in utterance production in the early stage of language learning process has been an interesting issue to discuss among linguists. Despite being considered natural for many linguists, some of them consider that their emergence poses negative influences in language use. The excessive use of fillers might be considered a problem to use a language. Peters (2001) assumed that fillers can negatively impact language acquisition.

Peter and Menn (1993) claim used that fillers might be a choice to substitute certain words during conversation. This claim is supported by Lleo (2000) stating that fillers are substitutes to determiner in Spanish. Dresler and Karpf (1995), Venezino and Sinclair (1997) and Cristofidou and Kappa (1998) also state that fillers possess no certain structured role in verbal language production.

1.2 Using Fillers in Communication

As a part of language production process, fillers are produced with specific purposes. Fillers pragmatically are aimed to signify a cognitive process. This process is bidirectional as the interaction occurs between two speakers or more. Fillers will be likely found in the beginning of utterance production as the speakers find it difficult to deliver their thoughts and ideas.

Fillers also lead interlocutors to get the gist of what the speakers attempt to convey in an indirect way. It will likely happen that the speaker produces fillers in the form of questions after producing a declarative utterance. The interlocutor commonly knows what the speaker expects to express through his fillers. It shows that fillers can also occur at the end of an utterance (Bailey & Ferreira, 2003). In addition, the production of fillers after the message is conveyed might indicate the need of further explanation.

Several discourse functions as determining turn-taking as well as constructing the information can be suitably communicated through fillers. They might be necessary to manage information as it is transferred during communication. The spontaneity of verbal communication will be suitably completed with fillers to control turn-taking.

1.3 Fillers' role in verbal communication

Fillers hold several important roles in the language production. These roles are dealing with the phonological construction and sentence structure.

Fillers as a pure phonological element

Fillers are abstract elements which are produced during early language production. They appear as a result of prosodic pattern from the received language input (Barr and Keysar, 2006). Despite having been observed in many languages in the world, the existence of fillers is considered unrelated to language structure development of adults.

Fillers as a basic grammatical element

Fillers are considered an evidence of functional category in adult learners. The emergence of fillers in the initial stage of language learning results in a specific cognitive development. The use of fillers becomes a strategy to develop a situation

and determine the degree of formality during a communication (Bayley and Ferreira, 2003).

Fillers describe a process of development to construct a gap filling towards the received language input. In this case, learners are required to make the gap though it may not address to an evidence of the gap creation in the form of syllable traces. The development occurring in each slot covers logical morphological and further syntaxis properties.

2.0 METHODS

This research used descriptive method. Descriptive method aims to describe artificil and natural phenomena which take a form of activity, characteristics, changes, relationships, similarity, and even differences among phenomena (Sukmadinata, 2006). Sugiyono (2005) stated that a descriptive research is intended to examine certain situation by using scientific procedure by providing the answers in an actual way. This research also implemented a qualitative and quantitative approach. The required data are collected in the form of opinion, response, information, concepts and details in solving the problems (Nawawi& Mimi, 1994).In addition, the numerical data were also gathered from observation, interview and questionnaire. This research aims to investigate the fillers used by english education students as well as their perception towards their use.

The subjects of this research were students of the third semester students of english education department. The total number of subject was 108 divided into 4 classes. These subjects were observed during their teaching process. To collect more data about fillers used by students, some subjects were also selected for interview. The questionnaire were distributed to all students to examine their perception towards fillers and their strategy to use them.

3.0 RESULTS

This research used three instruments to collect the data. The findings are as follows:

3.1 Observation Result

The observation was carried out for three weeks with four classes as the research subjects. During that period, observation was conducted twice for each class. The data during the observation were collected through recording which was later transcribed to find out the types of fillers used by students

3.1.1 The observation of class A

Meeting 1

The first observation in class A indicated several appearances of fillers. Several utterances containing fillers are:

- *'I think people is smoke because of lifestyle'.*
- *'Hmmm, people like to smoke because*

In total, it was found that there were seven utterances produced that contain fillers. The lexicalized fillers found were 'well', 'I think', 'what is it' and the unlexicalized filler was 'hummm'. The frequency of fillers appearance is as follows:

Table1.Fillers used during observation 1 in class A

No	Filler	Frequency
1	Hum	5
2	I think	1
3	You know	1
	Total	7

Meeting 2

The second observation in class A found two fillers as used in the first meeting. The samples of the fillers are:

- *'hummm, deforestation is dangerous because*
- *'you know, people should stop cutting the tress'*

The number of fillers found in the second meeting can be seen in the following table.

Table 2. Fillers used during observation2in classA

No	Fillers	Frequency
1	Hum	5
2	You know	2
	Total	7

3.1.2 The observation ofclass B

Meeting 1

During the observation in class B, students were identified to use several fillers in their utterances. The example of utterances containing fillers are:

- *'I think stop smoking is difficult because people cannot*
- *'hummm, people consume much expensive food recently'*

There were nine utterances that were equipped with fillers. The fillers used were is it, hum, and I think. The frequency of the fillers used by students can be seen in the following tables.

Table 3. Fillers used during observation 1 in classB

No	Fillers	Frequency
1	Humm	5
2	I think	1
3	You know	1
	Total	7

Meeting 2

The second observation in class B revealed that students used a different variant of filler. During a discussion, a student used the filler 'well' and no student used 'I think'. Some fillers produced during observation are

- *'well, it is not easy to keep the forest.....'*
- *'hmmm, it may cause flood'*

In total, there are nine utterances which contained fillers. The list of the fillers can be seen in the following table.

Table 4. Fillers used during observation2in classB

No	Jenis Filler	Frekwensi
1	Hum	6
2	You know	1
3	Well	1
	Total	8

3.1.3 Theobservation of class**Meeting 1**

Duringthe observation in class c, the students only produced one type of filler. It was lexicalized filler 'hummm' that students used four times. The samples of utterances containing fillers are.

- *'hummm, cutting tress can cause landslide'*
- *'hummm, cutting tress is dangerous'*

Table 5. Fillers used during observation 1 class C

No	Fillers	Frequency
1	Humm	4
	Total	4

Meeting 2

In the second day of observation in class c, students used a different variety of filler. They used not only 'hummm' but also a lexicalized filler 'well'. The samples of utterances containing fillers are as follows.

- *'hummm, football is the most popular sport in Indonesia'*
- *'well, one of problems in sports in Indonesia is on the organization'*

There were six utterances that were indicated to use fillers. The following tables shows that use of fillers in utterance production.

Tabel 6. Fillers used during observation 2 class C

No	Jenis Filler	Frekwensi
1	Humm	5
2	Well	1
	Total	6

3.1.4 Observation class D

Meeting 1

In the first observation, there were several utterances produced by students that contained fillers. There were three filler identified in the produced utterances. The samples of utterances containing fillers are as follow.

- *'hummm, one of the most dangerous effect of deforestation is flood'*
- *'you know, people do not really concern their environment'*

The number of fillers from the six produced utterances can be seen in the following table.

Table 7. Fillers used during observation 1 class D

No	Fillers	Frequency
1	Hum	4
2	What is it	1
3	You know	1
	Total	6

Meeting 2

In the second observation in class d, it was found that there were only one filler used by students. The unlexicalized filler 'hummm' was the only used by students. The samples of utterances produced by students are as follow.

- *'hummm, there are two popular sports in Indonesia, they are football and badminton'*
- *'hummm, Taufik Hidayat'*

From the five indicated utterances that contain fillers, the number of fillers can be seen in the following table.

Tabel 8. Fillers used during observation2 class D

No	Fillers	Frequency
1	Humm	5
Total		5

In total, there was a variety of filler use by students during the eight observation in four different class. The number of utterances containing fillers were 146 with six identified fillers. The list of fillers produced by students can be seen in the following table.

Table 9. Filler use during classroom interaction

No	Filler	Frequency	Percentage (%)
1	Humm	39	78
2	I think	2	4
3	You know	6	12
4	Well	2	4
6	What is it	1	2
	Total	50	100

3.2 Interview Result

During the interview, students were given one of five provided structured questions to answer within five minutes. The questions were chosen randomly by students using a lottery. During the interview, their answers were recorded and later transcribed to provide a description of the filler use. The use of fillers of 15 student are as follows.

Table10.Fillers used by students during the interview

No	Fillers	Frequency	Percentage (%)
1	Humm	28	75
2	You know	4	10.8
3	What is it	2	5
4	Well	2	5
5	Like	1	2.7
	Total	37	100

The table above shows the number and percentage of fillers used by students during the lesson. It was found that most students used the unlexicalized filler 'humm' with 28 appearances or 75 percents of the whole filler appearance. The lexicalized filler 'You know' comes next with 4 appearance or 10.8%. 'what is it' and 'well' appear twice or 5% each. The least appearance of 'like' appeared only once or 2.7%.

3.3 Questionnaire Result

Questionnaire is the third instrument used in this research. This instrument is used to investigate students' perception towards filler as well as their strategy in using fillers. The data were collected as follows.

Fillers used by students

The acquired data shows a variety of fillers used by students. It was identified that the unlexicalized fillers of 'Humm' is the most frequent used by students. It can be seen from the result of questionnaire where 78 students opt to use this filler during communication. The lexicalized filler 'you know' is also common to use for students as it has 62 respondents' vote. With 57 respondents, the lexicalized filler 'what is it?' is the third most common used filler. For other fillers as 'well', 'I think' as well as 'i suppose' were chosen by, in sequence, 28, 27, and 21 respondents.

Fillers' roles

Students use fillers for certain objectives. Out of 96 students, 67 students state that fillers are used when they find it difficult to express their thoughts or ideas. 56 respondents use them as they are unable to comprehend what the interlocutors say. The rest 28 students do not give their answers.

Influencing external factors of fillers

There are several external factors why students use fillers. These factors are the ones giving the references for students to communicate. The lecturers become the main model in using filler. 78 respondents chose 'lecturer'. Teachers of high and middle schools also gave a big impact as they were chosen by 69 respondents. The other three models of reference taking role in shaping students' filler use are film, internet and books with respectively 45, 23 and 23.

The advantages of fillers

Most Students assume that fillers give benefits in a verbal communication. 96 students answer 'yes' for the question asking whether fillers offers advantages in communication. The rest 6 students did not give any answers for this. For all 'yes' answers, 72 students stated that fillers help them to give time to think while they are unable to speak the words they intend to. 18 students answer that fillers help making the conversation to be more natural. The rest 6 respondents give no clear reason for their answer.

Students' understanding towards fillers

The majority of students know what fillers are. In this case, students will be likely able to define the term fillers with their own words. It can be seen from the responses

of 96 students. 72 students response that they know what fillers are. The other 18 students answered ‘no’ and six respondents did not give any answer.

Some responses to the term *filler* according to students include:

- *Filler* is the words used to fill the void when we lose the idea while communicating
- *Filler* is the words to fill the time when we are thinking or when we do not know what to talk.

The importance of fillers in a teaching process

The question dealing with the need of filler as a part of teaching process reveal that most students expect to learn about fillers in the classroom. It can be seen from their response as 98 students (98%) state that they need to learn more about fillers while the other 10 students (4%) consider that they are unnecessary to teach.

4.0 DISCUSSION

4.1 Majority of fillers used by students

Students tend to use certain fillers in a communication. As it is known, the most frequent filler used by students is the unlexicalized filler ‘hummm’. The other three common fillers used by students are the lexicalized fillers ‘you know’, ‘what is it?’ and ‘well’.

Filler ‘hummm’ is used due to the simplicity of its filler. In a common communication, a speaker will find himself unable to express any ideas for a second (Arnold et al, 2007). It means that there will be a major possibility that students will use a simple form of fillers as ‘hummm’.

Students refers to certain models in the production of fillers. These models are lecturers, high and middle school teachers and movies. Among those three models, lecturers are considered the most influential. It means that most students immitate lecturers in using a language including producing fillers used by the lecturers. The exposure from the lecturers is quite considerable and intensive dealing with the verbal communication in English especially in the campus area.

Middle and high school teachers also influenced the way students speak especially in using fillers. Just like what happened to lecturers, students engaged in the learning process during a long duration of time. Therefore, students might have also immitated what the their english teachers say during communication.

The other exposure comes from film and internet. Just as technology cannot be separated from human life, the development of students’ language competence is closely related to technology especially film and internet. It is generally known that

students will always use internet or even watch western films which introduce them to the natural language use that covers fillers.

4.2 Students' perceptions towards the use of fillers

Most students assume that fillers are necessary in communication. Fillers are used to create an acceptable verbal communication. In addition, fillers are a deliberate action that emerge as an action to overcome difficulties in using language verbally during a communication.

Students consider that fillers are an important thing in a natural verbal communication. Once people speak, they sometimes require time to produce ideas or thoughts. Fillers serve as a complement to fill the gap during communication. From several definitions drawn from students, it was found that most students define fillers as assisting words in a communication. With this fillers, they can overcome a difficulty as the limitation of vocabulary. Fillers is a discourse marking used by speakers once they encounter hesitation to convey their ideas or thoughts (Erten, 2014).

People commonly use fillers when they find it difficult to express their thoughts and ideas. Students often find a situation where they will be unable to speak their mind in English. For this reason, they will use other words as substitutions while taking a time to think about the right dictions to use. Fillers are used as a connector working to manage a conversation (Clark, 1996; Clark & Fox Tree, 2002).

Fillers are often used to provide an impression of being natural in communication. Students are aware that an appropriate communication does not always mean that it is not without gaps. The existence of fillers during communication will make the communication naturally done. In other words, fillers offer comfort during communication leading to fluency and confidence for those engaging.

Fillers are an important element in verbal communication. Therefore, students realized that fillers are required to teach as a part of teaching in order that students can use them appropriately depending on the contexts. As a result, they can engage in a communication in a more natural way.

5.0 CONCLUSIONS

This research leads to several conclusions dealing with the use of fillers by students in verbal communication. They are:

Students tend to use similar fillers. It was found that most students use the unlexicalized fillers of 'humm' as the main choice in a communication. Students also used the lexicalized filler of 'what is it', 'well' and 'you know' and other types of fillers with less frequency.

Fillers are not unusual for students. They consider filler necessary in verbal communication as they find problems to express their ideas. Fillers are also used when students expect confirmation or repetition for the information they receive. Fillers are also regarded as something natural in communication. This though leads students to use fillers as not only an assisting medium to deliver their ideas but also a support to construct a natural communication for students.

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Chapter 4: Values Development of the Second Principle of Pancasila for the Fourth Grader

Tukiran Taniredja, Muhammad Abduh

The aims of this paper are to discuss: 1) ways of fourth grader teachers in developing values of second principle of Pancasila; 2) constraints faced by fourth grader teachers in developing values of second principle of Pancasila; and 3) solutions to solve the constraints. Data collected by using open questionnaire from the fourth grader teachers as a sources. Data analyzed by data reduction, data display, and data conclusion/drawing/verification. In order to developing values of second principle of Pancasila, the fourth grader teachers should: embedding mutual respect; habituating do good to others; giving good examples; fostering sympathy and empathy, habituating to speak good and honestly. The constraints faced by fourth grader teachers in developing values of the second principle of Pancasila are: students' selfish attitude; lack of parents' awareness; and mass media influences. The solutions to solve those constraints are: giving advices continuously; fostering religion aspects; habituating to give and care each other; and giving good examples.

Keywords: *values of the second principle of Pancasila*

1.0 INTRODUCTION

Since the reformation era in Indonesia, many problems comes out among the community. One of the issue is the tendency to deny Pancasila. As a result, Pancasila as an ideology in the society of Indonesia become marginalized. Morevoer, in this Reform Order Pancasila rarely mentioned with pride, even in the speeches of state officials once (Hamzani, 2015: 156). Whereas, Pancasila is a legacy from the Indonesia Founding Fathers. Latif (2011: 2) stated that Pancasila is a legacy from genius of Nusantara. As a archipelago, the genius Nusantara also reflecting the nature of the oceans. The nature of the oceans is to absorb and to clean, absorb without polluting the environment. The other nature of oceans is able to accommodate all kinds

of diversity. Therefore, Pancasila is an ideology that can accommodate the diversity that exists among people of Indonesia, as mentioned in the second principle of Pancasila.

Second principle of Pancasila states “equitable and civilized humanity”. Equitable and civilized humanity means upholding the values of humanity, love to humanitarian activities, and dare to defend the truth and justice. The second principle of Pancasila philosophically interpreted: respect for all humankind being regardless their ethnics, races, religion and languages; the equal treatment for all humankind based on the level of humanity; and the harmony between rights and obligations. Cowan (2009) stated that the phrase harmony between rights and obligations becomes one key theme of different point of view between political philosophy of liberal citizenship and that of civic republicanism.

Moreover, Pitoyo, et. al (2012: 16-18) said that human beings are equal, then the Indonesian people feel themselves as part of all mankind, because of its developed respect attitude and cooperate with other nations. The second principle of Pancasila requires the state to recognize equal rights and obligations to every Indonesian citizen, and requires the state to treat other human beings in a fair and non-arbitrary manner. Furthermore, the state must guarantee every citizen to obtain the same legal and governmental position, burdening the same obligations in law and government as well. The state shall create an atmosphere of virtuous society in accordance with human dignity and prestige (Effendi, 1995: 39). Nurhadianto (2014: 46) stated ten values of second principle of Pancasila:

1. Recognize and treat human beings according to their dignity and dignity as God's creatures
2. Recognize equality of degree, equality of rights, and fundamental obligations of every human being, without distinction of ethnicity, heredity, religion, belief, gender, social status, skin color and so on
3. Develop a loving attitude among human beings
4. Develop an attitude of mutual tolerance
5. Develop a non-arbitrary attitude towards others
6. Uphold the values of humanity
7. Fond of doing humanitarian activities
8. Dare to defend truth and justice
9. Indonesian people feel themselves as part of all humanity
10. Develop a respectful attitude of respect and cooperation with other nations

Indonesian society is very diverse and multicultural in terms of both culture and belief systems (Hanief & Indrawan, 2017). However, plurality sometimes brings with it the problems and potential conflicts that lead to disunity (Lestari, 2015:31). Many phenomenon in Indonesia are contrary to the values of the second principle of Pancasila. As we know that after the 1998 reform of the Indonesian state were endlessly experiencing various kinds of conflict, such as conflicts between ethnic, among religious, class, and even internally conflicts. In 2015 is still

fresh in the memory of the conflict in Tolikara Papua, which caused dozens of homes and one worship place destroyed (Ihsanuddin, 2015). Another case that arises is the spread of ethnic, religious, and racial issues through online media that can break down the unity of the Indonesian Nation. Recently, there is group of people named Saracen, they spread content of slander and alienation based on tribe, religion and race (Nurdin, 2017). These horizontal conflicts are an indication of the weakening of understanding and practice of the second principle of Pancasila and deny a harmonious life

Based on the values of second principle of Pancasila, as a human being, Indonesian people have to live in harmony. This harmony requires every individual to have an appreciation for the culture of other individuals who live in their community (Lestari, 2015: 32). In other words, people in a pluralistic life have to create a civil society, an ideal society that have a balance perspective between society and government. For Plato, the continuity and strength of any society depend on the education that can help shape future members to its ideal purposes (Cikwe, 2012: 3). In further, Cikwe stated that through education, people are taught the best way to live in harmony with other human beings (Cikwe, 2012: 3). Civic education plays a critical role in building and supporting responsible citizenship in any nation (Cikwe, 2012: 4). Moreover, Civic education is aimed at shaping democratic citizens through internalizing the fundamental principles and values of democracy and supporting the formation of a civil society (Tovmasyan and Thoma, 2008: 16). In other words, it would lead into a harmonious life among citizens.

However, education is not only encouraging cognitive aspect, but there are affective and psychomotor aspects which is often overlooked by teachers. The affective aspect is one that is closely related to the formation of a civil society. Stoller (1999) stated that to maintain a civil society, personal desires and interests often have to be subordinated to the public good. This means that the well being of society must take precedence over the needs of individuals or small groups of individuals. These factors of maintaining civil society is tend to cognitive aspect. Moreover, Cikwe stated that education will have to engage the entire being of the student and make him/her a well-rounded person who is able to live in society with others (Cikwe, 2012: 4).

Building a civil society is a complex task. It requires that individuals, groups of individuals, and governmental institutions make a commitment to tolerance, respect, a willingness to listen and consider new perspectives, openness, honesty, compassion, self-control, understanding, cultural sensitivity, compromise, and participation with the common good of society in mind (Stoller, 1999). One of an ideal civil society-building effort is through civic education. It is expected to form students to have a high social sense as members of the community. Principally, civic education is expected to grant positive impact towards nation citizen characters in dealing with phenomena happened.

Based on the results of the theoretical studies, then this study aims to :

1. explain how to develop the values of the second principle of Pancasila in fourth grader by classroom teachers

2. explain the constraints of fourth grader teachers to develop the values of the second principles of Pancasila
3. explain the solution of the fourth grader teachers to overcome obstacles in developing the values of the second principles of Pancasila.

2.0 MATERIALS AND METHODS

The research method used is descriptive research method with a qualitative approach, which aims to describe what is currently applicable. There are efforts to describe, record, analyze and interpret the conditions that currently occur or exist. In other words descriptive research aims to obtain information or current state, and see the relationship between variables that exists.

This research was conducted in elementary schools in Banyumas Regency, conducted in April until September 2016. The research informants are the fourth grader teachers of Banyumas primary school, presenting at the Table 1.

Table 1. Informants Teachers and schools Name

Name	School
RP	Public Primary School 1 of Bancarkembar
DAP	Public Primary School of Kradenan
LR	Public Primary School of Sidamulih
AS	Public Primary School 4 of Tipar Kidul
TH	Public Primary School 3 of Gandatapa
KKW	Public Primary School of Semingkir Kebasen
KW	Public Primary School of Semingkir Kebasen

Data collection method is using open and in-depth questionnaire method. The type of questionnaire used is an open questionnaire, which uses a set of standard questions. Data analysis in this qualitative research is conducted before entering the field and during the field. Simply analyze the data can be described as the Figure 1.

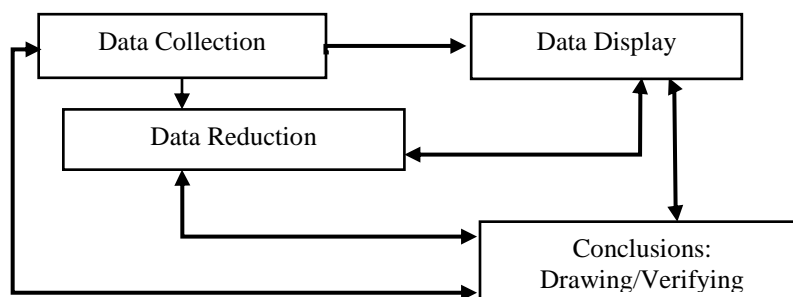


Figure 1. Chart of Miles and Huberman Data Analysis (Sugiyono, 2010)

3.0 RESULTS AND DISCUSSION

There are some results gathered from the teachers involved in this study. The results are separated into three parts: the ways of the teachers developing values of the second principle of Pancasila; the constraints that faced by teachers; and the solution to overcome it.

3.1 Developing Values of the Second Principle of Pancasila

There are ten values of the second principle of Pancasila. Some teachers realize that it is difficult to encourage students in developing values of the second principle of Pancasila. Otherwise they have enough of experiences as a teachers. The efforts to develop values of the second principle of Pancasila are:

- 3.1.1 Efforts to let learners recognize and treat humans according to their dignity as creatures of God Almighty is to familiarize the learners with a sense of gratitude for all the gifts that God gives us and instill a sense of appreciation when at home, in school, and in the community environment. In addition, learners are familiarized for mutual respect and respect for others with different faiths and upholds equality of rights that are principled on the principle of tolerance, and by creating mutual respect for others in various respects.
- 3.1.2 Efforts to enable students' equality recognizing, equality of rights and basic obligations of every human being without distinction of race, heredity, religion, belief, group type, social standing, color and so on is to provide equal opportunities in any opportunity to develop knowledge And provide insight to learners that we live in Indonesia Country based on Pancasila where our society is a plural society. In camping it familiarizes learners to respect differences and treat learners fairly and proportionally do not undermine the minority and understand the learners about Equality of human position in the eyes of God.
- 3.1.3 Effort to encourage mutual love for their fellow human beings is to familiarize their friends with learning difficulties, to nurture learners' habits of caring for friends and the environment (eg. visiting sick friends, gathering aid for disaster victims, Sympathy and empathy, invites children to visit if the theme is sick and instills a caring race for the troubled peer.
- 3.1.4 Effort to encourage tolerance is to familiarize cooperation with friends, greet an older person and say hello, make the children appreciate the opinions of others, and respect the different tribal friends and not picky friends, forgive friends' mistakes.

- 3.1.5 Effort to encourage an arbitrary attitude toward others is to instill the notion that acting arbitrarily against others, disparaging and offensive others is bad and the deserts give good, for example, not getting angry with learners.
- 3.1.6 Effort to encourage the value of humanity is to model peers in any way, and set an example of mutual respect for others and foster a sense of help.
- 3.1.7 Efforts to make the students fond of doing humanitarian activities is to familiarize the students with social activities, and to familiarize the students to do good deeds and participate in humanitarian savings, and visit friends who are sick, and invite learners to visit victims of natural disasters.
- 3.1.8 Efforts to make students brave to defend truth and justice, warning dishonest friends while doing the task, and make a clear class rules in order to avoid discrimination, modeling the traits of the heroes , and giving praise to learners who doing justice.
- 3.1.9 Efforts to realize that the Indonesian people feel themselves as part of all human beings by way of awareness that human beings of social need each other, please-help in the nation and state instilled awareness that we can achieve the nation's name, and provide examples of exports and imports Goods, and student exchange.

3.2 Constraints in Developing Values of the Second Principle of Pancasila

The Obstacles when teachers developing the values of the second principles of Pancasila are: students' selfish attitude; parents are less concerned about the students; students' low awareness of the sense of humanity; and the influence from the environment and the media.

3.3 Solutions to Overcome the Constraints

The solutions to solve the obstacles is teachers have to patient and diligent when giving advises to the learners; develop a cooperation with students' parents; familiarize the students to share each other; instill mutual respect among students; and set a good example.

One of the concerns that occurred in our country, that since the roll of reform in our country, there are some perceived concern about the meaning of Pancasila for the nation and the State of Indonesia. Historically Pancasila in its position as the philosophical foundation of the state and ideology of the nation and state, is not an ideology that dominates the nation; instead, the values of each principle of Pancasila are inherent in and originally from Indonesia (Nurdin, 2015: 201) One of them is Pancasila as the ideology of society, nation, and state. Effendi (2006: 2) also states that since the reform movement was rolled out from campuses in the country, it

appears that there is a tendency to deny Pancasila as an ideology in our national and state life. Pancasila becomes marginalized. In official speeches, officials become phobia and ashamed to pronounce Pancasila. Some of Schoolchildren no longer familiar with the points of Pancasila, moreover the values of it. Even the campuses that in fact are full of intellectuals also develop a tendency to deny Pancasila. These conditions become the responsibility of Indonesian citizenship.

The values of Pancasila should be cultivated to all Indonesian people as early as possible through formal education, including one of which is the value of the second principle. In primary school, Pancasila and Civic Education aims to Cultivate daily attitudes and behavior based on Pancasila values, both as individuals and community members (Departmen Pendidikan dan Kebudayaan, 1993: 1), including the values of the second principle of Pancasila. Developing of values of the second principle of Pancasila to the fourth graders through elementary school should be instilled mutual respect and appreciation, learners get used to do good to others, give a good exemplary, and grow sympathy and empathy, and get used to say good and right. The efforts to cultivate these values is to reduce future conflicts among Indonesians and other countries. As Hanief (2017) said that in the ideology of Pancasila has clarified the meaning of the differences and unify the diversity that exists with the purpose of unity to progress together but the selfishness and lack of understanding of the basic state itself is rated even lead to frequent conflicts

The first obstacles during the cultivating values of the second principle of Pancasila is most of the students are still selfish, lack of parental awareness of their children's development. The second is the negative influence of mass media. These two obstacles empashize the importance of the teacher's roles. Teachers have the obligation to ensure the cultivation of values of Pancasila runs well.

Based on the analysis of research data, it can be concluded that to develop the values of the second principle of Pancasila into fourth graders are: elementary school needs to instill mutual respect, learners also get accustomed to do good to others, give exemplary, and cultivated sympathy and empathy. Obstacles in developing values of the second principle of Pancasila students into fourth graders are: students mostly still being selfish, still lack of concern from parents about the development of their children, and the negative influence of mass media. The Solution to overcome the problems in developing values of the second principle of Pancasila are: teacher have to patiently and diligently advise learners, building cooperation with students' parents, and set a good example for their students.

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**POVERTY ALLEVIATION BASED ON LOCAL RESOURCES,
ENTREPRENEURSHIP, RURAL AND SHORE AREA MANAGEMENT
BASED ON LOCAL WISDOM**

Chapter 5: The Strategy of *Kelompok Sadar Wisata* to Develop Tourism Sector in Tanjung Pinang

Ignatius Agung Satyawan, Budiarjo, Son Haji, Widodo Muktiyo

*Tourism is one of priority sector in the Medium Development Plan of Indonesia in 2015-2019. This sector was targeted to get US\$ 20 billion for foreign exchange with 20 million foreign visitors. This target is also facilitated by the on-going ASEAN Economic Community which the movement of goods, services and people is freer. Tanjung Pinang as the capital of Riau Islands Province located in the border area with Malaysia and Singapore has an opportunity to get benefit from this sector. It is noted, tourism destination in Tanjung Pinang is based on history and Malay culture which is in line with its people's life. Therefore, Community-Based Tourism approach is undertaken through the creation of *Kelompok Sadar Wisata* (Tourism Awareness Group) or abbreviated with *Pokdarwis*. This paper discusses the efforts taken by *Pokdarwis* in Tanjung Pinang, especially *Pokdarwisin Penyengat Island* to attract both domestic and foreign tourist to visit this destination. It is found that the *Pokdarwis* has developed various strategies by co-operating with the government to conduct international events as well as using Information Communication Technology to increase tourism branding.*

Keywords: *Kelompok Sadar Wisata, Tourism Sector, Tanjung Pinang, ASEAN Economic Community*

1.0 INTRODUCTION

Tourism nowadays has become a leading sector in increasing prosperity of the people, especially in developing countries. Moreover, tourism sector is the largest industry in the world with an average growth of 7.4% per year and the highest growth is found in the East Asia and Pacific region with a growth rate of 14.7% (Sally, 2010). Meanwhile, Amin and Ibrahim (2016) noted that in 1990, international tourist arrival amounted to 438 million and became 940 million in 2010 or increased 114.6%. Data taken from the United Nations World Tourism Organization

shows that the contribution of tourism sector to the world's GDP is big enough, it is amount of 9% (Kemenpar, 2015).

The picture of world tourism also reflects in Indonesian tourism sector. At the national level during 2010-14, Indonesia's tourism has managed to contribute 4% to GDP and is ranked 4th as a source of foreign exchange after oil and gas, coal and oil palm. Similarly, both domestic and foreign tourists always increase. In 2013, domestic tourist arrivals grew by 1.9% or 250 million people, while foreign tourist arrivals grew by 7.2% or 8,802,129 people (Kemenpar, 2015). In 2019, the target of Ministry of Tourism can be seen at the Table 1.

Table 1. Target of Visitors and Foreign Exchange Rate

Indicator	2014	2015	2016	2019
Foreign visitor (person)	9.3 million	11.2 million	13 million	20.0 million
Domestic visitor (person)	251 million	259 million	263 million	275 million
Foreign exchange (US\$)	10.69 billion	12.5 billion	14.13 billion	20 billion

Source: BAPPENAS, 2014, p. 186

Tanjung Pinang as the capital of Riau Islands Province adjacent to Malaysia and Singapore has the potential and opportunity to pull foreign tourists from neighboring countries. Moreover, ASEAN member countries have been bound to be ASEAN Economic Community that is open to the flow of goods, services and persons.

This article analyzes the efforts of the Government of Tanjung Pinang to develop tourism sector through the *Kelompok Sadar Wisata* (Aware Tourism Group) abbreviated with *Podarwisas* well as the strategy of *Pokdarwis* in promoting and managing tourism in its region. After the introduction, this article consists of three sections. The first section explains materials and methods in conducting research. This section includes theoretical framework and objectives of the research. Second section describes result and discussion and the last section is conclusion.

2.0 MATERIALS AND METHODS

This article is a study of tourism practitioners at the grass-root level of community named *Pokdarwis*. It will describe the strategy taken by *Pokdarwis* in Tanjung Pinang to develop tourism sector especially in promoting its destinations. Special attention will be given to the effort of *Pokdarwis* in Penyengat Islands as a success story in promoting and maintaining the island as a unique destination for domestic and foreign tourist.

2.1 Data Collection

This article based on research with descriptive qualitative method because its aim is only describe of certain phenomena. Main data and information are collected through library research, interview with tourism stakeholders of Tanjung Pinang and focus group discussion with members of *Pokdarwis*. The data and information were collected in October 2016 and are validated by practicing triangulation technique, particularly by using sources' triangulation. Interactive model is applied on data analysis which conclusion is draw from collecting, reducing and displaying data (Miles and Huberman, 1994).

2.2 Theoretical Framework

In developing countries, tourism industry has been used as a strategy to boost economic growth and to reduce poverty. However, managing tourism industry is not simple because it involves many parties, especially the government, tourism practitioners, and society. Society that get benefit from this sector, determines the success of tourism industry. Therefore, the involvement of people in the tourism industry becomes very important to do. Community-based tourism becomes the decisive element to maximize the benefits of the tourism sector for the community. In tourism literature, community-based tourism is defined as: "tourism activities in which local communities participate, occurring on their lands, and scaffolding on their cultural heritage and natural attractions and assets" (Giampiccoli & Mtapuri, 2012,). So, with community-based tourism approach, people can control and manage the enterprise as well as tourism assets that belong to them or it located around their residence. (Giampiccoli, 2010).

To realize public participation in the tourism industry, it is necessary to create a conscious tourism community that accommodates the participation and support of the whole components of society in promoting and creating of a conducive climate for the growth and development of tourism in a destination or region (Kemenparekraf, 2012). The conscious community is expected to be the pioneer of the realization of *Sapta Pesona Pariwisata* (seven tourism fascination) namely: safety, orderly, clean, mild, beauty, friendly and memorable. To realize this tourism-conscious community, it is necessary to establish Aware Tourism Groups (*Kelompok Sadar Wisata*, or *Pokdarwis*). According to Kemenparekraf (2012), *Pokdarwis* is a "community-level institution whose members consist of tourism activists that have caring and responsibility as well as role for driving force in supporting the creation of a conducive climate for the growth and development of tourism and the realization of *Sapta Pesona Pariwisata* in improving regional development through tourism industry and utilize for the welfare of the surrounding community". As a self-help

and self-supporting group in community, *Pokdarwis* has an obligation to improve understanding of tourism, increase community role and participation in tourism development, and preserve the value of tourism benefits for the community.

As the back-bone of tourism activity in the grass-root level, *Pokdarwis* was formed in the sub-district and acted as a cadre to develop tourism in the region. It is also fostered and cultivated by the government so that its members can improve their skill and professionalism in the field of tourism.

Pokdarwis in Tanjung Pinang was established based on sub-district area so that each sub-district had at least one *Pokdarwis*. The *Pokdarwis* is something new institution because it was founded two years ago. It is in line with the formation of new province of Riau Islands.

2.3 Objectives

The objectives of this article are as follows: The first is describing tourism in Riau Island Province locating at the outer of Indonesia and bordering with Malaysia and Singapore. The second is analyzing tourism development through community-based approach in Tanjung Pinang city by establishing Aware Tourism Groups (*Pokdarwis*). The third is explaining *Pokdarwis* in Penyengat Island as the former Malay-Lingga Kingdom to develop strategies in inviting tourists.

3.0 RESULTS AND DISCUSSION

This section has two sub-sections. The first sub-section discusses tourism in Riau Islands Province as well as in Tanjung Pinang city. The next sub-section explains tourism in Penyengat Island.

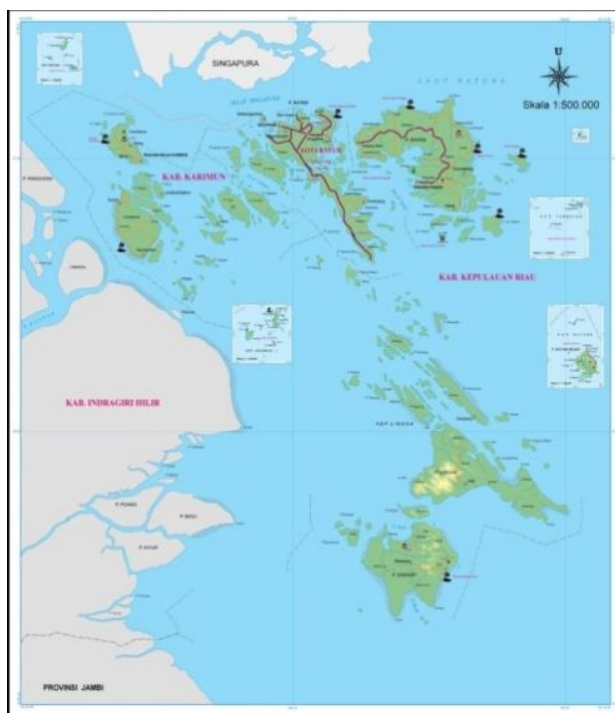
3.1 Tourism in Riau Islands Province and Tanjung Pinang

On national scale, tourism sector of Riau Islands Province is ranked third after Jakarta and Bali. In other words, tourism sector will become the mainstay of Riau Islands Province in obtaining foreign exchange and other benefits. The amount of foreign visitors in Riau Islands from January to April 2017 was 650.617, increased 1,55% in the same period in last year. The highest rank foreign visitors came from Singapore (49,86%) and Malaysia (12,39%) (*BPS Provinsi Kepulauan Riau, 2017*). It is not surprisingly because Tanjung Pinang is situated in strategic area as shows at figure 1.

Riau Islands Province, a new province of Indonesia established in 2002, has a fascination for foreign tourists because of its unique position that is located in the outer position of Indonesia and bordered by several neighboring countries namely Malaysia and Singapore. In addition, the Riau Islands has a variety of natural objects

that can be used as an international tourist attraction. The tourism sector has become one of the large incomes for local government.

Riau Islands is rich with natural objects of tourism. Bintan Island for example, has a natural beauty, such as Trikora and Lagoi Beach with white sand, blue sea water and dense of trees. Along the road in the city of Tanjung Pinang, it is also encountered with natural scenery and beautiful sea. Many tourists who come in Riau Islands are doing outdoor activities such as sports, snorkeling and diving.



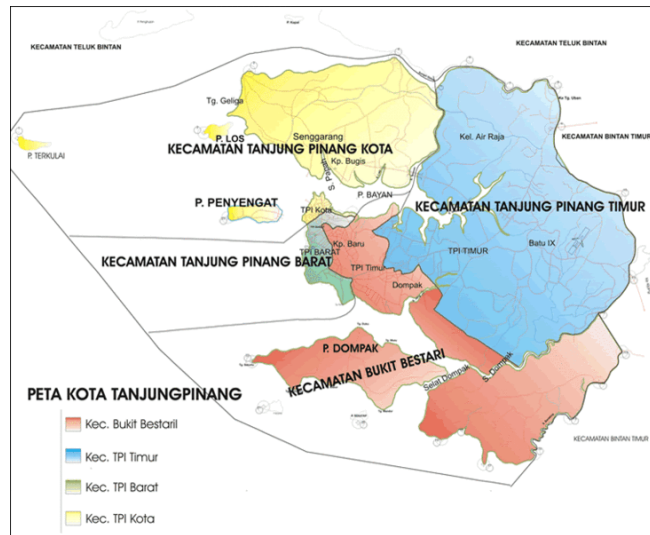
Source: <http://www.big.go.id/peta-provinsi/>

Figure 1. Map of Riau Islands Province

Tourism in the city of Tanjung Pinang has advantages that need to be managed seriously from all elements of government and private parties. The potency of Tanjung Pinang tourism is in historical, religious and culinary. As a former center of the Malay-Lingga Kingdom, of course, Tanjung Pinang has historical relics of the past scattered in several areas of the city, especially in Penyengat Island. This island has been designated as a National Cultural Heritage and is able to invite the arrival of both foreign and domestic tourists.

Foreign tourists visiting Tanjung Pinang in 2015 amounted to 90,390. Due to the global economic downturn, this number is less if compared to 2014 as much as 98,098 (Pristiwasa & Agustinus, 2017). Foreign tourists are coming to Tanjung

Pinang dominated by tourists from Singapore, Malaysia and the Philippines. These countries are located relatively close to the city. They usually visit at week-end only. Figure 2 shows a map of Tanjung Pinang city.



Source: <http://petalengkap.blogspot.co.id/2015/06/peta-kota-tanjung-pinang-kepulauan-riau.html>

Figure 2. Map of Tanjung Pinang

In addition, Tanjung Pinang also has a prominent culinary tourism, especially the diversity of food from local to outside such as China and India. Currently Tanjung Pinang is developing a food icon that is gonggong, a kind of shell that only lives on the coast of Tanjung Pinang. This gonggong became an icon of Tanjung Pinang city. The location of this culinary tour spread throughout the city of Tanjung Pinang. Figure 3 depicts land mark building look-likes gonggong in Tanjung Pinang.



Source: <http://surabaya.tribunnews.com/2016/11/03/merayakan-kelahiran-gonggong-ikon-baru-pariwisata-kepri>

Figure 3. Landmark Building of Tanjung Pinang

3.2 Tourism in Penyengat Island

Penyengat Island is a small island with a length of 2,000 meters and a width of 850 meters located 2 kilometers from the town of Tanjung Pinang. Formerly, this island is the capital of the Malay-Lingga Kingdom. Relics on this island include: the Great Mosque of Sultan Riau, palace, traditional house of Malay, the tomb of the royal family and the fortress. It is also believed that Penyengat Island was the cradle of Malay lingua franca. The picture of Penyengat Island can be seen at figure 4.



Source: <https://esont.files.wordpress.com/2011/09/hl-masjid-penyengat-dengan-empat-pilarnya-yang-khas.jpg>

Figure 4. Penyengat Island

The population of Penyengat Island is 2,621 consisting of 1,316 men and 1,305 women. They consist of Malayethnic as majority, Javanese, Batak, Minangkabau, Aceh and several other ethnic groups (Pristiwasa&Agustinus, 2017). Although different ethnic groups, they are living in harmonious and caring for each other.

Considering the richness of the heritage, Pokdarwis in Penyengat Island which was nominated for the best 25th in Indonesia, utilizes them to attract tourists to visit the island through several strategies. Mostly, the strategies are related to well-known historical relics. The first strategy is providing maximum services when the tourists arrive to the island. It includes provide transportation so the tourist can go from one place to other place easily. Transportation tool is quite unique that is three-cycle motor equipped with local ornaments. Sometimes, though still in amateur level, the drivers double as tour guide. They already know which places should be visited by the tourists.

The Second strategy is co-operating with local people to establish souvenir shops and food stalls which sell local handicrafts as well as local food. This is done to bring the memories that the tourists have visited Penyengat Island.

The third strategy is tourism promotion of Penyengat Island as an important place to be visited. Considering with limited budget and unskilled of information communication technology, *Pokdarwis* then cooperates with the government office of Culture and Tourism, both at the level of province and the City of Tanjung Pinang. The content of Penyengat Island as a tourism destination is inserted to the promotion carried out by the government. It was conducted through mass media, websites, billboards, and brochures. Moreover, tourism events with international and national scope in Tanjung Pinang were partly held on Penyengat Island (Simbara, 2013). These events include: Dragon Boat Race, Kano Kayak Competition and swimming contest in the sea from Tanjung Pinang to the Penyengat Island.

Although various strategies have been done, there are some things that still need to be considered. First, it is hospitality aspect. Tourism is hospitality industry, so the energy of hospitality should be spread to the community surrounding the destination area. The second aspect is the availability of professional tourist guide. It is worth noting because more and more foreign tourists visit the Penyengat Island but imbalance with the number of tourist guide. Tourist guides who can speak various foreign languages and understand Malay history are urgently needed.

4.0 CONCLUSION

Indonesia has a rich of natural and historical heritage that can be developed into tourism industry. This industry in the period of 2015-2019 is targeted to become a source of foreign exchange. Each province and city including Riau Islands and Tanjung Pinang are expected to contribute to the development of tourism in Indonesia

Various strategies have been done by involving all tourism stakeholders, especially the community component by forming of *Pokdarwis*. Tanjung Pinang tourism development in Penyengat Island was done through community-based. Although it has been implemented with various strategies, it still needs to pay attention of the two very important things in the tourism industry, these are hospitality aspect and capability of tourist guide.

5.0 ACKNOWLEDGEMENT

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Chapter 6: Services Quality Analysis in Effort of Patient Satisfaction Improvement on Primary Healthcare

Herni Justiana Astuti, Tri Septin Muji Rahayu, Muchammad Agung Miftahuddin

Patient satisfaction can be influenced by the quality of health services provided, where the quality of health services for patients means reliability, assurance, tangibles, empathy, responsiveness to their needs, in this case the needs of services provided by health workers. Sometimes service providers are less able to interpret what their customers expect so that a gap appears. Something that the patient thinks is important in feeling the service but according to the health care provider is less important or even excessive. There are three purposes of this research are: (1) Measuring the level of satisfaction that has been implemented by primary healthcare, (2) Mapping the attributes that the primary healthcare must maintain in order to retain satisfied, (3) Mapping the attributes that the primary healthcare should prioritize so as to minimize the gap between service providers and patient expectations for patients whose care is funded by The Social Security Administrator Board or others. The results showed that patient satisfaction level was in high satisfaction criterion (80,8%), service schedule must be executed appropriately (doctor's visit, treatment, rest period) is a factor that must be prioritized because it included the element of service which is considered very important, healthcare has not been done as the patient wishes, and there are differences in outpatient satisfaction based on payment.

Keywords: *Patient Satisfaction, Primary Healthcare, Treatment Financing*

1.0 INTRODUCTION

Health is a fundamental right of every individual and all citizens are entitled to access to health services including the poor. Development in the health sector is part of national

development. Therefore, it is necessary to have a controlled health in terms of cost and quality. Furthermore, the government as the highest agency responsible for maintenance must also fulfill the obligation in the implementation of the provision of health service facilities. Law number 36 Year 2009 on Health (RI, 2009) stipulates that everyone is entitled to health services.

One of the development efforts in the health sector is the improvement of outpatient service quality in primary health facilities such as clinics and *puskesmas* (community health centers). In accepting and servicing outpatients with multiple characteristics, primary health facilities must complement themselves in order to always listen to the voice of the consumer, and have the ability to respond to every desire, consumer expectation and the demands of users of health service facilities. This is closely related to the health personnel who always accompany and serve the patient as a consumer.

The quality of service provided by the service provider generally has a purpose to satisfy the patient (Besciu, 2015). However, sometimes there is a gap in interpreting the expectations that patients want. The satisfaction of health care users is closely linked to the results of health services, both medically and non-medically, such as adherence to treatment, understanding of medical information and continuity of care (Kotler, 2003). Satisfaction begins with patient acceptance until the patient leaves the clinic or community health center. Meanwhile, according to Kotler (2003) that satisfaction will be achieved if there is a match between expectations and performance, if service performance is less than expected will cause dissatisfaction. This can happen because healthcare providers consider an important service to the patient but the patient considers it to be less important, resulting in a mismatch in service expectations and performance (Astuti, 2007).

Patient satisfaction can be influenced by the quality of health services provided (Liew and Gardner, 2014; Naidu, 2007), where the quality of health services for patients means empathy, respect and responsiveness to their needs, in this case the needs of services provided by health personnels. In general, patients who are not satisfied will complain. Complaints that are not immediately addressed will result in a decrease in patient satisfaction with the capability of health services, because poor service will cause a bad image. Dissatisfied patients will give negative recommendations by word of mouth, thus affecting the attitudes and beliefs of others not to visit the facility (Tjiptono, 2005). This may cause the patient to move to another place (Astuti and Nagase, 2014a; Astuti and Nagase, 2016). On the other hand satisfied patients will have a high sense of trust and will not move elsewhere, and even promote the place to relatives or friends, prospective other patients to check health at primary health care level. Satisfied patients can also induce them to be loyal (Astuti and Nagase, 2014a; Astuti and Nagase, 2014b).

Patient as a consumer has a uniqueness that is not owned by consumers in general, because they come treated under pressure and feel the discomfort due to illness he suffered (Baird, 2013). They have an unfavorable position to assess the quality of care provided by physicians, nurses and healthcare workers, especially for those who have the inadequacy of

choosing primary health care due to their limited medical funding, such as government insurance (Astuti and Nagase, 2016). Is there a difference in the quality of service for patients who seek treatment because the source of financing comes from government health insurance (BPJS / Social Security Administering Body) or self-patient (Non-BPJS). Participants of BPJS consist of the contribution participants who consist of poor and disadvantaged, and participants of the transition of ASKES and Jamsostek (RI, 2011).

From the description of the problem statement that occurs, the research problem to test the patient's satisfaction empirically five-dimensional measure of service quality model service quality (SERVQUAL) and Cartesius diagram, consisting of reliability, responsiveness, assurance, tangibles, and empathy. And whether there is a difference in the level of satisfaction between patients who seek treatment using BPJS and non-BPJS funding.

2.0 RESEARCH METHODS

2.1 Samples

The sample method used is purposive, where the samples taken are those who perform health care at UMP clinic, Puskesmas Purwokerto Timur, Puskesmas Kembaran with funding BPJS or non BPJS. Patients who are the respondents are those who are willing only.

2.2 Dimensions and Attributes

Service quality dimensions in the SERVQUAL model are based on multi-item scales designed to measure customer expectations and perceptions, and the gap between them in service quality dimensions. Initially Parasuraman et al (1985) identified ten principal dimensions with 22 variables related to service and then analyzed using factor analysis. It turns out that some criteria are used in assessing the quality of service. These criteria include 10 complementary potential dimensions of tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding and access. Then in subsequent research Parasuraman et al in 1988 refine the dimension and then processed again so that eventually simplified into 5 dimensions. Parasuraman, Berry and Zeithaml, 1990 (Kotler, 2003) developed the conceptual model of service quality. They formulate a quality service model that highlights key requirements in order to present the quality of service desired.

Measurement of service quality in Primary Healthcare using dimensions and attributes as listed in Table 1.

2.3 Research stages

First stage, Measuring service quality based on 5 dimensions analyzed with Importance Performance Analysis using Cartesius diagram. To illustrate the average

level of satisfaction of respondents who received outpatient services at clinics and community health centers by comparing the average level of patient's level of expectation on outpatient service with the average level of service performance / Importance Performance Analysis (Supranto , 2010). In this study, Likert scale is used with five levels of assessment consisting of very important, important, important enough, less important, and not important.

Based on research result of importance level and result of satisfaction research hence will produce a calculation about level of match between level of importance (expectation) of customer and level of service execution. The level of conformity is the result of comparison between performance scores / service execution with customer interest (expectation) score. This will determine the order of priority of increasing factors affecting patient satisfaction. In this study there are two variables represented by the letters X and Y, where X is the level of performance that can provide a picture of patient satisfaction, while Y is the level of expectations of patients.

Table 1. Dimensions and attributes

No	Dimensions	Attributes
1	<i>Tangibles</i>	<ol style="list-style-type: none"> 1. Cleanliness, neatness, and comfort of the room. 2. The arrangement of the exterior and interior of the room. 3. Tidiness and cleanliness of health personnel appearance. 4. Cleanliness, tidiness, and comfort of the room
2	<i>Reliability</i>	<ol style="list-style-type: none"> 1. The ability of doctors and nurses to quickly respond to resolve patient complaints. 2. Procedure Acceptance of patients quickly and precisely. 3. Fast and accurate examination and treatment services 4. Hospital service schedule is carried out appropriately (doctor's visit, treatment, rest period)
3	<i>Responsiveness</i>	<ol style="list-style-type: none"> 1. Long time queuing up. 2. Officers have the ability to provide clear and easy-to-understand information. 3. Service Time Speed. 4. The ability of service providers (doctors, nurses, and staff) is serious about helping patients. 5. The ability of doctors and nurses to respond quickly to help patients whenever needed
4	<i>Assurance</i>	<ol style="list-style-type: none"> 1. Knowledge and ability of doctors to establish disease diagnosis. 2. Security guarantee of service and trust of service. 3. Service providers (doctors, nurses, and staff) are friendly in serving patients. 4. The ability of providers (doctors, nurses, and staff) to answer patient questions.
5	<i>Empathy</i>	<ol style="list-style-type: none"> 1. Give special attention to each patient.

Table 1. (cont.)

		2. Services provided to patients in accordance with existing procedures.
		3. Service providers (doctors, nurses, and staff) have the ability to provide additional time if patients need it.
		4. Service to all patients regardless of social status and others.
		5. Doctors, nurses, and staff are willing to accept patient complaints and suggestions, if not appropriate
6	Patient Satisfaction	Patient satisfaction is obtained by calculating the level of conformity, which is obtained by comparing the performance level (reality) and the level of interest (expectation) of each attribute of dimension: tangible, reliability, responsiveness, assurance, and empathy.

Source: Adapted from Parasuraman et. al. (1988)

Furthermore the level of these elements will be split into four parts into Cartesius diagram.

Second stage, Measuring service quality based on 5 dimensions analyzed by using average difference test based on comparison of BPJS and non-BPJS patients. Tests on this research used statistical test tools independent sample t-test. The use of this method is because to test two unrelated samples having different mean values, an independent sample t-test using the Mann Whitney tests.

3.0 RESULTS AND DISCUSSION

3.1 Results

Questionnaires have been distributed to selected respondents. Data analysis was obtained from 174 respondents' answers, divided into 73 respondents from BPJS funding and 101 from non-BPJS funding.

All items of the performance statement in the questionnaire are valid, so is the reliability. It can be said that all statements can be used as research instruments and dimensional measurements can yield relatively consistent results, respectively.

Table 2. Calculation of Patient Compliance Level

Attributes	Performances			Expectations			Level Compliance (%)	Criteria*
	Xi	n	average	Yi	n	average		
1	651	174	3.74	807	174	4.64	0.81	High Satisfaction
2	610	174	3.51	732	174	4.21	0.83	High Satisfaction
3	630	174	3.62	782	174	4.49	0.81	High Satisfaction
4	631	174	3.63	775	174	4.45	0.82	High Satisfaction
5	655	174	3.76	845	174	4.86	0.77	Medium Satisfaction

Table 2. (cont.)

6	654	174	3.76	808	174	4.64	0.81	High Satisfaction
7	653	174	3.75	815	174	4.68	0.80	High Satisfaction
8	635	174	3.65	804	174	4.62	0.79	Medium Satisfaction
9	614	174	3.53	746	174	4.29	0.82	High Satisfaction
10	618	174	3.55	748	174	4.30	0.83	High Satisfaction
11	641	174	3.68	789	174	4.53	0.81	High Satisfaction
12	647	174	3.72	809	174	4.65	0.80	High Satisfaction
13	647	174	3.72	795	174	4.57	0.81	High Satisfaction
14	642	174	3.69	791	174	4.55	0.81	High Satisfaction
15	646	174	3.71	793	174	4.56	0.81	High Satisfaction
16	649	174	3.73	799	174	4.59	0.81	High Satisfaction
17	650	174	3.74	799	174	4.59	0.81	High Satisfaction
18	638	174	3.67	781	174	4.49	0.82	High Satisfaction
19	623	174	3.58	781	174	4.49	0.80	High Satisfaction
20	634	174	3.64	781	174	4.49	0.81	High Satisfaction
21	643	174	3.70	805	174	4.63	0.80	High Satisfaction
22	645	174	3.71	800	174	4.60	0.81	High Satisfaction
Jml	14056		80.79	17385		99.91	17.79	
Rata2			3.67			4.54	0.808	

* Source : Steer (1993) in Astuti (2007)

Table 2 illustrates the calculation of patient compliance level, which contains a comparison between performances and expectation. Based on **table 2** it can be seen that almost all attributes represent high satisfaction criteria except attributes 5 and 8 which state the criteria of medium satisfaction. Attribute No. 5: The ability of doctors and nurses to quickly respond to complaints of patients while attribute 8 is the schedule of hospital services runs properly (doctor's visit, treatment, rest). Although both attributes are in medium satisfaction criteria but their conformity values are close to high.

Table 3 Results of calculation of IPA analysis

Dimensions/ Attributes	Average Scores		Quadrant
	Performance	Expectation	
Reliability			
1	3.74	4.64	B
2	3.51	4.21	C
3	3.62	4.49	C
4	3.63	4.45	C
Reliability			
5	3.76	4.86	B

Table 3. (cont.)

6	3.76	4.64	B
7	3.75	4.68	B
8	3.65	4.62	A
<i>Responsiveness</i>			
9	3.53	4.29	C
10	3.55	4.30	C
11	3.68	4.53	D
12	3.72	4.65	B
13	3.72	4.57	B
<i>Assurance</i>			
14	3.69	4.55	B
15	3.71	4.56	B
16	3.73	4.59	B
17	3.74	4.59	B
<i>Emphaty</i>			
18	3.67	4.49	C
19	3.58	4.49	C
20	3.64	4.49	C
21	3.70	4.63	B
22	3.71	4.60	B

Table 3 contains the results of calculation of IPA analysis, comparing the comparison of average performance with expectation that can ultimately provide information about the dimensions or attributes in Cartesius diagram (See Table 2 and figure 1).

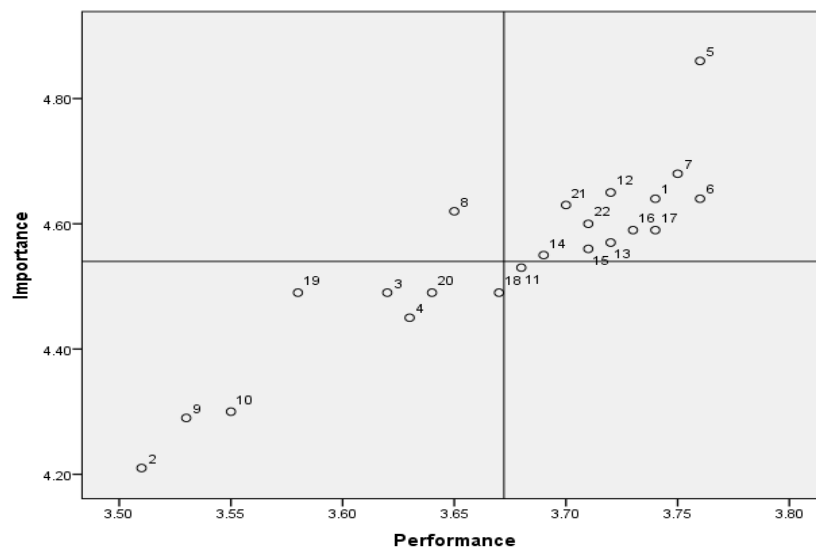


Figure 1. Results of Cartesius Diagram

Figure 1 illustrates the results of Cartesius Diagram, as a reflection of respondents' answers about the quality of services consisting of four quadrants.

Tests in this study used Mann Whitney test.

Table 4. Statistical test results using Mann-Whitney test

Test Statistics^a	
	Comfirmity
Mann-Whitney U	35.000
Wilcoxon W	288.000
Z	-4.878
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: funding

Table 4 illustrates statistical test results using the Mann-Whitney test, which is used to measure differences in the quality of services based on the financing. Based on table 4 it can be seen that Asymp.Sig. (2-tailed) has a value of 0.000, so it can be concluded that H_0 is rejected and accept H_a that there are differences in outpatient satisfaction between patients BPJS and Non BPJS in primary health care.

3.2 Discussion

Patients will feel satisfied if there is a similarity between expectations and reality (performance) of health services obtained. Satisfaction begins with patient acceptance until the patient leaves the clinic or community health center. Based on the above table, the average value of conformity between performance and patient expectation is 0,808 or 80.8%. According to Steer (1993) in Astuti (2007) states that the criterion of satisfaction rate value is high satisfaction (80 - 100). Although the level of patient satisfaction treatment to the primary level health care at the level of high satisfaction, but when viewed from the score of conformity close to the level of satisfaction or high satisfaction of the bottom. Although the level of patient satisfaction treatment to the primary level health care at the level of high satisfaction, but when viewed from the score of conformity close to the level of satisfaction or high satisfaction of the bottom.

Relation of reliability to patient satisfaction that is patient satisfied because get the best service, get service which she expect which make patient feel satisfied, and servant to patient done in accordance with standard operational procedure.

The relationship of assurance to patient satisfaction is that patients will be satisfied and amazed by their employees' ability of knowledge and patients will be satisfied with the decency of their employees and their ability to generate trust and confidence. The relationship of tangibles (appearance) to the satisfaction of patients

that consumers will feel comfortable in the clinic or community health center because the place according to Standard Operating Procedures, neat and clean (spatial is not messy), and the area of patient care can serve well.

The relationship responsiveness (response) to patient satisfaction that patients will feel satisfied if the clinic staff or health center is always alert to serve the patient, can always help patients when experiencing difficulties in the clinic or community health center, and try as much as possible to make patients feel comfortable and feel satisfied.

The relationship of empathy to patient satisfaction that is patient will be satisfied if the clinic employee or health center have caring and respond to patient, always try to understand the condition of patient and always listen to complaints from the patient. Based on Table 3 and Figure 1 can be seen attributes that enter in quadrant A is Schedule service executed appropriately (doctor visit, care, rest) or attribute no.8. Quadrant A is to show the factors or attributes that are considered to affect patient satisfaction, including elements of services that are considered very important, but the hospital has not been carried out according to the wishes of the patient. So disappointing or dissatisfied. According to patients who are treated at primary health care, they feel that the service schedule (doctor's visit, treatment, rest) is inappropriate, resulting in an assessment of the appropriateness of health service performance less than patient expectations. While based on the average level of conformity performance and expectations show attributes 5 and 8 enter the criteria of medium satisfaction.

Participants of BPJS consist of contribution participants (PBI) consisting of the poor and disadvantaged, and non-PBI groups or participants of the transition of ASKES and Jamsostek (RI, 2011). Communities as users of health care services expect maximum health services, in this case the quality of decent health services expected by the community. Primary health care must act fairly in handling BPJS and Non BPJS patients. The result is that there are differences in outpatient satisfaction between BPJS and Non BPJS patients in primary health care.

4.0 CONCLUSIONS

- 4.1 The level of customer satisfaction on service in outpatient primary care is high; the average value of the level of conformity between the service performances of the basic level with the patient's expectation is 80.8%. The value is on the high satisfaction criteria.
- 4.2 Factors that must be prioritized in order to meet the patient's expectations is the service schedule is executed appropriately (doctor's visit, treatment, rest period) or

attribute no.8. It shows the factors or attributes that are considered to affect patient satisfaction, including the elements of services that are considered very important, but clinics or public health centers have not been performing as desired patients. So disappointing or dissatisfied.

- 4.3 The level of patient satisfaction BPJS and Non BPJS in financing treatment at primary health services obtained Asymp value. Sig. (2-tailed) is 0.000 so there is difference of outpatient satisfaction between patient BPJS and Non BPJS in primary health service.

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Chapter 7: Institutional Reinforcement Model of Creative Economic Development at Surakarta City

Muzakar Isa, Liana Mangifera

The city of Surakarta does not have the potential of natural resources. Regional economic development is supported by the creative economy sector. Surakarta city has many creative economic potential especially related to culture. Stakeholders have a very important role in the development of creative economy in the city of Surakarta. The various interests of stakeholders in the city of Surakarta must be managed well for the optimization program of developing the creative economy. This study aims to formulate institutional model of creative economic development in Surakarta. The analytical tool used in this research is descriptive analysis and stakeholder analysis. The results show that not all stakeholders are actively involved in the development of creative economy and they have different interests. Based on this matter, it is needed a forum as a communication forum for synchronization, collaboration and coordination among stakeholders so that the program of creative economy development in Surakarta City can be integrated well.

Keywords: *Creative Economy, Culture, Institutional, Stakeholder*

1.0. INTRODUCTION

Culture and creative industries have been increasingly integrated into the policy agenda of both developed and developing countries (Srimulyati et al. (2017), and Akhir et al. 2016), Pangestu, 2008). Indonesia's rich cultural diversity and heritage provide fertile ground for a thriving creative industry (Isa, 2012). Creative industry is a core priority of Indonesia government. Creative industry contributes to GDP 7.66% (2016), contributes to exports: 8% (2015) and contributes to number employed in the Sector ±12 million (2015).

The city of Surakarta, which is also often known as Solo, has some kind of creative industries. Creative industries became an important subject matter in an attempt to boost regional economic growth the city of Surakarta. The creative industries are the sector driving force for creating competitiveness to other sectors as well as the competitiveness of the region. Creative industries in Surakarta contribute greatly to the economy of the region (Isa, 2016).

Surakarta is an area which has no natural resources. In maintaining the economic growth regions should optimize creative industry. Surakarta as one of creative economic centre in Indonesia has a wealth of cultural and creative people. Surakarta has the creative resources and creative products that are very likely to be developed. The potential economic growth pushed the creative impact on the economic contribution of creative against the high economic growth of the city of Surakarta (Isa, 2016).

The Government of Indonesia has set 16 types of creative industries (Pangestu, 2008). The Surakarta city has set 4 types of ceative industry which became the pre-eminent city of Surakarta, namely, art shows, crafts, batik, and culinary. The determination of the type of flagship of Surakarta as the city has a lot of cultural heritage (Isa, 2016).

Surakarta is one based on creative industries on the basis of culture. The creative industries need to develop cooperation between stakeholders should be arranged so that related development model (Putterman (2013) and Isa (2016)). The purpose of this study is to (1) identify stakeholders of creative economic development in Surakarta, (2) identify of stakeholders objective for creative economic development in Surakarta, 3) analyze the convergence and divergence among stakeholders to formulate institutional model of creative economic development in Surakarta.

2.0. MATERIAL AND METHOD

2.1 Stakeholder Analysis

Stakeholders are individuals, groups, or institutions that pay attention and or influence the outcome of an activity and the achievement of an activity objective. Freeman stated that stakeholder is an important group for the continuity and success of a corporation and or community in achieving their goals (Miles 2012; Reed et al. 2009). Activities from planning to implementation and finally to evaluation so far are carried out only by habit and existing or established *job description*, so it is often not in accordance with requirements in the field. Stakeholder analysis becomes one of the necessary alternatives to encourage the participation of each stakeholder. The level of stakeholder relationship can be analyzed with the *Stakeholder Analysis*.

Godet (1991) stakeholders analysis requires the active participation of all components involved in achieving goals. Each stakeholder will be faced with goals

to be achieved, their perceptions, actions or interventions to take, and how much outcome has been achieved when compared to the target. One of the main findings in stakeholder analysis is convergence and divergence. The convergence matrix is divided into 3 orders: (1) the first order, the convergence of goals among the actors, identifies the general position of the actors against the goals (whether they are *pro* or *contra*). The closer actor will have strong convergence, shown in red. Neutral position is not considered. (2) The second order, the convergence matrix of the actors X objectives, calculates the mean convergence intensity between two actors when they have the same level of pro and contra. The matrix calculation focuses on the intensity of the alliance with objective preference from several actors. (3) The third order, the calculation of the matrix using the weighted value, is the weighted position of the actors X objectives. This third order identifies the number of alliances and considers the actors' objectives and competitiveness preference. Values represent the level of convergence, in which the higher the intensity, the more the actors with common interests. Actors which are closer and face-to-face have a stronger convergence.

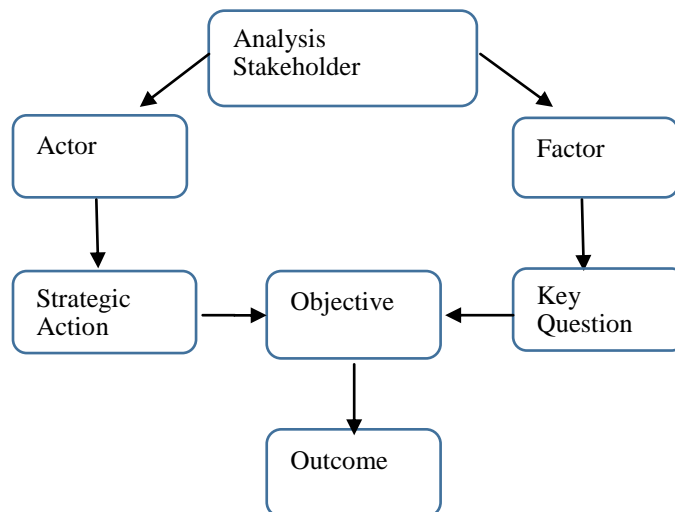


Figure 1. Stakeholder Analysis

Divergence, identification among actors that are mutually distant or spread, also has three orders. The divergence illustrates the existence of conflict potential. (1) The first order indicates actors which are separate, have many differences, and are not in the same position and prone to conflicts. (2) The second order shows that actors which are facing each other actually have many differences. Values in the matrix do

not measure the number of potential conflicts but the conflict intensity with preferences from several actors. This second order will help identify potential alliances and conflicts. (3) The third order is a weighted divergence matrix in which the actors X actors will relate to the actors X objectives matrix. The divergence map will show increasing number of differences (Godet, 1991).

2.2 Study Area

The city of Surakarta as one of big city in Central Java Province (with 504.000 of population) has long history as capital city of Mataram Kingdom since 14th century. The city of Surakarta also known as Solo, (thought that word “Solo” actually is not just Surakarta as a city but also as a cultural for Surakarta, Boyolali, Sukoharjo, Wonogiri Sragen and Klaten– as cities of ex Solo Residence’s area in Dutch Colonial’s time). With two palaces as part of Mataram Kingdom in the past time (Mangkunegaran and Kasunanan), Surakarta has big capital to develop local economic from Java’s culture such as traditional music performance (gamelan and karawitan), traditional drama (ketoprak and wayang), traditional dance, batik (fashion and handicraft).

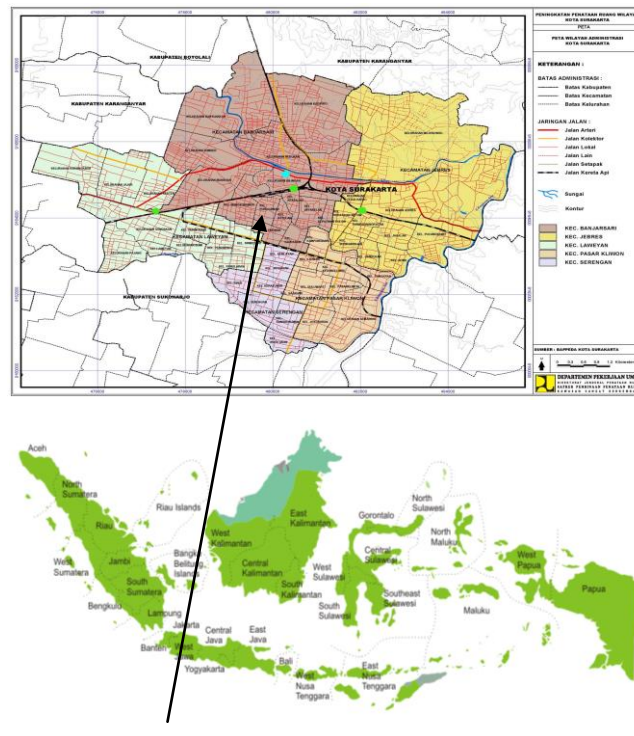


Figure 2. Location of the study area

2.3 The Analytical Tool

This research uses a mixed method, which combines quantitative and qualitative analyses. The analytical tool used is the Matrix of Alliance and Conflict: Tactics, Objectives, and Recommendations (MACTOR), which is a series of six-step actor analysis. The added value is gained through calculations that reveal actors, positions, and strengths in relation to a number of strategic objectives. MACTOR method is very broad because it can be used for up to 20 related purposes but remain simple and accessible. To obtain accurate analysis results, an in-depth interview is needed with the help of questionnaires that can be answered honestly by stakeholders. (Godet 1991), and (Rees et al. 2017).

MACTOR includes several stages of matrix preparation: (1) Determination of key variables and actors involved; (2) Preparation of actors table; (3) Preparation of strategic issues and objectives; (4) Positioning actors and strategic objectives in the position matrix; (5) Calculating the convergence and divergence matrices performed in three stages; (6) Calculating the direct and indirect relationship of power matrix; (7) Calculating the position matrix value; (8) analyzing the strategic recommendations of each actor (Godet, 1991).

3.0 RESULTS AND DISCUSSION

In this research, the actors consist of 13 stakeholders representing the main actors of creative economic development in Surakarta. They are: 1) Department of Planning, Research and Regional Development (Badan Perencanaan), 2) Department of SMEs (Dinas Koperasi & UMKM), 3) Department of Tourism (Dinas Pariwisata), 4) Department of education (Dinas Pendidikan), 5) Department of Commerce (Dinas Perdagangan), 6) Department of industry (Dinas Perindustrian), 7) University (Lembaga Pendidikan), 8) Schools (Sekolah SMK), 9) Creative Community (Komunitas Kreatif), 10) Association Tourism (asosiasi Pariwisata), 11) Businessman (pelaku Usaha kerajinan), 12) Businessman (Pelaku usaha kuliner), and 13) Artists (Budayawan – Pelaku seni). The Objectives that become the measures in this study include 1) Profit, 2) Self-actualization, 3) The Original Regional Revenue (PAD), 4) Reputation, 5) Performance.

The Mactor tool in this study which uses 13 actors and 5 objectives. The results explain that the influence and interdependence between actors shows how strong the competitiveness of stakeholders in determining the policy to be formulated. The higher the competitiveness, the stronger the influence of stakeholders in accommodating the interests of each stakeholder. The result of Mactor also indicate the level of approval of the actor against the objectives to be formulated. Furthermore, the result of Mactor will show the convergence and divergence between actors

The first result shows the map of influence and interdependence among actors is a representation of the position of each actor with influence and dependence on each other. MACTOR processing produces Figure 3 and figure 4.



Figure 3. Influence and dependency map between actors

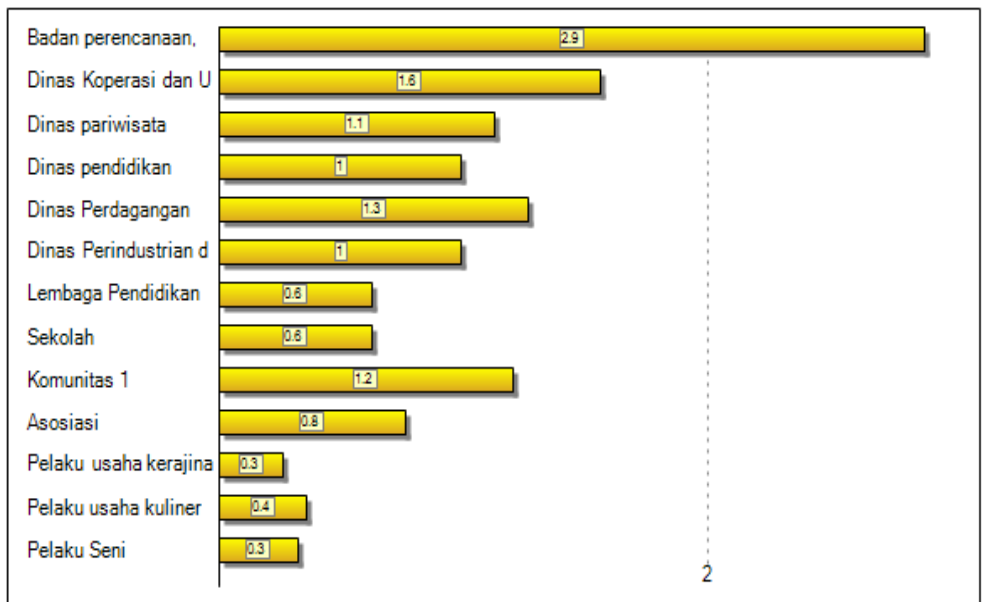


Figure 4. Histogram of Matrix Direct and Indirect Competitiveness

Figures 3 and 4 show that creative community have the highest influence and low dependence so that their competitiveness is high. These results indicate that creative communities have a central role in develop of creative industries. The actor with the lowest influence and high dependence is Budayawan, so they will depend heavily on the other actors. This is the same as businessman (kuliner and kerajinan).

The next goal is to analyze stakeholder perceptions of the objectives that become indicators. The competitiveness and objectives scale shows that (1) Profit, (2) Self-actualization, (3) The Original Regional Revenue (PAD), (4) Reputation, (5). Performances receive positive response from all actors, meaning that all actors agree with these objectives.

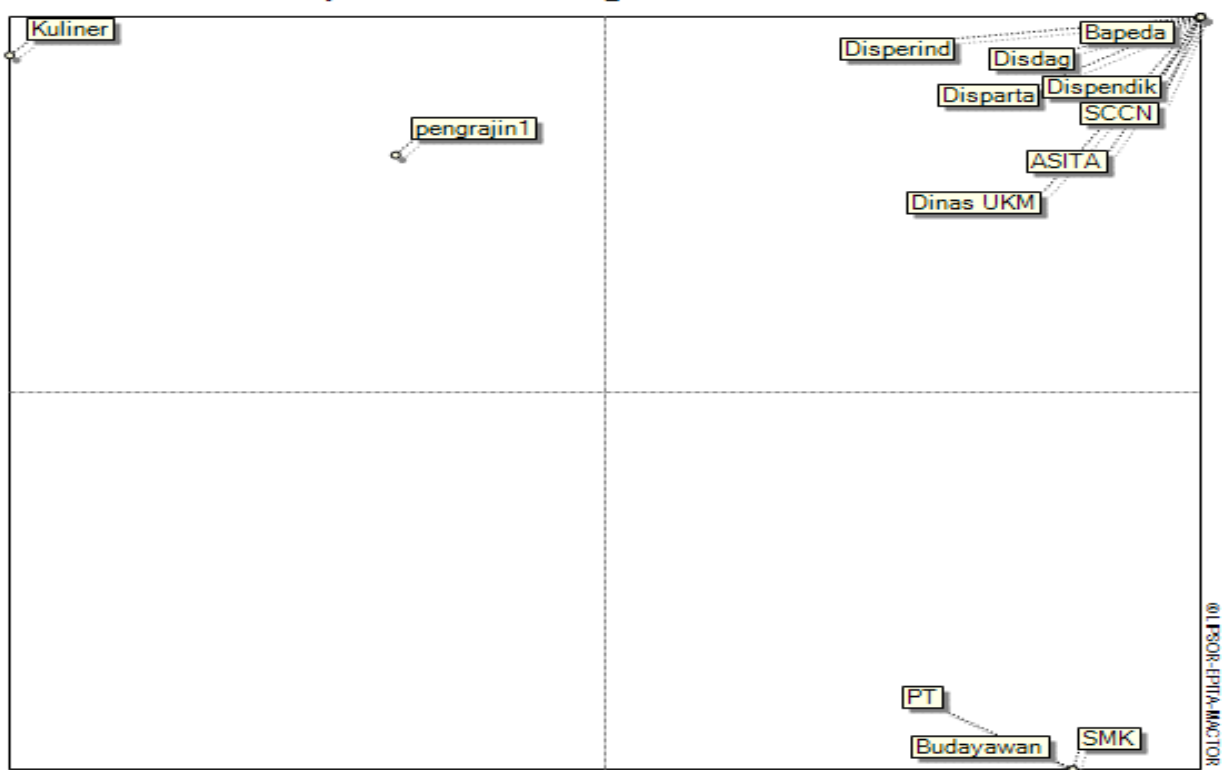


Figure 5. Map of Order 1 Convergences Between Actor

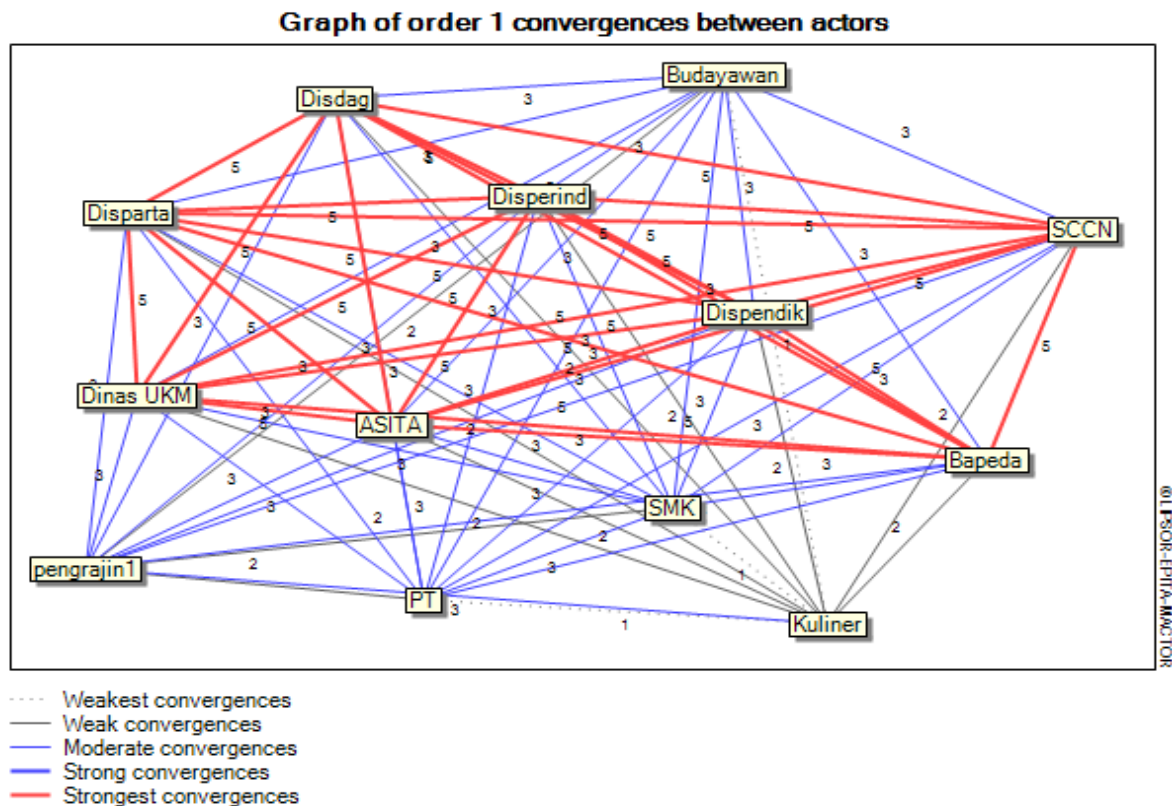


Figure 6. Map and Graph Of Order 1 Convergences Between Actor

Convergence among actors on creative economy development shows strong values in Department of Planning, Research and Regional Development, Department of SMEs, Department of Tourism, Department of education, Department of Commerce, and Department of industry, which shows the important position of these actors as they have a high degree of common interest. Stakeholders with the lowest convergence are creative community and tourism association. The low convergence is related to their high competitiveness, which makes them feel that it is unnecessary to connect with external parties to be empowered.

The Convergences matrix divided into three order, The convergences matrix on the first order shows the simple convergences between actors which is identification a couple of actors the number of common positions they have on objectives, there are pro or contra. This matrix would identify the number of possible alliances (Godet, 1991).

Figure 5 shows a clustered convergence divided into three major groups. The first group includes businessman (kuliner and kerajinan). The second group consists of academic (university), Budayawan, and Senior High School (SMK). The third group includes Department of Commerce, and Department of industry, Department of Planning, Research and Regional Development, creative community, tourism association, and Department of

SMEs. BUDAYAWAN is an interesting phenomenon because they do not have high competitiveness so they are positioned closer to academic (university), and Senior High School (SMK). After in-depth interviews, it is found that BUDAYAWAN prefer to actualization than profit for their activities.

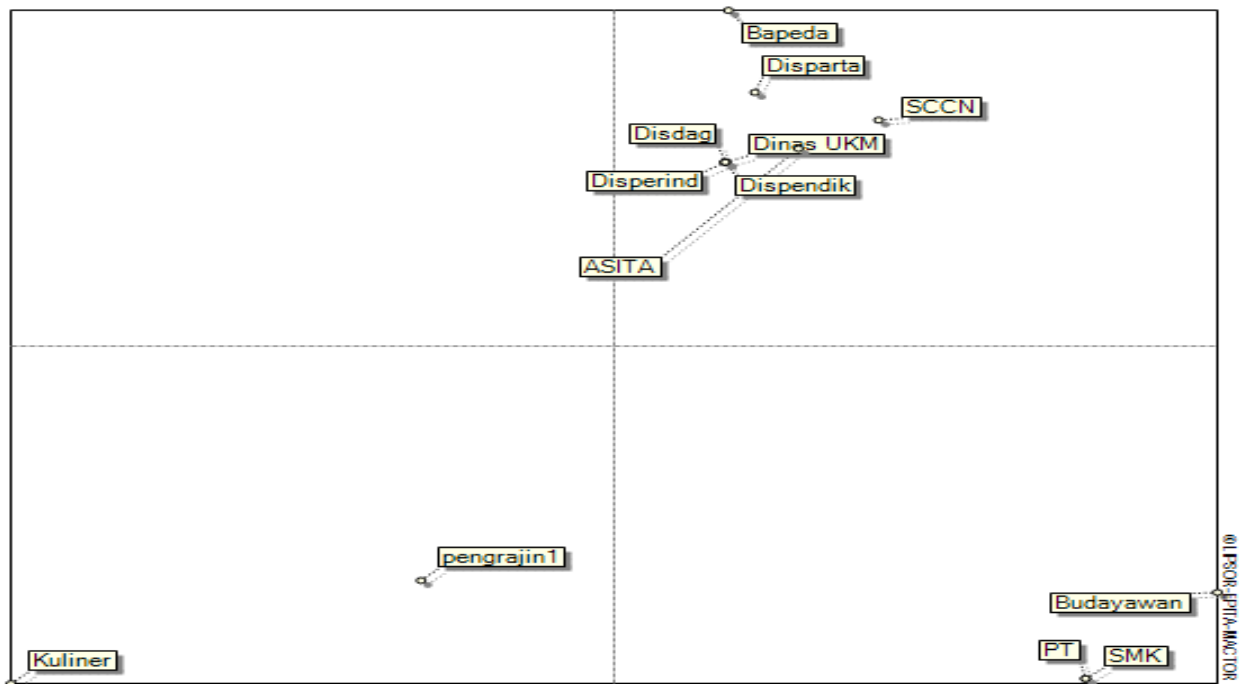


Figure 7. Map of order 2 convergences between actor

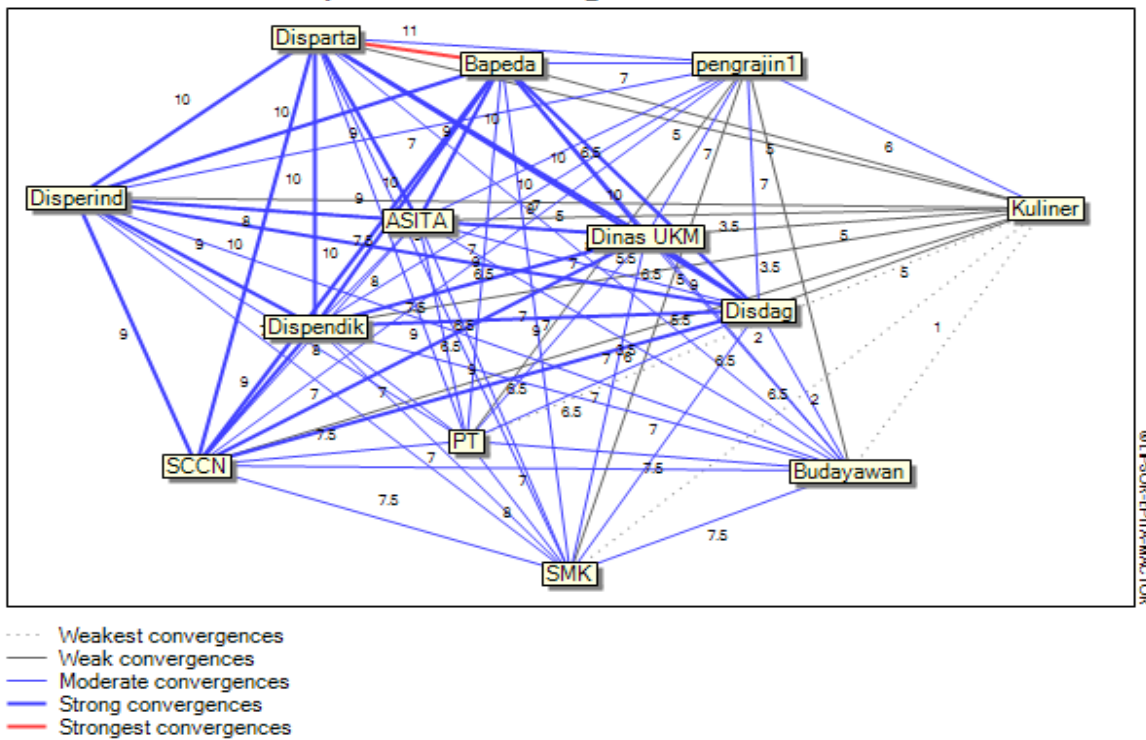


Figure 8. Graph of order 2 convergences between actor

The convergences matrix on second order shows the relationships between actors on objectives. The average convergences will calculate the intensity between actors with the same objectives and will show possibility of intensity alliances with the hierarchy of objectives or preferences between actors. Figure 7 shows the mactor's result of the second order, there are a very strong convergence network between Department of Tourism and Department of Planning, Research and Regional Development.



Figure 9. Map of Order 3 Convergences Between Actor

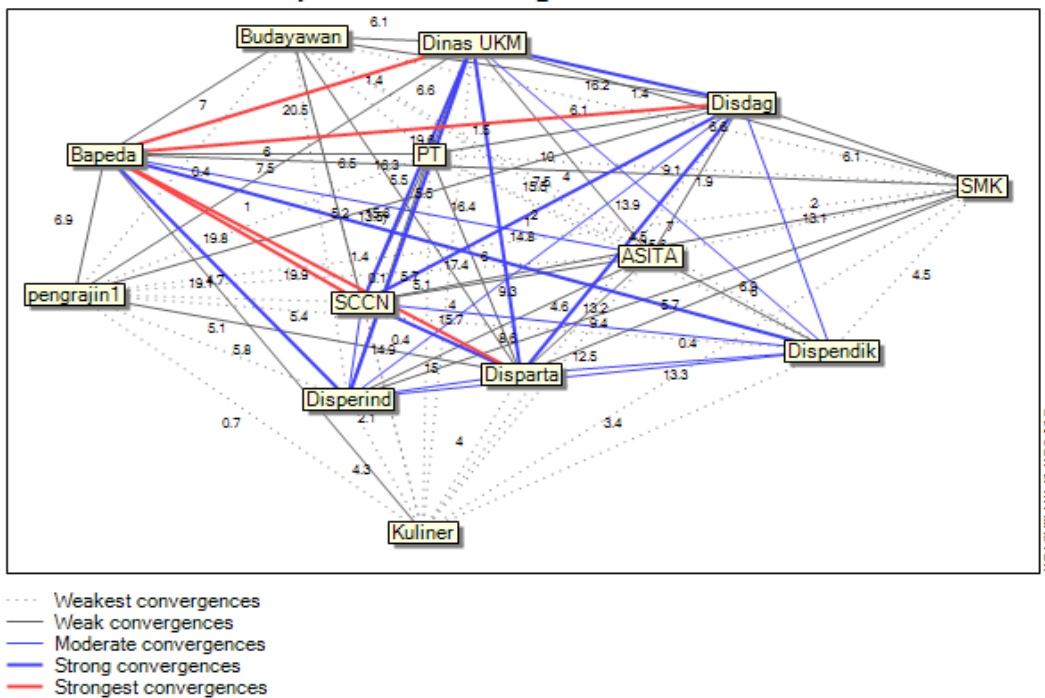


Figure 10. Graph of Order 3 Convergences Between Actor

The convergences matrix on the third order is a weighted matrix that considers the actors, objectives and competitiveness of each actor. The influence and dependence of actors is as a weighted. Figure 7 shows that Department of Planning, Research and Regional Development

have a strong network with creative community, and are strong linked to the Department of Commerce, Department of industry and Department of Tourism. Meanwhile, other actors have moderate and weak networks. The results of mactor indicate that Department of Planning, Research and Regional Development are actors that can be accepted by all parties and as drivers of the alliance among stakeholders.

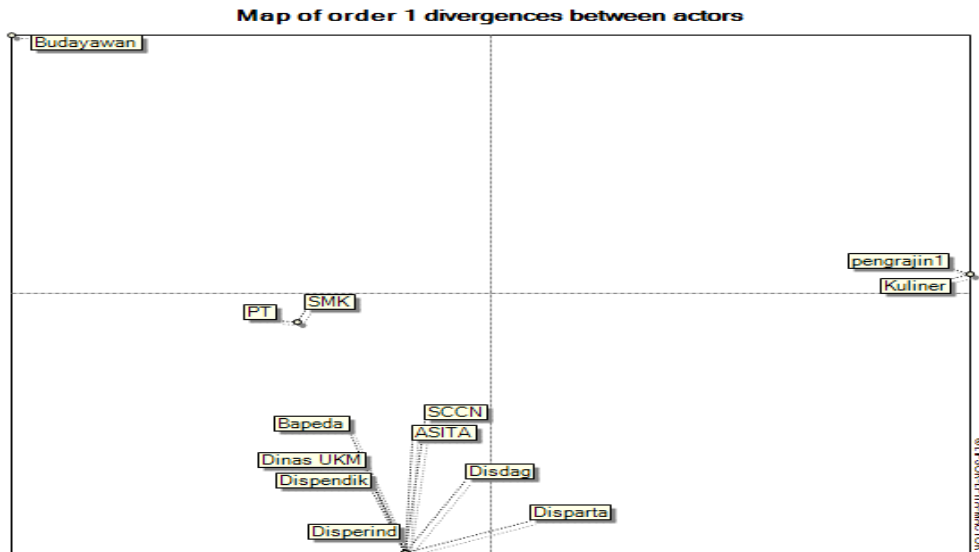


Figure 11. Map of order 1 divergences between actor

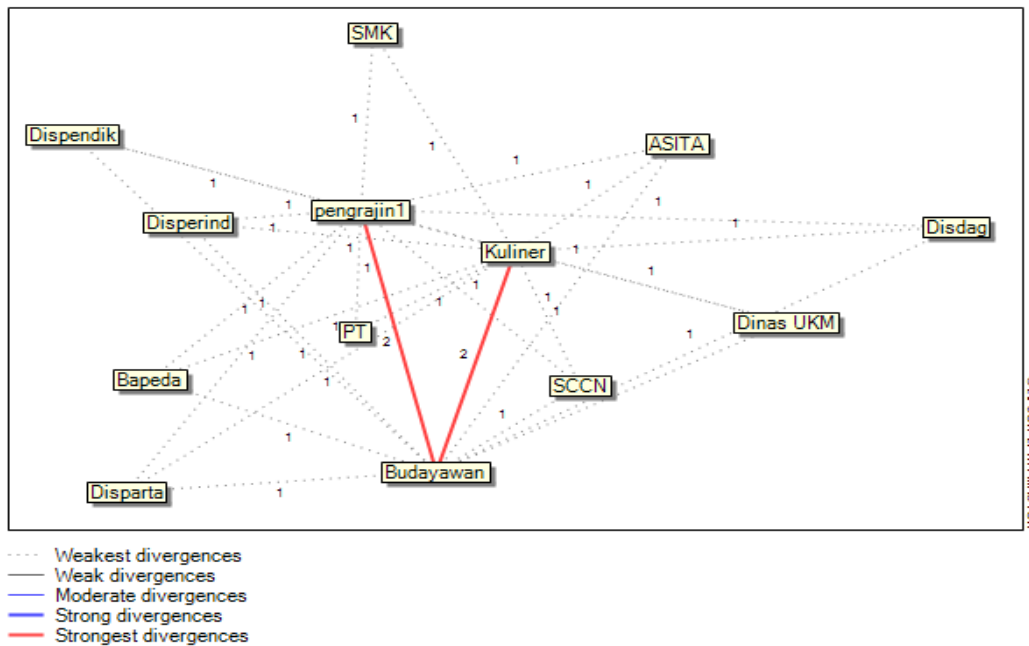


Figure 12. Graph of order 1 divergences between actor

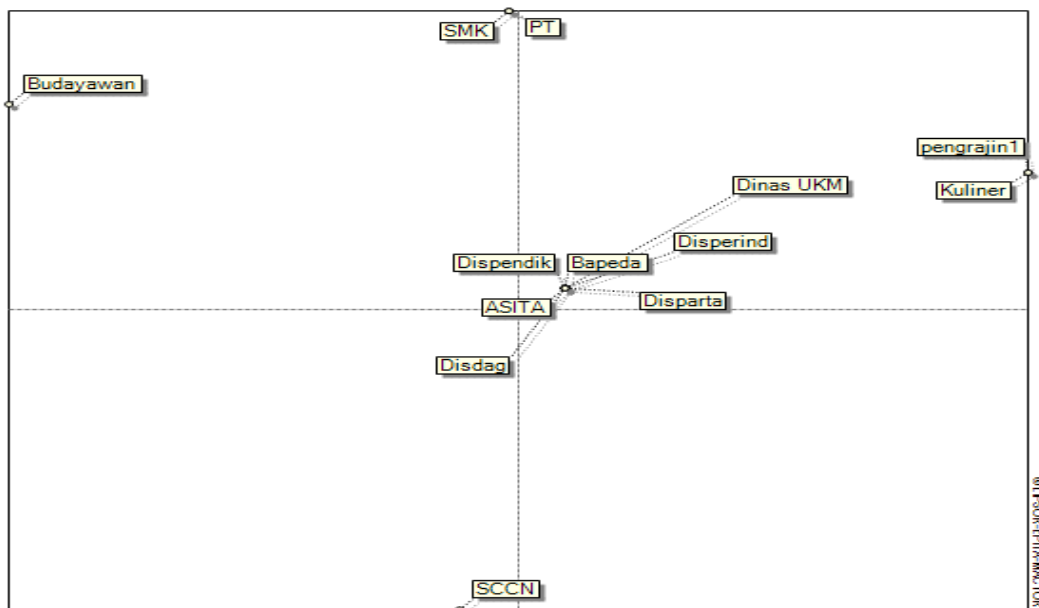


Figure 13. Map of order 2 divergences between actor

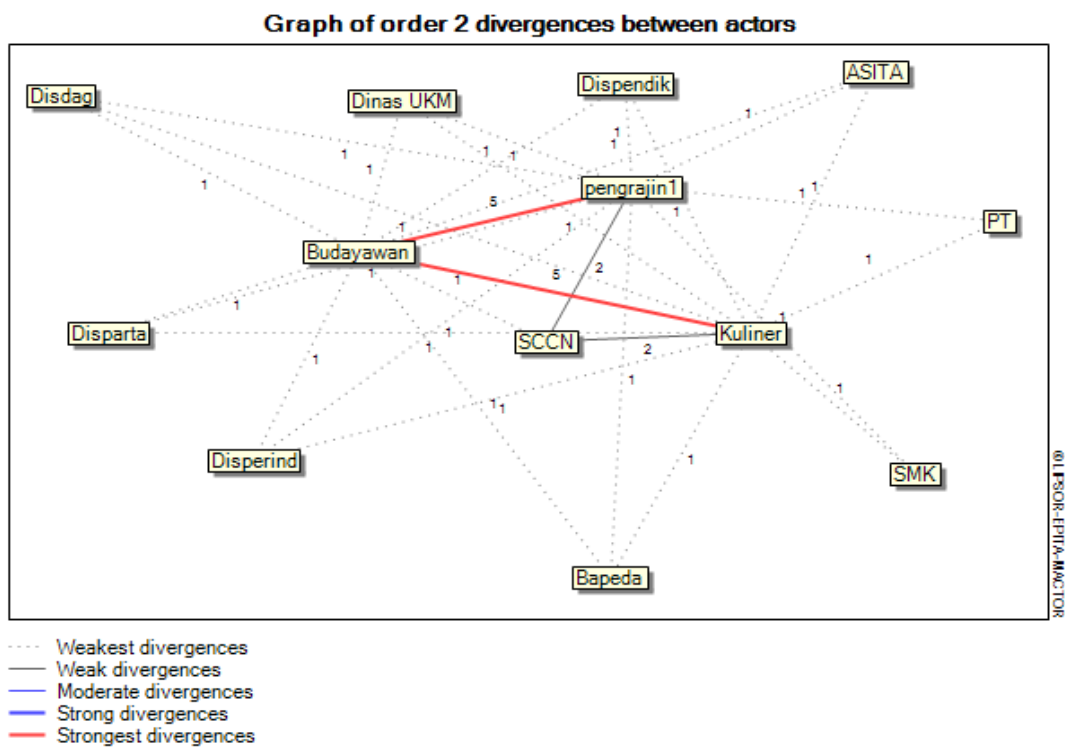


Figure 14. Graph of order 2 divergences between actor

The next finding is divergence. Mactor calculation results show that stakeholders with high divergence potential is Budayawan, while those with low divergence potential include Department of Planning, Research and Regional Development, Department of SMEs, Department of Tourism, Department of education, Department of Commerce, Department of industry, Creative Community, and Association Tourism. These results indicate that Budayawan has a relatively high probability of conflict with the other stakeholders. Department of Planning, Research and Regional Development, Department of SMEs, Department of Tourism, Department of education, Department of Commerce, Department of industry, Creative Community, and Association Tourism have low probability of conflict so that they can become central stakeholders in develop of creative industries in Surakarta. The position of academics (university and SMK) in reality is indeed neutral because they have no direct interest with creative industries. The divergence map and graph are shown in Figures 8, 9 and 10.

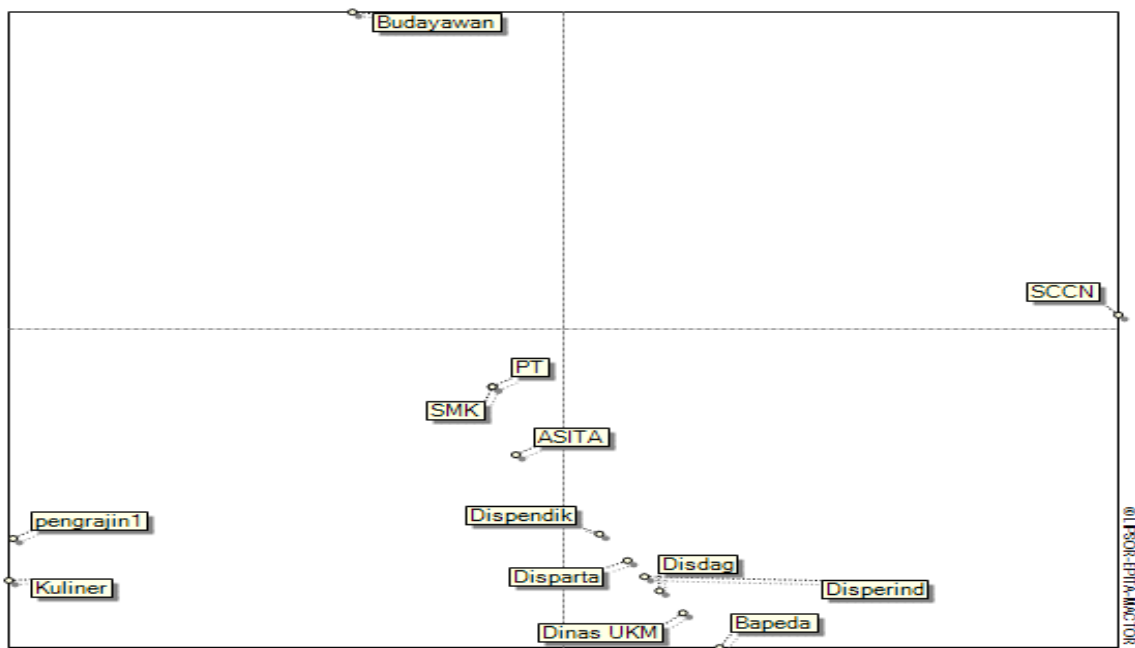


Figure 15. Map of order 3 divergences between actor

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Chapter 8: Emotion Regulation Reviewed from Self-Compassion on Patients Diabetes Mellitus Type 2 in Dr. Goetheng Taroenadibrata, Purbalingga, Indonesia

Suwarti, Wulandari Hastin

This research is to determine the reviewing emotion regulation with self-compassion on patients with type 2 diabetes mellitus in RSUD Dr. R. Goeteng Taroenadibrata Purbalingga. The hypothesis proposed in this research is there is a correlation between self-compassion and emotion regulation in patients with type 2 diabetes mellitus in RSUD Dr. R. Goeteng Taroenadibrata Purbalingga.

The scale of self-compassion and the scale of emotion regulation were used to collect the data. A test to measure the instrument was conducted on 40 patients, while the subjects of this research were 73 patients. Product moment correlation was used as the test validity technique and alpha cronbach was used as reliability test.

The results of analysis scale test show that self-compassion scale, 50 items are valid and 10 items are invalid with the validity coefficient moving from 0.346 to 0.75 and the reliability score of 0.917. In emotion regulation scale, consists of 48 valid items and 12 invalid items with the moving validity coefficient from 0.314 to 0.843 and reliability score of 0.938. The result of hypothesis test data was at significance level of 1% with r-table of 0,296 and p 0,000 with r-count of 0,640. The contribution of self-compassion by R Square was 0,410 to emotion regulation or 41%, and the rest of 59% is a contribution of other factors not examined in this research).

Keywords: *Self-Compassion, Emotion Regulation, Diabetes Mellitus Type 2 patient*

1.0 INTRODUCTION

In modern times, there are a variety of new and practical things that ease a lot of people to do many things. We can see the person's lifestyle in everyday life. Indeed, every person lives in the world by having some important aspects in life, one that must be maintained is

health. There are several indicators as an individual determinant in a healthy lifestyle such as physical fitness in exercise, balanced diet, productive and social activities. Unhealthy lifestyle is like a very busy way of life with works from morning to evening and being late at night sitting behind the table causing no opportunity for recreation or exercise as well as the unhealthy such as western food or Fast food (Setiati, Alwi, et al, 2014).

Shaffer (2005) mentions that it is the capacity to control and adjust emotions that arise at the right level of intensity to achieve a goal. The emotion as expressed by Goleman (2007) is the urge to act, an immediate plan to overcome the problems that have been instilled gradually by evolution. Based on the type, emotions can be divided into 2, namely positive emotions (eustress) and negative emotions (distress). Eustress encourages us to do all activities in life, otherwise distress is all forms of stress beyond the ability to overcome them, burden the body, and cause physical or psychological problems. In line with Thompson (in Janah, et al, 2015) describes emotion regulation as the ability to respond to extrinsic and intrinsic processes to monitor, evaluate, and modify intense and settled emotional reactions to achieve a goal. Emotion regulation is related to mood. The concept of emotion regulation is broad and includes psychological consciousness and unconsciousness, behaviour, and cognitive processes. The ability of important emotion regulation is possessed by individuals who have psychological distress due to adverse events experienced, such as patients affected by DM disease. Furthermore, (Kusumadewi, 2011), states that the number of people affected by type 2 diabetes is about 90-95%. In line with this, DM type 2 in particular has become a public health problem around the world, especially in developing countries such as Indonesia. In polyclinic of RSUD Dr. R. Goeteng Taroenadibrata Purbalingga, the number of DM type 2 patients in February (2017) can be seen in the Table 1.

Table 1. Medical record Data Patient DM Type 2

Total	Male	Female	Age
118	31	87	34-69 years old

Source data: Medical Record Hospital Dr. R. Goetheng Taroenadibrata Purbalingga

The changes in the psychological condition shown by the patient can be seen on the emotional aspects of the patient, for example emergent emotions that are unstable and highly dependent on the patient's mood. The emotional state of the patient is disturbed because the patient has to keep his or her diet since he/she should not consume sugar or sugary foods, go on a diet, exercise at least by walking, drink plenty of water and fruits, and check blood sugar at least once a month. The difficult time for the patients is when attending a party. Patients should be more selective in choosing the foods they eat because the wrong choice of food will make their blood sugar rise. Furthermore Tjokroprawino (2006) adds that it seems that activities are easy to

live but sometimes the patient is saturated, such as wanting to be free to consume food and beverages. This kind of feelings will make the patient experience frustration and stress that also affects his emotional conditions.

Emotion regulation is a very important variable to help maintain the health condition of patients with type 2 diabetes. This is the focus of attention because DM also affects the psychic so that there is a significant change in the behaviour of DM patients. The condition deserves to be seriously taken because the effect of this behavioural change is not only experienced by patients but also experienced by family members and close relatives. This condition is mainly found in patients with type 2 diabetes, because one can make physical and psychological adjustments to deal with and treat the type 2 DM. Therefore it is important and interesting for the researchers to investigate the type 2 DM.

Base on preliminary researches conducted on 3 subject showed the following result :

Subject WY, 34 year old, have suffered DM for 5 years, explained : the cause of the illness is due to unhealthy lifestyle. Moreover, WY does not really like sports, or even only doing morning walk. WY's initial symptoms include easy fatigue, increased thirst, frequent urination during the night, skin infections/slow wounds heal, weight loss, and other metabolic syndrome features such as high blood pressure. In addition, WY gets easily emotional and angry to herself, easily offended by the words of others. There is a feeling of regret after being diagnosed with type 2 diabetes mellitus.

Subject YM, 53 year old, have suffered DM for 7 years, explained : the cause of the illness is due to unhealthy lifestyle. YM rarely moves, often spends her time by sitting for hours to complete her work, rarely spends her time doing exercise. It causes her to have excess body weight/obesity. The symptoms she experiences are feeling tired easily, getting increased thirst, having frequent urination at night, experiencing chest infections / wounds that is slowly healed, weight loss, and having metabolic syndromes such as high blood pressure. YM feels sad because her blood sugar is difficult to stable, she often cries, regrets. She feels that her family does not care to her anymore due to their less attention. YM feels anxious when his health condition deteriorates and is worried about her illness.

Subject RS, 60 year old, have suffered DM for 8 years, explained :the cause of the illness is due to unhealthy lifestyle. She is so busy in completing the work; RS often consumes food and beverage that are ready, easy, and practical. But RS does not compensate with physical movements such as exercising or walking. In social conditions, activity is hampered, difficult to move and easy to feel tired so she rarely to participates in community activities. Psychologically, she feels irritable, reluctant to consume herbal medicine, and is easy to feel sad, slumped, thus trying to withdraw from the environment and family.

One way to perform emotion regulation is by self-compassion. Mikolajczak (in Ramadhani & Nurdibyanandaru, 2014) explains that self-compassion is related to indicators of emotion

regulation. Other research conducted by Consedine, et al. (2015) states that the components of self-compassion are self-kindness, common humanity, mindfulness. The study explains that self-compassion is important to have, because the active participation of patients with diabetes mellitus is in need to improve the management of blood glucose levels, prevent severe complications, and improve the condition of patients with diabetes mellitus from the physical and psychic.

Furthermore, Anna, et al. (2016) states that patients with type 2 DM need for self-compassion more, namely a sense of affection for themselves because of the impact caused by DM type 2. The feeling of affection is reflected in the act of learning to be friendly to yourself, it will have good benefits to the patients with DM.

DM in particular type 2 diabetes never recognize the sex, meaning that both men and women can be exposed to type 2 diabetes, for example by having unhealthy habits on both lifestyle and diet. A pregnant woman can also experience DM when diagnosed with type 2 DM in her pregnancy. It happens because she has a family history of type 2 diabetes mellitus then it would also make her exposed to type 2 diabetes which could also harm the health condition of the baby (Johnson, 2005).

Apriyanti (2014) mentions that the causes of type 2 DM are: (a) Unhealthy Patterns of Life, all causes of type 2 DM are generally due to unhealthy lifestyles. This makes the imperfect metabolism so that it cannot make insulin in the body function properly. The insulin hormone can be absorbed by the fat in the body. So that unhealthy lifestyle can make the body lack of insulin. Unhealthy lifestyle is caused by the number of eating fast food with fat and unhealthy substance, but it is not balanced with exercise. Thus, it causes individuals to have high levels of cholesterol, obesity or overweight. (b) Genetic, if the parent or sibling is experiencing it. Unhealthy lifestyle is quite related to the emotional conditions experienced by a person. As social beings, humans are often involved in social interactions, where each meeting must provide a variety of dishes as a complement. Feelings of happiness and cheerfulness make a person tend to consume more food than when sad.

Goleman (2007) reveals that emotion is the drive to action, an immediate plan to overcome the problems that have been instilled gradually by evolution. Furthermore Maramis & Maramis (2009) explains that emotions or feelings are human spontaneous reactions, it is not observed or followed by behaviour, it cannot be judged good or bad. Pervasive and persistent emotions or feelings colour one's perception of the world and its surroundings.

Gross (in Lewis, et al, 2008) states that emotion regulation is a conscious or unconscious strategy to maintain, strengthen or reduce one or more aspects of the emotional response of emotional and behavioural experiences. A person who has emotion regulation can maintain or enhance the emotions, he feels both positive and negative. In addition, a person can also reduce his both positive and negative emotions. While Shaffer (2005) explains that emotion regulation is the capacity to control and adjust emotions that arise at the right level of intensity to achieve a

goal. Appropriate emotion regulation includes the ability to regulate feelings, physiological reactions, emotional cognition, and emotional reactions.

In addition, emotion regulation is related to mood. The concept of emotion regulation is broad and includes psychological consciousness and unconsciousness, behaviour, and cognitive processes. In addition, emotion regulation adapts in conditions of emotional situations which stimuli is related to the environment. Research has consistently shown that emotion regulation is associated with certain feelings such as anxiety (Aprisandityas & Elfida, 2012). Besides, the emphasis of emotion regulation itself involves a person in response to a situation by regulating expression from the outside and inside the emotion. Emotion regulation is a difficult factor, perhaps because the circumstances and sources of the feelings are not clearly identified. Controlling emotions means being able to recognize and understand feelings and manage emotions to regulate and to control the emotions not only of oneself but also of others.

According to Gross (in Lewis, et al, 2008) there are four aspects that are used to determine the emotion regulation ability of a person, namely: (a) Strategy of emotion regulation is the individual's beliefs to solve a problem, having the ability to find a way that can reduce negative emotions and can quickly calm down after experiencing excessive emotion. (b) Behaviour to achieve the goal is the ability of the individual to not be affected by negative emotions to keep positive thinking and do things well. (c) Controlling the emotional responses (impulses) is the ability of the individual to be able to control the emotions he feels and the emotional responses displayed (physiological responses, behaviour and tone of voice), so that the individual will not feel excessive emotion and show emotional response right. (d) Acceptance of the emotional response is the ability of the individual to accept an event that causes negative emotions and not feel ashamed to feel the emotion.

One of the individual characteristic factors is self-compassion. Neff (2003) says that self-compassion is a person's self-affection for a suffering experienced; a sense of affection for oneself needs to be possessed by a feeling of kindness, care, and understanding of a suffering experienced. Neff (2003) states that self-compassion has three components of formation, namely self-kindness, common humanity, and mindfulness (full awareness or situations experienced). (a) Self-kindness is the ability to understand oneself when the individual has a lack or suffering in his life. So this component explains how far a person can understand and interpret the failure. Calmness and patience in thinking and acting are manifestations of self-compassion, which belongs to the characteristics of self-kindness. Individuals with self-kindness can deal with problems or stressful situations by avoiding self-abuse or low feelings. Self-kindness is an affirmation that the individual will receive happiness by providing comfort to other individuals. Self-kindness is what encourages individuals to act positively and provide benefits to other individuals. Self-compassion makes the individual able to place himself as a human being, as any other individual in general; (b) Common humanity is the individual consciousness that everyone has experienced difficult times. So this component explains how many people are able to

appreciate other different thoughts, feelings and behaviour. As a human being, the individual exhibits imperfect circumstances and it is possible to make mistakes, this condition is called common humanity. In the view of common humanity, the individual will face the problem objectively; (c) Mindfulness is the full awareness to accept the perceived and alleged pain. So this component explains ability to balance the mind in a suppressing times or causing suffering. The basic concept of mindfulness is to see things as they really are in the sense that they are not exaggerated or reduced so as to produce a truly objective and effective response. Mindfulness is the opposite of over-identification. The awareness of the experience faced clearly and balancedly referred to as mindfulness, which is part of the internal locus of control of the individual personality. So the three components above are related and combined with each other.

Self-compassion does not make the individual avoid pain suffered, but it approaches the pain through good kindness and good intention, thus it generates a sense of well-being to be a whole human being. Self-compassion is not based on judgment or positive judgment. Self-compassion is a positive way to see things as they are. Individuals can have self-compassion as a result of their imperfection, not because the individual is special or above the average person. It means that self-compassion exists when individuals experience failure or success (Neff & Costigan, 2014).

Armstrong (in Hidayati, 2015) classifies compassion as a personality characteristic in which the individual places himself in the position of another individual. In that position, the individual feels the experience of another individual as if it were his own experience. This understanding carries the consequences of individuals viewing the experiences of other individuals in the context of generosity, so touched by the pain of other individuals and the desire to lighten them. Therefore, self-affection is essential to the individual's psychic, mental and spiritual well-being (Fieldeing, 2015).

Based on the problems above, the researchers are interested to examine the correlation between Self-Compassion and Emotion Regulation in patients with type 2 diabetes mellitus in RSUD Dr. R. Goeteng Taroenadibrata Purbalingga. The problem formulation in this research is whether there is a correlation between self-compassion and emotion regulation in patients with type 2 diabetes mellitus in RSUD Dr. R. Goeteng Taroenadibrata Purbalingga.

2.0 METHODS

Data collection was performed by giving a scale to patients with type 2 diabetes when their blood sugar was rising after being checked by the hospital. Subjects consisted of 40 patients with type 2 DM (inpatient) performed for data retrieval with try out, and 73 DM type 2 (outpatient) patients. The method to reveal the data in this study is a scale of Emotion Regulation. There are four aspects that are used to determine the emotion regulation ability of a person, namely: (a) Strategy of emotion regulation; (b) Behaviour to achieve the goal; (c)

Controlling the emotional responses (impulses); (d) Acceptance of the emotional response. The scale of Emotion Regulation consists of 48 valid items and 12 invalid items with the moving validity coefficient from 0.314 to 0.843 and reliability score of 0.938.

The scale of self-compassion was compiled by researchers based on Neff's theory (2003). There are three components of self-compassion are ; (a) Self-kindness, (b) Common humanity, and (c) Mindfulness. The scale of self-compassion was results of analisis scale test show 50 items are valid and 10 items are invalid with the validity coefficient moving from 0.346 to 0.75 and the reliability score of 0.917. The result of hypothesis test data was at significance level of 1% with r-table of 0,296 and p 0,000 with r-count of 0,640. The contribution of self-compassion by R Square was 0,410 to emotion regulation or 41%, and the rest of 59% is a contribution of other factors not examined in this research).

3.0 RESULTS AND DISCUSSION

This research exposed the correlation between self-compassion and emotion regulation in patients with type 2 DM. Based on the result of data analysis, it is known that (0,640) bigger than r-table (0,296) p 0.000 with significant level 0,01 that is 1%, it shows that r-hitung > r-table (0,640 > 0,296) hence hypothesis is accepted that there is a correlation Between self-compassion and emotion regulation in patients with type 2 DM. The result of analysis shows r-count > rtable (0,640 > 0,296) it shows a direction of positive correlation between self-compassion and emotion regulation in patient type 2 DM. This means that if self-compassion is higher, emotion regulation in patients with type 2 diabetes is also higher, conversely if the lower self-compassion then emotion regulation in patients with type 2 diabetes mellitus the lower.

Table 2. Result Correlation Self Compaition with Emotion Regulation on Patient DM Type 2

Correlations			
		Self compassion	Emotional Regulation
Self compassion	Pearson Correlation	1	.640**
	Sig. (2-tailed)		.000
	N	73	73
Emotion Regulation	Pearson Correlation	.640**	1
	Sig. (2-tailed)	.000	
	N	73	73

** . Correlation is significant at the 0.01 level (2-tailed).

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.640 ^a	.410	.401	13.057

a. Predictors: (Constant), Self Compassion

b. Dependent Variable: Emotion Regulation

Data source : Analysis of data on 2 variables

Based on the results of the research, it showed that of 73 patients with type 2 diabetes, there were 0.0% or 0 patients with type 2 DM who had a very high self-compassion score, 34.2% or as many as 25 patients with type 2 DM had high compassion, 37.0% or as many as 27 people with type 2 DM who had medium self-compassion scores, 23.3% or as many as 17 DM type 2 patients who had low self-compassion scores, and 5.5% 4 patients with type 2 DM who had very low self-compassion scores.

While the description of emotion regulation score data from 73 DM type 2 patients, there are 4.1% or as many as 3 patients with type 2 DM who have very high Emotion Regulation score, 23.3% or as many as 17 patients with type 2 DM who have high Emotion Regulation score, 45.2% or as many as 33 people with type 2 diabetes mellitus who have a moderate emotional regression score, 26.0% or as many as 19 patients with type 2 DM with low emotional regression score, and 1.4% or as many as 1 patient type 2 DM Which has a very low emotion regulation score.

These data indicated that patients with type 2 diabetes mellitus who have very high and high self-compassion indicate that patients with type 2 diabetes when their blood sugar rises, then patients tend to have feelings of love, love, and accept themselves. So that the patient can treat the DM experienced with full of affection. This will lead to awareness, that DM is experienced as a natural thing. In line with Hidayati (2015) states that someone who has a high self-compassion, able to accept oneself both the advantages and weaknesses, able to accept mistakes or failures as a common thing that is also experienced by others, and have awareness about the connection between everything. This happens because the patient has all the components that exist in self-compassion such as self-kindness, common humanity and mindfulness. So the patient has a high self-compassion, similar to Neff (2003) which states that the three components of self-compassion are interconnected and interact to become a real self-compassion and perfect.

The above finding is in accordance with the opinion of Neff (2015) who explains that the concept of self-affection consists of 3 components that are all relevant and very needed by DM patients. The first component is self-kindness which refers to the tendency to care and understand oneself. Second, the common humanity that recognizes that all humans are not perfect. The last component is mindfulness (awareness of self) / awareness that involves awareness of oneself through experience in the current state, so that nothing is neglected in self-affection in patients with type 2 diabetes. According to Neff (2003) self-compassion is the process of uncritical understanding of suffering, failure or inability by understanding that these three things are part of human experience in general.

Self-compassion is a major factor in patients with type 2 diabetes, this is in accordance with the results of research conducted by Consedine, et al (2015) who also states that the components of self-compassion is self-kindness, common humanity, mindfulness. The study explains that it is important to have self-compassion by ourselves, because the active

participation of patients with diabetes mellitus itself is needed to improve blood glucose management, prevent severe complications, and improve the condition of patients with diabetes mellitus from the physical as well as Psychic. This is in accordance with the results of research conducted by Penckofer et al (2012) who found that the frequency of fluctuations in blood sugar levels with type 2 diabetes is associated with poor quality of life, and negative emotions/mood. Further and Penckofer (2012) also explains that the reaction of hyperglycemia (high blood sugar levels) can affect emotions, but emotions can also affect blood sugar levels and control patients with DM.

In this study there was a contribution of the self-compassion variable to Emotion Regulation shown by R Square of 0.640, the figure shows that in this study self-compassion has an effective contribution of 41% on emotion regulation. In line with Mikolajczak (in Ramadhani, 2014), he explains that self-compassion has important correlations associated with emotion regulation. Supported by research conducted by Loess (2015), it shows that self-compassion as a moderator correlation between Emotion Regulation and borderline personality disorder symptoms compared with other variables.

This research found that self-compassion has an important role in the Emotion Regulation of patients with type 2 diabetes. When patients with type 2 diabetes have the ability to love and cherish themselves, then the patient is also able to control the negative emotions arising from the disease. In line with the theory by Neff & Costigan (2014), self-compassion is a positive way to see the state of yourself as it is. Individuals can have self-compassion as a result of their imperfection, not because the individual is special or above the average person. The results of this study was supported by Anna, Malcolm, Richard, Consedine (2016) who states that patients with type 2 diabetes need more self-compassion which is a sense of affection for yourself. Considering the effects caused by type 2 diabetes, then learning to be friendly to yourself will have good benefits between the patient and DM. It means that self-compassion exists when individuals experience failure or success. Learning to be good to yourself is important because it has a variety of benefits that will bring about a positive emotion, so that the metabolic conditions of patients with type 2 diabetes will also remain well preserved.

Therefore self-compassion derived within itself is important to be possessed by patients with type 2 diabetes, including self-kindness that focuses on itself. Common humanity involving others in which the patient can stay in good relations with others even though his condition is not like before. The last is the mindfulness / awareness of the patient to be able to function his mind, as patients can think positively about what he is experiencing now. This means that the patient is able to perform Emotion Regulation by running a variety of his daily activities, without any obstructions.

Patients with very high and high self-compassion are influenced by factors of self-compassion such as age, environment and culture. This is because the patient has a very mature age, the final adult (60 years and above). With a very mature age, so even though the physical

and psychological abilities decreased, the patients are more thoughtful before doing anything. Patients also have more sensitive feelings; this is because the patient has had so much experience up to his or her age. Thus, patients are better able to understand what is needed to keep their condition improving. In accordance with Hurlock (1980), he reveals that the final adult (60 years and above) is a period where physical and psychological abilities are declining, yet the patient is more sensitive, and thinks before acting. This is because someone already has a very valuable life experience, before he entered the age of late adulthood. Patients also tend to live in a family that always provides excitement, support and constructive motivation. In addition, patients also live within a culture that cares for one another. So the patient is encouraged to care for and love himself even in a bad situation. In line with Neff (2003), he states that individuals who have high self-compassion is affected by a mature age, a family environment that cares for each other, and lives in a culture that is concerned with the lives of others as well.

Patients who are in the moderate category, as their blood sugar rises indicates that the patient is likely to have a sense of love, love and self-acceptance with the suffering of life that is lived. But the patient has not been maximally in doing so, then the patient has little feeling of loving, caring, and accepting himself. So patients are not maximally in treating DM, it is because patients with moderate self-compassion tend to have several components of self-compassion (not all) (Neff, 2003). It is influenced by self-compassion factors such as age, environment and culture. Patients tend to have a fairly mature age, ie patients have middle adult age (40-60 years). With a mature age then both physical and psychological ability can be used properly, because the patient can adjust himself. In accordance with Hurlock (1980) revealed that, along with increasing age, both physical and psychological ability will be productive. It will allow a person to adjust to his condition. Patients also live in a family that sometimes provides excitement, support and constructive motivation. In addition, patients also live in a culture that sometimes cares for one another. So the patient is slightly encouraged to be more loving and loving him, in a bad state though. This is because, the patient does not have the three components of self-compassion, so in the self-compassion is not perfect. In line with Neff (2003) states that individuals with self-compassion are almost the same as individuals with high self-compassion, but individuals with self-compassion are having only a few components of self-compassion (not all of them) owned by individuals.

Patients with type 2 diabetes mellitus in low and very low category tend not to have feelings of love, cherish, and accept him, so that patients are not maximal in treating DM when the blood sugar rises. Because the patient does not have the three components of self-compassion in him, thus raising the existence of negative behaviour that makes the patient's health can also worsen. The patient is moody, pessimistic, sad, closed to the outside world and lacking curiosity. In line with Neff (2011) said that individuals with low self-compassion also tend to be sad, pessimistic, closed, lack of curiosity and led to behaviour that affects the negative. This is one of

the effects of social anxiety disorder, in which the individual will avoid social life which means the patient cannot love, cherish and accept the DM experienced as a natural thing in his life.

Patients with low and very low self-compassion are also influenced by age, environmental and cultural factors. However, patients who have low and very low self-compassion have an age range in early adulthood (18-40 years). This is because the patient was surprised when the physical and psychological changes arising due to type 2 diabetes that makes the patient becomes less productive. In line with Hurlock (1980), he reveals that the early stage of adult development is characterized by changes in both physical and psychological changes, which makes patients less productive in the activities. The patient is also in a family that likes to criticize her especially the mother, and the patient is in an individualistic culture. In the family and life, the patient lives only thinking of himself without thinking of others even they need each other. Therefore, the patient has a low self-compassion. As Neff (2003) argued that individuals with low self-compassion, having early adult age, are in an environment that likes to criticize and be in an individualist environment.

Patients who have very high and high emotion regulation have a mature age of the final adult age (60 years and above). With their mature age, then the patient by himself can control his emotions. In accordance with Hurlock (1980), he said that along with increasing age the physical and psychological ability will decrease but it does not make a person become weak. However, someone who is elderly will be more selective in acting and have a sensitive feeling to something with all the experience he has. So, he will be more able to think first before doing something. Patients can also receive; assess a positive emotional experience that is commonly seen in the culture. Furthermore, the ability of Emotion Regulation is influenced by the condition of the patient's health, when the patient's condition is bad or good. Regarding to the atmosphere of the house, if the patient comes from friendly family, it will lead to happiness even in bad conditions. These include parenting that has been taught by their parents, that living with a family of mutual opinion will make the patient argue, including telling a complaint with a sense of fun and unencumbered.

Patients with type 2 diabetes mellitus who are in the moderate category are indicated to be quite capable in their emotion regulation, it can be seen when their blood sugar rises. It is so since it is quite often used by patients, the patients have tried to control emotions, they are always trying to control anger, sadness, anxiety, and patient concerns about his DM. However, the patient has not been maximally in doing so, because it is not balanced by the reduction of negative experience due to DM experienced. Patients with type 2 diabetes are moderately affected by a fairly mature age factor, ie middle age (40-60 years). With a fairly mature age, then the patient by himself can control his emotions.

Therefore, the patient must really have a good relation with family members, as well as peers. The existence of more protection within the family has been created by the family indirectly, the communication can be used as a patient guidance in controlling the negative

emotions that arise due to illness. In line with Gross & John (2003) , they revealed that individuals who have moderate emotion regulation have tried to suppress the expression of negative emotions he gave side effects that suppress positive expression but not help reduce the negative experience. Thus, the factors affecting the patient's emotion regulation almost cover the whole, though not yet achieved perfectly.

Patients with type 2 diabetes who have low and very low emotion regulation are indicated to be incapable of emotion regulation as their blood sugar rises. Patients cannot control the anger, sadness, anxiety, and patients' concerns about the DM they experience. Patients rarely use emotion regulation ability; patients more often use his thinking that judges against everything with a negative mind. In line with Strongman (2003), he says that someone who has low emotion regulation rarely uses his ability of individual emotion regulation. Individuals often use the cognitive approach more, so there is a process of reassessing the situation that will impact on negative emotions, or in other words this process is assessing the situation at hand. Patients who have low emotion regulation, have an immature age (18-40 years). So the patient was shocked by the physical and psychological changes due to DM type 2 experienced. Patients also live in a culture that teaches to have a strong belief. Thus, patients will receive and judge a poor emotional experience and make it difficult for patients to control their emotions. In addition, low emotion regulation is also affected by the health conditions in which the patient will feel that his health condition has never improved despite ever improving.

In line with Gross (Lewis, et al, 2008) who mentions that low emotion regulation is influenced by age factors that are not mature enough to have age in early adulthood (18-40 years), patients feel shocked when the physical and psychological changes arise due to DM type 2 Which makes the patient less productive. Hurlock (2013) who states that the low emotion regulation is influenced by health conditions, home atmosphere, parenting, relationship with family members, relationship with peers, over-protection, parents' aspirations, poor emotional guidance. These factors are not related to each other, so when there is a problem in the individual, then the individual will be difficult in solving problems that occur with negative emotions.

4.0 CONCLUSION

This research exposed the correlation between self-compassion and emotion regulation in patients with type 2 DM. Based on the result of data analysis, it is known that (0,640) upper than r-tabel (0,296) p 0.000 with significant level 0,01 that is 1%, it shows that $r_{\text{cal}} > r_{\text{tabel}}$ (0,640 > 0,296) hence hypothesis is accepted that there is a correlation Between self-compassion and emotion regulation in patients with type 2 DM.

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Chapter 9: Pacu Jalur as a Traditional Sport of Kuantan Singingi, Riau Province (Phenomenology Study of Values in the Pacu Jalur)

Alta Febra, Sugiyanto, Agus Kristiyanto

The aims of this research are 1) To identify the history or origin of the traditional sport in the pacujalur 2) to identify of the implementation of traditional sport pacujalur 3) to identify what values are contained in the traditional sport pacujalur 4) to identify community participation in pacujalur. This research was conducted in Kuantan Regency Districts Riau Province. This research is descriptive interpretative research with research subject is history or origin of traditional sport of pacujalur, implementation of traditional sport of pacujalur, and values contained in traditional sport of pacujalur, and community participation in traditional sport of pacujalur. The techniques of collecting data are observation, deep interview and entry documentation. The result of this research concluded as follows: 1) History or origin of the traditional sport pacujalur has existed since the dutch era and after independence then pacujalur back to the rantau kuantan community and held event pacujalur once a year in a year exactly in august to commemorate the independence anniversary RI. 2) The implementation of traditional sport pacujalur this path, implemented in rantaukuantan river with the establishment of the organizing committee by way of meetings deliberations so that people rantaukuantan with the government and to record how many path that will participate in this annual event and prepare all the facilities and infrastructure in need in event pacujalur this path. 3) What values are contained in the traditional sport of pacujalur such as the value of unity and cohesiveness demonstrated by athletes or pace children while voting in padding pacujalur, the value of adaptation to nature where the pacujalur most adapt to the river, the value of art and culture is

visible from carvings, track paints and clothing or uniforms of the pacujalur, the economic value is seen at the time of making the path this is not a bit of money, the of value sport seen from the movement of paddies ridden by the child's pacujalur with the strength of arms and hands with the spirit. 4) Public participation in the traditional sport of the pacujalur seen from the start of the pacujalur by looking for wood in mutual cooperation in the protected forest and up to this annual event held by the community event participate in watching and trading various types of merchandise related to the pacujalur.

Keywords: *Pacu Jalur, Value, Sport, Culture, Traditional, Art.*

1.0 INTRODUCTION

The research background consists of *Pacu Jalur* culture in Kuantan Singingi Regency as a cultural tradition existed from the colonial era until today. This event is conducted annually to celebrate Indonesian National Independence Day. It belongs to both regional and national cultural tourism agenda of Riau Province. This cultural treasure of Kuantan Singingi does not disappear through time since it can be maintained for generations. *Pacu Jalur* is a traditional rowing from Riau in which the length of the boat is 25 - 40 meter with 40 – 60 crewmen.

Resulting from the culture of Teluk Kuantan people (Kuantan Singingi), *Pacu Jalur* is a complexity of the ideas or thoughts of local custom. UU Hamidy (1986) says that this concept also means that *Pacu Jalur* is a form of the whole complex of the meaning, belief and art, law, custom, and all abilities of Teluk Kuantan people.

This study belongs to qualitative research using phenomenological approach. The method is adapted from Creswell (1998), who explains that this kind of approach delays all valuations about natural attitude until certain basic concept is founded. The delay is called as epoche (time range) differentiating data field (subject) with researcher's interpretation. This concept becomes the centre of the researcher who arranges and groups first assumption of the phenomenon in understanding what the respondent says. The steps of this phenomenological research consist of observation, deep conversation, and documentation.

Based on the explanation above, this study purposes to identify the history or the origin, the performance, the comprised values, and the participation of people regarding *Pacu Jalur* traditional sport.

Sport is a systematic and arranged activity conducted to improve physical, spiritual, and mental health. According to the Enactment No. 3 of 2005, Section 4, national sport purpose to maintain and improve health and fitness; to act as facilitation in increasing human achievement

and quality; to build moral value, good character, sportiveness, and diligence; and to develop integrity and unity.

Today, since the United States has the routing power for globalization and the countries such as China and India hold the world production industry in wide fields in their hands, it shows that the basis of the structure that appears to be economical is in fact “the culture”. If culture is considered to be a multi-faceted concept, it is not difficult to see that the technology era we are in and the globalization spread to many areas from science and art to language, religion, customs and traditions, law, diplomacy and economy (Korkmaz, 2006: 654).

Culture phenomenon, is not a meaning entirety that is unchanging, remaining always in the way it exists. It may change depending on time, developments in political, social and economical structures. It can mutually interact with other cultures. However, to maintain the changes occurring as a result of cultural interaction to be healthy, the culture should gain a new shape according to the requirements of the era as the main character is preserved.

The orientation in building sport involves educational, achievable, and recreational sport. It supports genuine sport development purpose to be achieved effectively (Kristiyanto, 2012). Based on the enactment above, national sport also functions to support and raise national defence, pride, dignity, and honour.

Culture which has various aspects such as art, language, traditional house, sport, game, and others should to be in their own existences. In this global era, many local cultures are threatened, especially in Indonesia since it has many citizens and local cultures. This issue needs to get more attention from the government and the citizens in maintaining the tradition. There are also noticeable social issues such as Indonesian local culture which is claimed by another country or the ignorance in keeping the tradition, thus it starts to extinct through times.

Sports culture indicates all kinds of morals, products, and behavior. This study aims to argue sports as a cultural element and its appearance in Turkey. This is a descriptive study based on theoretical argument. It is periodic since it is limited to a given term and it is also relied upon literature review. People's adaptations to living conditions are related to culture. We can specify this, “all the patterns of living and behavior which are special to small units within a large and structurally developed society.” (Erdemli, 2002) In Turkey; it's more accurate to say that, it's understood football when you think about sports and sport culture is football culture. This condition can not only induce cultural diversity and wealth but it also leads to a transformation into a society who likes watching sports, talking about sports (saying more precisely football) rather than doing sports.

Many local games and sports vanish due to internal and external factors. Technology, which is the main supporter of globalization, also takes part in this problem. I have an interest in Indonesian culture, mainly traditional game and sport, because many Indonesian children do not know the way and rule to play them. Art is a maintainable culture since it can form its own space within global development, similar with the entertainment world which is able to make room for

Indonesian traditional art. In this research, I intend to discuss about Indonesian traditional game and sport and the effect towards other cultural matters.

Traditional sport belongs to cultural diversity that has to be preserved since they have equal position in preserving, keeping, and improving the part which is relevant to certain traditional and social custom. According to Uhamisastra (2010: 2), traditional game is a play full of noble values and norms which are beneficial for adults in understanding and seeking the balance of life ethics.

There are not many Indonesian traditional sports appearing in public. Some of the well-known traditional sports are *PencakSilat*, *Egrang*, *Bakiak/Terompah*, *Tarik Tambang*, *BalapKarung*, *KarapanSapi*, *Gasing*, and *Sumpit*. Nevertheless, other games like *Benteng*, *Kasti*, *GalahAsin*, *Benjang*, *Langga*, *Manggurebe*, *Patholdan Zawo-Zawo*, *Lompat Batu*, *Sepak Takraw*, *Bola Api*, and *Pacu Jalur* are only known by several people, particularly the people in the area where the games come from. Therefore, it is generally significant to know and to play those games.

2.0 SORTS OF TRADITIONAL SPORTS

2.1 Sepak Takraw

Sepak Takraw is played like football or volleyball yet conducted in badminton field. This sport came from Malaka Sultanate era (1402-1511) and also called as *Sepak Raga*. There are three players for each group. The players forbid to touch the ball with hands since they are only allowed to use their feet. Thus, the moves are slightly similar with martial arts. This game is quite controversial since several Asian countries such as Malaysia, Laos, Filipina, and Thailand have been claiming this game.

2.2 Pathol

This traditional wrestling game comes from Sarang Sub-district, Rembang Regency, Central Java. It is said to be an old game from Majapahit era, which was a contest to find the best warrior to keep Tuban harbour safe from robbers and bandits.

2.3 Karapan Sapi

It is a cow race from Madura Island. In this game, two cows are the ones who exercise by pulling wooden cart through 100 meter lane. The jockey only needs to stand inside the cart and control the move. This is not a simple task since the person should have special training and skill beforehand. The government and local citizens do take a good care in maintaining this traditional game.

2.4 Pencak Silat

This traditional sport has been a part of Indonesian people for a long time. It roots from Malay culture and it is also famous in other countries like Malaysia, Brunei, and Singapore. Having various versions, *Pencak Silat* develops within local culture. For instance, *Pencak Silat* with Cimande genre is said to be from a fight of tiger and monkey, and the woman who saw the scene imitated their moves then.

2.5 Pacu Jalur

The pacu jalur is a traditional rowing from Kuansing Regency, Riau Province. The boat is pacu jalur about 25 - 40 meters and the crewmen are 40 - 60. At first, this event was held in the village along Kuantan River to celebrate Islamic holidays, such as Miladan-Nabi, Eid Al-Fitr, or Muharram as Islamic New Year.

3.0 METHOD

This is a qualitative research applying phenomenological approach. The method is adapted from Creswell (1998), a phenomenological researcher who analyzes the essential matters, invariant structure (essence) or the significance of basic experience focusing on the intensity of consciousness including visible and conscious situations based on the memory, image, and the meaning. The steps of this method include observation, deep conversation, and documentation.

Raharjo (2008) finds that hermeneutic model - also called as hermeneutics in English - comes from Greek language *hermeneuine* and *hermeneia*, mean interpret and interpretation.

3.1 Research Subject

The data source of this research is the subject of the collected data (Arikunto 2010), consists of lane administrator, tribal chief, crewmen, and all Kuansing - or Kuantan - people who directly have participated in the annual events.

3.2 Location of Research

The research is conducted on *Pacu Jalur* community in Kuantan Singingi Regency, Riau Province. Out of 12 sub-districts, there are 4 of them observed as the research location since they have big rivers.

3.3 Research Period

The research is conducted in March 2017.

4.0 RESULT AND DISCUSSION

4.1 Background Description

Kuantan Singingi or Kuansing is one of the regencies in Riau Province, Indonesia. It is also called as Rantau Kuantan due to its popularity as an area where many Minangkabau people come and live there (*Rantaunan Tigo Jurai*). In their daily

lives, people in Kuansing use Minang kabau custom and language. This regency is located on the South-West side of Riau and is part of the rise of Indragiri Hulu Regency. It has tropical climate. The rainy season occurs from September to February with the highest rainfall happens on December while the dry season occurs from March to August.

Kuantan Singingi consists of lowland and highland, approximately 400 meters above sea level. The highland tends to be windy and it has hilly region with 5 - 300 of incline. The hill is up to 400 - 800 meters above sea level and it belongs to the part of Bukit Barisan. There are two big rivers passing this regency, named Kuantan River and Singingi River which have important roles including transportation, water source, fish farming, and artificial resource to produce hydroelectric power. The watershed of Kuantan River passes 9 sub-districts, which are Hulu Kuantan, Kuantan Mudik, Gunung Toar, Kuantan Tengah, Benai, Pangean, Kuantan Hilir, Inuman and Cerenti.

4.2 Result of Research

4.2.1 The History or Origin of *Pacu Jalur*

Jalur means big boat made of round wood without connection with 45-60 crewmen capacity. The lane is about 16 m to 25 m and the width is 1,3 m to 1,5 m. According to the historical record, *jalur* has been in rantau Kuantan since 18th century. In the beginning, it was used to welcome the guests of honour, for example a king and sultan. Since 1905, it became a race (*pacu* in Indonesia) thus the name turns to be *Pacu Jalur* which means a race of *jalur*.

4.2.2 The Performance of *Pacu Jalur*

Pancang star

It is a lane divider made of banana trunks tied with wood thus it becomes a pair. To make it float on the water, it is laden with rope and stone. It is important to sharpen the edge so that it will not block the water stream. Nowadays, *pancang* is made from *rumbi* branch or midrib and an Indonesian flag is inserted on the top. There are 6 *pancang* within the arena, in which the distance is approximately 1 km for each. Once the river level rises, *pancangan* afloat and then it is called as *pancang hanyuik*. *Pancang* also functions to judge when one of the boats takes another lane by passing the lane on its side. The boat will be disqualified. Meanwhile, the boats are allowed to pass between two *pancang*, and the boat hitting *pancang* will be classified as fail.

Bodial (cannon)

It is the sign to start the race. When the prows are in order and the flags have been inserted, *bodial* will be turned on. If the prows have not in order yet, *partuo* will hang on the flagpole to make the flag bends down then the cannon blows up as the sign. However, if the cannon does not blow up and the boats keep moving, it will be valued as unmarked on the final *pancang*. They have to redo the race (*hilir*). If the prows are still not in order for three times, the race will be started.

Start Pos

The *pos* is filled by *partuo jalur* who have a piece of lottery paper showing the name and identity of the participants, including the village, sub-district, and lane. The *pos* is similar with a security *pos* with no walls.

Judge Pos (Final Pancang)

This is the place where the board members of the regency, including the regent, the staffs, the village headmen, and the guests like the minister, governor, and the officials of the province watch the race.

Rescue Team and Medical Emergency Team

These teams have essential role in the race. If a crewman falls out of boat, they will take action to save the person. Usually, these teams will guard the river sides by riding *pompon* (speedboat) thus it will be easy to help the crewman who are fainted, having cramps, or falling out of the boat.

Lottery

Pacu Jalur lottery is a piece of paper with the names of the participants, along with their identities comprising the village, hamlet, sub-district, and the name of *jalur* racing on that day. It is called as lottery since every *jalur* will get it one day before the event. Therefore, there are around 100 *jalur* in the game and each of them will get information about their rivals, position (on the left or right) and their turns. The list of the information will be piled in the lottery. Usually, children sell it on the events for Rp.1000 including a free pen to mark *jalur* which wins the race. It is easy to find them because the sellers speak out that they are selling the lottery.

4.2.3 The Values Comprised in *Pacu Jalur*

This sport creates a very tight bond of unity and solidarity, adaptive value with the nature and river, and economical and cultural values shown by the financing and carving on the boat. Besides, value of sport also develops from the moves in rowing using the full strength of arms and hands.

4.2.4 The Participation of Rantau Kuantan People in *Pacu Jalur*

The people are very enthusiast for this event. It is shown by how they save money to watch the upcoming event. This activity is called as *julo - julo jalur*, which is an organization in which the leader, named *ketua julo - julo*, takes responsibility for the money. The members can be from one neighbourhood or village depends on the deal. The money depends on each person since the system does not require to submitting it weekly or monthly, yet annually upon the amount of money given to the leader. Then, it will be calculated with the added amount from the people who give more money.

5.0 CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS

5.1 Conclusion

Based on the result of field data and the theoretical discussion above, it can be concluded that:

5.1.1 The history or origin of *Pacu Jalur* started from 1900 during the Dutch colonial era. By the year 1905 when Dutch people came to rantauKuantan area, they acknowledged the festive of this event. The race also had award for the winner fromthis year onwards. At that time, *Pacu Jalur* was held to celebrate the birthday of Queen Wilhelmina on 31 August and not for Islamic holidays anymore. The event has been a century-old on 2003, and it is 114 years old now. This sport belongs to traditional rowing from Riau. The boat's length is about 25 - 40 meter with 40 - 60 people as the crewmen. Nowadays, *Pacu Jalur* is part of national tourism calendar which is held on 23 - 26 Agustusto celebrate Indonesian National Independence Day.

5.1.2 *Pacu Jalur* is usually performed on Rantau Kuantan River. In the old days, it was a symbol of social identity because only the progenitors and the nobles who could pass the line. The event has been prepared for a long time by the local people as the committee who hold meeting and discussion. Aside of the main committee, the people also involves indirectly in making the event lively by selling traditional foods, knickknacks, and souvenirs from the area and arranging the parking area for the vehicles.

5.2 Implication

The implication of this research shows that the result is beneficial in adding information and knowledge for the readers about the history or the origin, the performance, and the comprised values of this traditional sport, along with the participation of the locals.

Pacu Jalur is a traditional sport of Indonesia from Kuantan Singingi Regency, Riau Province. It is a cultural heritage that should be preserved. It also presents as a local tourism object taking the interest of domestic and international tourists. Furthermore, the source of this sport is a very big round wood from the conservation forest.

5.3 Suggestions

Based on the conclusions and implications above, I have suggestions as follows:

- 5.3.1 All people, mainly in rantau Kuantan area, need to support and encourage the youths as the successor generation to maintain the cultural heritage from their ancestor.
- 5.3.2 The Government Tourism Office can give more promotion for this traditional sport, thus it does not only become the icon of the regency but also a unique and impressive tourism object for the tourists. Therefore, Indonesian tradition and culture can be preserved by the next generation.
- 5.3.3 The Department of Forests should improve the control the forest management, especially for conservation forest since big woods are the basic element in making *jalur*. This sport will not be recognized by the next generation anymore if there is no good forest management. Moreover, *Pacu Jalur* has been more than a century-old.
- 5.3.4 The Department of Youth and Sports needs to promote and pay more attention in selecting athletes, or *anak pacu*, thus they can bring good expectation for the race. The department can fulfill this task with its ability and professionalism in growing athletes. It is very essential in having good athletes in the future.

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Chapter 10: Reconstruction of the Content and Context Character Education on Thematic Learning in the Primary School

Tri Na'imah, Suwarti, Herdian

This research is aimed to analyze the strategy of content reconstruction and the context on thematic learning in the primary school. The research approach which is used here is ground theory. The subjects of this research are the primary schools teachers, principals, and Head of District Education Unitin East Purwokerto, sub-district of Kembaran and Karanglewas, Indonesia. The methods of collecting data are observation and deep interview. Data analysis in this grounded theory research are in forms of encoding, which it is a process of parsing data, making concept, and rearranging with the new way.

The results of this research show that: 1) content reconstruction contains integration of self-confidence, self awareness, responsibility, discipline, self management, love environment, peace, respect, manners, affection, gratitude, empathy in the learning theme. 2) content reconstruction contains the forming of modeling attitude, role play method reconstruction, habituation strategy reconstruction, audio visual media reconstruction.

Keywords: *Reconstruction, Content, Context, Character Education, Thematic*

1.0 INTRODUCTION

The thematic learning of primary school in Indonesia is started to be known through curriculum 2013. The analysis of implementation of the previous curriculum shows that the aim of the previous one tends to be disciplinary, over cognitive, over lapping between the subjects in the different courses. This becomes the cause of the needs of integrated thematic learning which is used since the primary school. The curriculum 2013 developers believe that the integrated thematic learning is one of the highly effective teaching models.

Based on the explanations above, the implementation of character education in Indonesia is supposed to refer that theme. Obviously in curriculum 2013 is straightly uttered that the implication of character education in every theme. But the problem is the concept of cognitive-based education is so inherent in the teachers so that in the implementation of character education is still cognitive. The result of Akbar's (2011) study explains that values have been practiced in primary schools such as discipline, cooperation, and responsibility, but in practice the learning still tends to be behavioristic and cognitivistic so that self-awareness to realize these values in the practice of daily life in schools are also not optimal.

The research results of Abbas & Hasan (2014) also show that character education can be integrated in the learning of art and culture because through the learning of art and culture can hone the sensitivity, respect and appreciate the work. The results of Zuchdi, Zuhdan & Muhsinatun (2010) also concluded that effective character education model is to use a comprehensive approach that is by integrating character education in learning field of study. Zulnuraini's (2012) study also found character education in primary schools to be integrated through methods of discussion and assignment in learning.

The results of this study indicate that character education can be internalized through subjects so the risk is the occurrence of an overcognitive learning process included in subjects that are expected to be charged characters (Akbar, 2011). The results of Na'imah's research (2014) indicate that the internalization of character in school will be more effective if through school culture. Most of the primary school education practices in Indonesia are based on a learning taxonomy that includes cognitive, affective and psychomotor aspects. In the affective realm this is actually character education which is internalized.

Based on the description, there needs to be an effort to restore the orientation of character education on the actual path, which is in accordance with the education orientation in primary school that is thematic because primary learning is the foundation of the child to follow the next education. Therefore, the purpose of this study is to review the reconstruction of content and character education context in primary school class I so that will be found the basic concept of character education in primary school based thematic, not based on subjects. To reconstruct character education methods based on educational reconstruction concepts from Duit, Kattaman, Michael & Parchmann (2012) conducted with content analysis and context analysis of character education methods in Primary School. Context analysis is done because character education method can not be presented in abstract, but must be reconstructed according to certain context that is society context in Indonesia.

2.0 METHODS

The research approach used is a grounded theory approach, which is a qualitative research method that uses a number of systematic procedures to develop the theory of the arena

through a gradual and inductive process (Denzim & Lincoln, 2005). Research subjects were chosen because of their skills or abilities in character education. Therefore, in this study the subject of research are primary school teachers, principals, and Head of District Education Unit. The research was conducted at Primary School located in Banyumas Regency which focused on Primary School in East Purwokerto Subdistrict, Kembaran Sub-district and Karanglewas Sub-district, Banyumas, Indonesia.

In the process of data collection work, there are 2 (two) main methods used simultaneously, namely observation and depth interview (depth interview). Observations and interviews were conducted before and during the research process that included an overview, the atmosphere of social life in school, and the physical condition of the school. As a supporting method in this study used the method of documentation, which uses the source of the form of notes and documents (non human resources) and library resources in the form of books, journals, lesson plans, and thematic materials. The main instrument for data collection in this grounded theory research is the researcher himself, while the supporting instruments are observation guides, interview guides, and document notes.

Testing of credibility in this research is done through extension of observation, improvement of persistence in research so that researchers are more carefully to obtain certainty and accuracy of data. The researchers also checked the data and reinforced the concept of theory.

The data analysis phase in grounded theory research is done in the form of coding, which is the process of decompiling the data, conceptualization, and rearrangement in a new way, while the data analysis technique used is interactive analysis from Miles & Hubermans (1994).

3.0 RESULTS AND DISCUSSION

3.1 Reconstruction Strategy

The results show that informants perform reconstruction of content and context in thematic character-based education. The content reconstruction strategy is outlined as follows:

3.1.1 Theme 'myself'

All informants perform the reconstruction of the content in 'me' theme learning. Informants not only introduce students' self as physical, but introduce 'self' as a psychical aspect. Informant 1 introduces all members of the body and sensory functions with the student's goal of realizing its potential, so that it can use that potential to perform positive actions. Informants 3 and 4 use the media to raise awareness that every human being is given the potential of a sense device. Informant 5 says that self awareness is done by taking care of oneself independently, not dependent on the parents.

The emergence of awareness in students is indicated from the behavior of students asked about the advantages of the lackness, tell that he is the creation of Allah, and tell the use of sensory devices it has. In addition, the informant also integrates the 'curious' character in the theme of 'myself'. When the limbs are shown, students respond positively by asking, holding, approaching the picture and listening to the informant's explanation. These findings suggest that children's curiosity can be developed through learning the theme of 'myself'.

Primary school students are the starting class which its learning uses thematic approach. In that age range, learners begin to show concrete, integrative and hierarchical learning behavior, so that in the process of thematic learning appropriately applied adequate character education. According to Piaget (quoted by Wardani, 2012) early childhood is in the transition phase of the preoperational phase (2-7) to the concrete operational phase (7-11). At this time the child has a great curiosity. According to the perception of the child, the world is filled with interesting and amazing things, causing a high curiosity of the child. Curiosity is very varied, depending on what interests him. Therefore these findings indicate that the informant has reconstructed the theme of 'myself' learning to develop students' curiosity.

The findings also indicate that the informant as a teacher has stimulated the students have confidence that is the ability to describe his body. Cooperative and participatory learning can stimulate self-confidence, even introvert students can be motivated to be active in the classroom. Students are better able to know themselves especially the sense device (Akçay, 2016).

3.1.2 Themes 'My Passion'

In learning the theme of 'my passion', informant 2 did not do the method reconstruction. Informant teaches only book-based package and Student Worksheet. But the informant set the goal of character education in this theme to increase the confidence of the child.

These findings support Handayani (2014) research, which states that self-confidence in children can be improved using methods that match the character of early childhood through educational games. The storytelling method is the most commonly practiced method in Kindergarten. Other informants make innovations in learning the theme 'my passion'. The purpose of character development is on improving self-understanding, self-confidence and appreciation of the benefits of his passion. Informants 4 and 5 encourage children to be proud of their passions. For example a child who likes to paint to

love his penchant so that it can be his superiority. Even the informant 3 instilled a gender consciousness through this theme.

These findings suggest that reconstruction of content in the theme of 'my passion' strongly supports character education at an early age. Learning with the theme of 'my passion' is not just channeling the talent of interest in choosing children activities as a penchant, but have a deeper meaning that is the achievement of children's self-understanding. Reconstructing a teaching method with the theme of 'my passion' can increase a child's gratitude for his or her own superiority.

3.1.3 Theme 'My Activities'

The research findings show that the reconstruction of the content conducted by informants in the learning of the theme 'my activities' varies. Informant 2 reconstructs this theme into a responsible character and instills rights and obligations to the child. In contrast to informants 3 who teach children with a variety of activities. The informant teaches that in everyday life the child is exposed to various activities both related to individual activities, social and worship. Through the learning activities of the informants instill the character of responsibility and discipline in their students. The character of responsibility is a character that must be possessed by the child to become a responsible person in the future. In addition, according to Lickona (2013) responsibility is an effort undertaken by individuals to take care of themselves and keep others so that he becomes an individual who can carry out its obligations to participate in activities held in the community so as to create a better life again with the community.

The findings also show that the informant tries to instill discipline to the child. This supports Rimm's statement (quoted by Shochib, 2010) which suggests that the key to successful child development potential is discipline. The purpose of the discipline is to shape the child's behavior in accordance with the role that the environment or social group determines. For that in the disciplinary planting required the role of parents at home and teachers at school.

The informants also emphasized the importance of internalizing self-management and time management in the theme of 'my activities'. Time management includes planning activities, allocating, setting goals, analyzing time spent, monitoring, organizing, scheduling, and prioritizing. Time management should be applied to children, so that children can balance time with their activities, such as school, course, and when children are at home, playing, and socializing with peers.

3.1.4 Theme 'My Family'

The research findings in this theme show that all the informants reconstructing this theme become character-driven, that is harmony, respect, manners and affection. These findings support the findings of Sardjijo (2017) who found that to improve the attitude of nationality and humanity teachers need to develop an atmosphere of harmony in school so that it becomes a school culture.

This finding also supports the hope of the Indonesian government as stipulated in the Regulation of the Minister of National Education of the Republic of Indonesia Number 58 Year 2009 on the Early Childhood Education Standard (2009) that the expected growth achieved early childhood is the child is able to recognize the manners and norms in accordance with social values local culture.

3.1.5 Theme 'My Experience'.

In this theme many informants provide information related to various life experiences of children. The experience is distinguished into a pleasant experience and an unfavorable experience, such as sad experience, disaster, or loss of something. Based on this experience the informant reconstructs its content into character education. The character who internalized the informant is grateful and empathy.

The informant also invites the child to pray if there are children who experience unpleasant events, familiarize the child to love his friend who is sad and entertaining his friend who was crying. Fadillah's findings (2012) prove that training in emotional management of children can improve empathic values and respect for children. This finding supports the government's expectation in the implementation stated in the Regulation of the Minister of National Education of the Republic of Indonesia Number 58 Year 2009 regarding Early Childhood Education Standard (2009) that the expected development is achieved by children aged 5-6 years i.e children are able to: 1) cooperate with friends, 2) showing tolerant attitude, 3) Showing empathy.

3.1.6 Theme 'Environment, Clean, Healthy And Beautiful'

The learning of this theme is related to health education both concerning the health of individual children and the child's environmental health. Therefore informants perform the reconstruction of character education related to the character of environmental love and personal hygiene.

These findings support Melati (2012) assertion that teachers can play a role in maintaining early childhood hygiene through day-to-day activities such as dumping trash in place. Personal hygiene can affect the physical and psychological development of children, including health problems and psychosocial disorders. Psychic disorders cause the child to feel less comfortable, lack of love needs, lack of confidence and social interaction disorder (Andarmoyo & Isro'in, 2012).

3.1.7 Theme Things, Animals, And Plants Around me

The research findings show that all informants integrate the character of environmental love through this theme. This finding supports the statement of Jayawardana (2016) that the caring character of the environment can not be obtained instantly, but requires a long process and a relatively long time. Children will have an attitude to care about the environment because of the habituation that takes place continuously. These continuous habituations will be firmly entrenched in the subconsciousness of the mind, so that it will be expressed in daily life (habits) as the value of the characters it possesses. Children who have the character of caring for the environment will have a positive impact on the survival of the surrounding environment. Caring character for the environment that has been embedded from an early age will not easily faded when he grows up. Even with the right education, the character will grow stronger. Children will be more concerned with the existence of the animals, plants, water, soil, and the air around them as an interconnected ecosystem and must be protected.

3.1.8 Theme of Natural Events

In learning the theme 'Natural Events' informants internalize the planting of nature love characters. Only informant 5 adds by internalizing care to others, because natural events in the form of disasters can foster caring character.

These findings support the statement of Jayawardana (2016) that building the character of environmental love is done through the process of appreciating the child by involving his emotions to realize the importance of applying the value of environmental care characters. This process is built also through open questions or through observation of the circumstances surrounding the environment, for example after telling stories and dialogue about environmental awareness. Caring character is embodied in attitudes and actions that always seek to prevent damage to the surrounding environment and develop efforts to repair the already existing environmental damage, always wanting to provide assistance to others and needy communities (Novan, 2013).

This character will cultivate an attitude of caring for the common life which is manifested through sensitivity to the state of others, participation in making positive changes, helping selflessness, tolerance and empathy towards the suffering of others (Rusmakno, 2008).

Furthermore, informants also perform context reconstruction in thematic learning. Reconstruction in this research is the activity of improving the method of character education in thematic learning in primary school. While 'contextual' implies that the reconstruction is adapted to the condition or context of the environment in which the school is carried out. The research findings can be explained in the Table 1.

Table 1. Common themes of structure reconstruction of the context of character education in thematic learning.

Common Theme	Category	Indicator	Example
Structure reconstruction of the context	Reconstruction of behavior-forming methods	Application of modeling methods	Teacher gives an example of eating healthy foods
	Reconstruction of learning method	a. Using role play methods b. Use habituation strategies	Play a role about the role of family and family communication Good behaviour habituation
	Media reconstruction	Use of audio visual media	Use film as a character formation medium

Source: Result of research, 2017

3.2 Research Finding

The research findings are described as follows:

3.2.1 Application of modeling methods.

The findings of this study indicate that teachers use behavior modification technique that is modeling. Character planting in primary school is not easy because it must go through a habituation and done continuously. Modeling moral strategy has a very large contribution in the formation of character, so exemplary as the nature and noble attitude possessed by individuals who deserve to be imitated and made a figure, exemplary teachers in various

activities will be a mirror for the students (Cahyono, 2016). Children also need role models to be able to determine the choice of values in life (Fadilla, 2012).

3.2.2 Using role play methods

To adapt to the culture and social conditions, informants use role-playing methods. The social system is learned by the child through the culture in which the child is located. Strengthening of local value-based characters involves all parties so that students directly can modernize the character. The management of this local potential will become a social capital in the formation of the attitude of nation and state (Na'imah & Dwiyantri, 2015). Role-playing methods make it possible to internalize the culture and social values that the child is in. It's just that the role play method requires the readiness of the teacher, including the readiness of the story scenario. The findings of Na'imah & Dwiyantri (2015) show that teachers need to reconstruct scenarios according to the type of character to be internalized. Through stories the students not only get pleasure or entertainment, but gain character formation.

3.2.3 Habituation Method

Reconstruction of the informant context is also done by innovating with habituation strategies in all learning themes. Cahyono (2016) said that habituation strategy (habituation) is a strategy that uses action approach in instilling value to children. Children are led slowly to be able to interpret the values they are living, such as familiarize the attitude of discipline, get used to pray before studying, dressed neatly and so forth. The new habit can be character if the child is interested and shown by accepting the behavior and repeating it. Of course the habit is not only limited to behavior, but also the habit of positive thinking and positive feelings. The concept built is the habit of the mind, the habit of the heart, and the habit of the hands

3.2.4 Using audio-visual media

The implementation of the 2013 curriculum should be adapted to the environment, culture and social conditions (Erviana, 2016). To make the theme of learning more contextual then informants use audio visual media, that is by inviting children to watch movies with children's theme pious. The film is filled with many characters that appear in the character of its characters.

The use of media is an attempt to explain to students about the character that must be owned by the child. Many other studies have shown that the use of audio-visual media can improve learning achievement. In this research, the informant innovates using audio-visual media as an effort to develop the character of the students in learning the theme of 'my experience' and the theme

of 'environment, clean, healthy and beautiful'. The research findings of Na'imah & Dwiyanthi (2015) proves that the use of methods and media in character education should be done reconstruction of content and context first, in accordance with the realm of moral knowing, moral feeling and behavior. The use of media is not just using media, but the content and context must be tailored to the characters that will be developed.

Based on these findings, then formulated the theoretical model of content reconstruction and the context of character education in thematic learning. Theoretical model formulation is arranged based on the categories that are then selected and analyzed to find the linkage. The category was studied with the most recent point of view to discover the concept of reconstruction. Strauss & Corbin (1990) says that this is the embodiment of axial coding and selective coding as part of the analysis and interpretation of research data with a grounded theory approach. The theoretical model is as Figure 1.

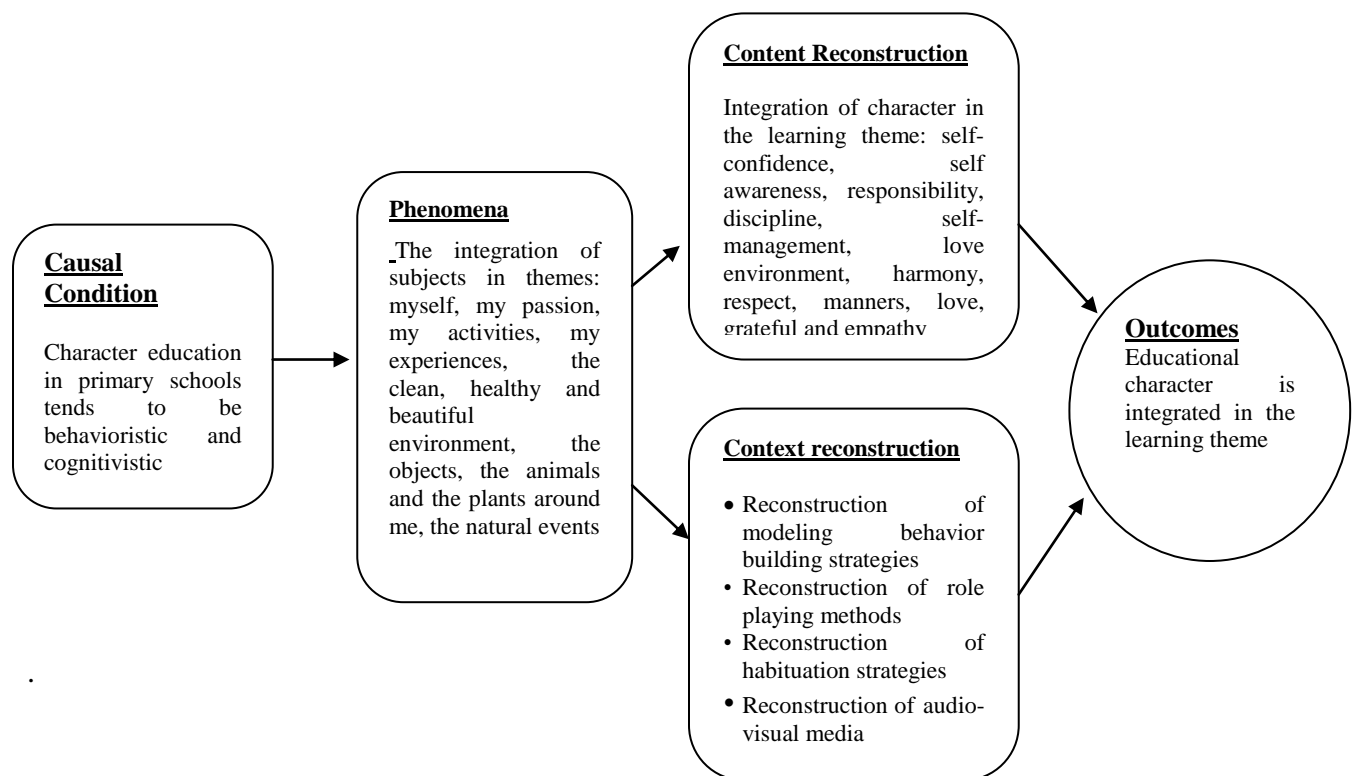


Figure 1. Theoretical model of character education is integrated in the theme of learning

The theoretical model shows that the concept of integrated character education in thematic learning in primary schools is composed of content and context

reconstruction. The reconstruction of the content contains the integration of confident character, self awareness, responsibility, discipline, self-management, love environment, harmony, respect, manners, affection, thankfulness and empathy in the learning theme. The context reconstruction contains a strategy of tailoring character education in a theme appropriate to the student's environmental conditions. Strategy that is done is reconstruction of strategy of forming behavior modeling, reconstruction of role playing method, reconstruction of strategy of habituation, reconstruction of audio visual media.

4.0 CONCLUSION

Based on the research findings, it can be concluded that the reconstruction of character education in primary school thematic learning is done through 2 kinds of reconstruction, namely: 1) Reconstruction of content contains the integration of confident character, self awareness, responsibility, discipline, self-management, love environment, respect, gratitude, affection, thankfulness and empathy in the theme of learning. 2) The context reconstruction contains a strategy of adjusting character education in a theme appropriate to the student's environmental conditions. Strategy that is done is reconstruction of strategy of forming behavior modeling, reconstruction of role playing method, reconstruction of strategy of habituation, reconstruction of audio visual media.

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Chapter 11: Nurse's Job Satisfaction at Health Industry: an Application of Importance Performance Analysis to Community Health Service

Ali Zaenal Abidin, Suwatno, Tjutju Yuniarsih, Disman

Nurses at community health service are required to improve their performance, in order to provide health services to the entire community. Therefore, the nurse's job satisfaction at the community health service should be a serious concern. The purpose of this study is to analyse the nurse's job satisfaction and to recommend the right strategy in improving the job satisfaction of the nurses at community health service. The data used are primary data and secondary data. The data obtained were analysed using validity test, reliability test and Importance Performance Analysis by using SPSS program version 22. The results showed that the strategy to improve job satisfaction of nurses, the pay and promotion factors become the main priority for the improvement. The results of this study can be a reference for the health industry.

Keywords: *Job satisfaction, Nurse, Community Health Service, Importance-Performance Analysis.*

1.0. INTRODUCTION

Job satisfaction is essential for community health service and nurses. Recently, there has been a growing concern in investigating the issue of nursing shortage and turnover which affect the health care center, including the community health service (Mrayyan, 2005).

Community Health Centers has authority and responsibility for maintaining public health in its working area. According to the Decree of The Minister for Public Health Republic of Indonesia No. 128/Ministry of Health/SK/II/2004 (Regulation of The Minister for Public Health), Community Health Service is Technical Service Unit of the District Health Office that takes responsibility for conducting health development in a working area (Ministry of Health Republic of Indonesia, 1991).

Job satisfaction as an attitude that describes how a person feels towards his work as a whole as well as certain aspects of work, as well as attitudes and perceptions influenced by the degree of compatibility between individuals and organizations. Spector also identifies job satisfaction indicators into nine aspects: Pay, Promotion, Supervision, Fringe benefits, Contingent rewards, Operating conditions, Coworkers, Work environment and Communication (Spector, 1997).

Job satisfaction refers to an attitude describing the feeling of an individual towards his or her work as a whole. This also includes their consideration regarding some elements of the work, attitudes, as well as perceptions influenced by the degree of compatibility between the person and the organizations. Job satisfaction is categorized into nine aspects, e.g., pay, promotion, supervision, fringe benefits, contingent rewards, operating conditions, coworkers, work environment and communication (Tourangeau et al, 2006), by which the terms is regarded as “a complex and multifactorial phenomenon” (Kalisch et al, 2010). Ultimately, such traits represent that the job satisfaction of nurses is determined by a number of aspects, such as the relationship between the nurses and their peers as well as their managers (Kalisch et al, 2010).

Many reports reveal that workplace is among the contributing factors of job satisfaction (Coomber, 2007; Manojlovich, 2002; Sarmiento, 2004). It is reported that the satisfaction level of nurses working in private hospitals is higher than those of public hospital nurses (Mrayyan, 2005). This also influences the intention of the nurses to turnover their jobs. Another element of the working environment to consider is the way the nurses communicating with their physicians (Molinari et al, 2008). The importance of working in a favourable place might improve the job satisfaction rate of the nurses. Nevertheless, further in-depth studies are necessary to conduct due to other elements that might impact the satisfaction rate, e.g., educational level and demographic factors that are continuously changing over the time (Coomber, 2007).

A number of studies reported above do not put the factor of demographics on its priority yet the aspect of lifestyle which is shaped by a particular area, for instance, a rural area also influences the preference of nurses to retain to their job (Baernholdt, 2009; Mrayyan, 2005). Rural nurses are likely to opt to incorporate the values embedded in their working area. Still, the preference of lifestyles, whether it is an urban or rural lifestyle, does not indicate the reason for the nurses leaving their employment (Mrayyan, 2005). Therefore, it is possible that other elements within the workplace contribute to the issue of the satisfactory level of a particular occupation.

The example of other elements involved in measuring the level of satisfaction of a worker is empowerment. This aspect has an interrelation with the issue of burnout as well as job satisfaction. Similarly, the dimensions of burnout blame the emotional exhaustion and depersonalization. Another report also reveals that empowerment, which comprised of structural and psychological empowerment, affects the 38% variety in job satisfaction (Molinari, 2008).

Nonetheless, empowerment is considered as the significant factor among others (Sellgren et al, 2008).

It goes without saying that supports from supervisors or managers in a workplace raise the rate of job satisfaction (Chiok, 2001; Lu, 2005). This leadership behavior further impacts on the working climate previously reported (Molinari, 2008). For example, nurses supervised under a good manager reveals to be satisfied with their job. Such a condition also influence the front line manager nurses (Lu et al, 2005).

The complexity of investigating the issue of job satisfaction level among nurses is also reported in other studies. It is revealed that retention and recruitment correlate with the job satisfaction (Manojlovich, 2005). The development of studies also indicates that job satisfaction level, in terms of nurses' position and occupation, are higher when it is measured from the aspect of teamwork (Lee et al, 2008). Other variables, e.g., gender and educational background, are also considered as the determining factors of the satisfaction rate.

The original eight factors could not be replicated satisfactorily using confirmatory factor analysis. Exploratory factor analysis found a seven-factor model rather than the original eight factors previously reported. The validity of this new model was supported. However, similar to the original instrument, weak internal consistency reliability coefficients were found in three of the new MMSS factors (Tourangeau et al, 2006).

Based on the above discussion, the study aims to analyze the determinant factors of nurse's job satisfaction.

2.0. MATERIALS AND METHODS

This research was conducted in 29 community health services in Tangerang Selatan consisting of 168 nurses with a civil servant and non-civil servant status. This research used the census method which is population taking that involved all members of the population as the object of the research. The research was conducted in January 2017 to July 2017. It consisted of primary data and secondary data.

The research used nine factors in the application of job satisfaction, namely: Pay, Promotion, Supervision, Fringe benefits, Contingent rewards, Operating conditions, Coworkers, Work environment and Communication. The data obtained through Importance-Performance Analysis (IPA) by using SPSS program version 22.

Table 1. Scoring Decisions

Score Rating	Assessment
0,00 – 0,20	Very inappropriate
0,21 – 0,40	Inappropriate
0,41 – 0,60	Less appropriate
0,61 – 0,80	Appropriate
0,81 – 1,00	Very appropriate

Table 2. The calculation results of validity test instrument of Job Satisfaction (Actual Condition)

Item	r_{calc}	r_{tabel}	Remarks
1	0,492	0,150	Valid
2	0,491	0,150	Valid
3	0,247	0,150	Valid
4	0,482	0,150	Valid
5	0,665	0,150	Valid
6	0,621	0,150	Valid
7	0,671	0,150	Valid
8	0,637	0,150	Valid
9	0,451	0,150	Valid

Table 3. The calculation result of validity test instrument of Job Satisfaction (Level of Interest)

Item	r_{count}	r_{table}	Remarks
1	0,439	0,150	Valid
2	0,447	0,150	Valid
3	0,246	0,150	Valid
4	0,839	0,150	Valid
5	0,858	0,150	Valid
6	0,883	0,150	Valid
7	0,828	0,150	Valid
8	0,187	0,150	Valid
9	0,275	0,150	Valid

Table 4. The calculation result of reliability test instrument of Job Satisfaction

No	Variable	Chronbach's Alpha	Chronbach's Alpha Minimum	Remarks
1.	Job Satisfaction (Actual Condition)	0.674	0.60	Reliable
2.	Job Satisfaction (Level of Interest)	0.727	0.60	Reliable

Table 5. Results on attributes of Job Satisfaction

No	Factors of Job Satisfaction	Score Actual condition	Score Priority Level
1	Pay	403	816
2	Promotion	405	814
3	Supervision	580	813
4	Fringe benefits	638	802
5	Contingent rewards	639	804
6	Operating conditions	637	801
7	Coworkers	636	806

Table 5. (cont.)

8	Work Environment	626	812
9	Communication	630	811

Table 6. Assessment results on attributes of Job Satisfaction

No	Factors of Job Satisfaction	Level of conformity	Assessment
1	Pay	0.49	Less appropriate
2	Promotion	0.50	Less appropriate
3	Supervision	0.71	Appropriate
4	Fringe benefits	0.80	Appropriate
5	Contingent rewards	0.79	Appropriate
6	Operating conditions	0.80	Appropriate
7	Coworkers	0.79	Appropriate
8	Work environment	0.77	Appropriate
9	Communication	0.78	Appropriate
	Average	0.71	Appropriate

Table 7. Assessment results on attributes of Job Satisfaction (Less appropriate)

No	Factors of Job Satisfaction	Level of conformity	Assessment
1	Pay	0.49	Less appropriate
2	Promotion	0.50	Less appropriate

Table 8. The average score attributes of Job Satisfaction

No	Factors of Job Satisfaction	Score of Actual Condition	Average score of Actual Condition	Score of Priority Level	Average score of Priority Level
1	Pay	403	2.40	816	4.86
2	Promotion	405	2.41	814	4.85
3	Supervision	580	3.45	813	4.84
4	Fringe benefit	638	3.80	802	4.77
5	Contingent rewards	639	3.80	804	4.79
6	Operating conditions	637	3.79	801	4.77
7	Coworkers	636	3.79	806	4.80
8	Work environment	626	3.73	812	4.83
9	Communication	630	3.75	811	4.83

Table 9. The average score

No	Factors of Job Satisfaction	Average score of Job Satisfaction Actual Condition	Average score of Job Satisfaction Level of Priority
1	Pay	2.40	4.86
2	Promotion	2.41	4.85
3	Supervision	3.45	4.84
4	Fringe benefit	3.80	4.77
5	Contingent rewards	3.80	4.79
6	Operating conditions	3.79	4.77
7	Coworkers	3.79	4.80
8	Work environment	3.73	4.83
9	Communication	3.75	4.83

3.0. RESULTS AND DISCUSSION

To support the finding, validity, and reliability test had been done. Test results Importance-Performance Analysis can be seen in Fig. 1, Fig 2 and Fig. 3.

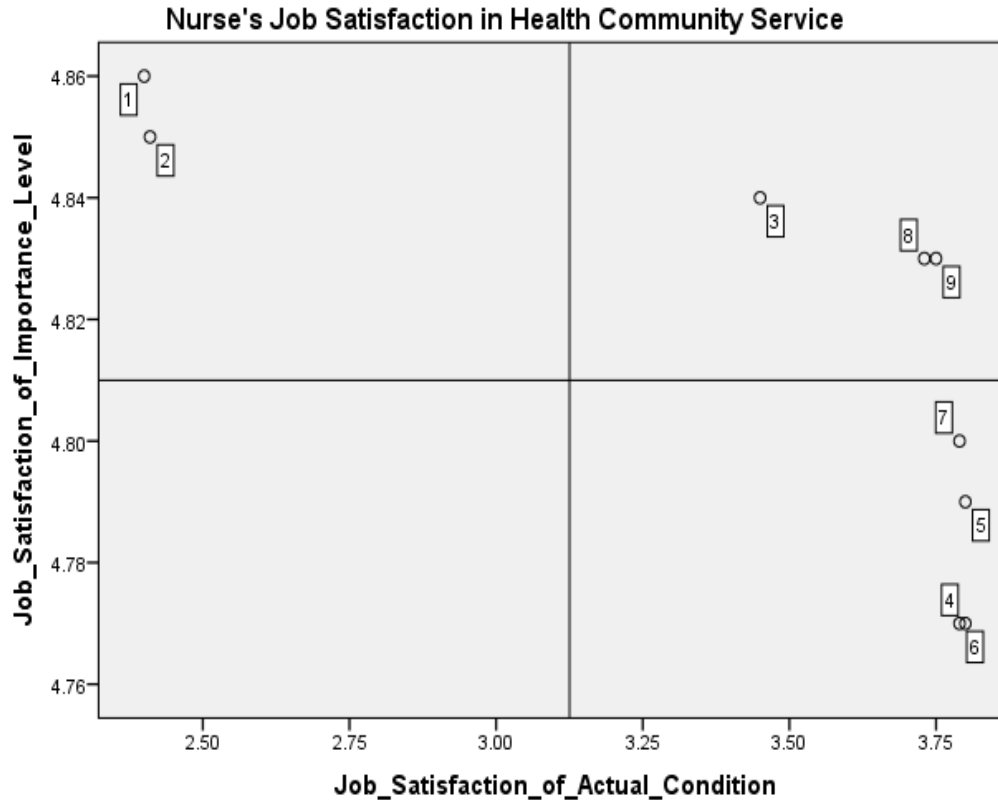


Figure 1. Importance Performance Analysis

Quadrant I (Concentrate Here) Attribute Number: 1, 2	Quadrant II (Keep Up The Good Work) Attribute Number: 3, 8, 9
Quadrant III (Low Priority) No Attribute: -	Quadrant IV (Possible Overkill) Attribute Number: 4, 5, 6, 7
Decision-making: Determinant Factors of Nurse's Job Satisfaction	

Fig. 2. Cartesian Diagram of Nurse's Job Satisfaction (Attribute Number)

Quadrant I (Concentrate Here) Attribute name: - Pay - Promotion	Quadrant II (Keep Up The Good Work) Attribute name: - Supervision - Work environment - Communication
Quadrant III (Low Priority) Attribute name:	Quadrant IV (Possible Overkill) Attribute name: - Fringe benefits - Contingent rewards - Operating conditions - Coworkers
Decision-making: Determinant Factors of Nurse's Job Satisfaction	

Fig. 3. Cartesian Diagram of Nurse's Job Satisfaction (Attribute name)

Figure 1 above finding pay and promotion factors are in quadrant 1 (concentrate here), which means that pay and promotion factors that are in this quadrant have a high importance

level, but the performance is not in accordance with the expectation. Pay and promotion factors are the main priority for immediate concern by community health service itself. The results showed that the determinant factors to improve job satisfaction of nurses, pay and promotion factors become the main priority that must be improved.

4.0. CONCLUSION

The conclusion showed that job satisfaction is in line with the nurse expectation, except for pay and promotion factors. To improve the nurse's job satisfaction in Health community service, the pay and promotion factors should be the priority. Further research is expected to link this research with other variables.

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Chapter 12: Islamic Philanthropy Based on Masjid in Banyumas District

Makhrus, Wage

This study aims to find out about the form of collection, management and potential of mosque-based philanthropy in Banyumas Regency. This research uses descriptive qualitative approach. While the data collection techniques using documentation, observation and interviews. The object of this research is the mosque in Banyumas Regency taken by sampling. Analysis of data used in this study is data obtained and presented descriptively begins by describing has been disclosed by respondents either directly, through writing or direct observation. The process of data analysis is done by starting to review all the data collected from various sources that have been predetermined.

The results of this study indicate that the Islamic mosque-based philanthropy fundraising form in Banyumas District is divided into three forms: firstly, tentatively carried out the collection and management of mosque funds is done by takmir or treasurer of the mosque without any special structure. Second, the periodic committee, this form of management is done by the board of the mosque to form the committee of collection and distribution of Islamic philanthropic funds. Thirdly, the mosque board established an amil zakat institution (LAZ), this form of management is more organized and programmed in the process of collecting and distributing Islamic philanthropy that was collected. The form of program and management of Islamic-based philanthropy funds in Banyumas District is divided into two forms of distribution: (a) charitable, this is done to finance routine activities or short-term program distribution in the form of assistance. (b) empowerment, as seen by the existence of school management and assistance to teachers. Research findings of mosque-based philanthropic fund potential in Banyumas Regency reach Rp. 2.437.230.000 each year, if multiplied by the number of mosques according to Badan Pusat Statistik in 2015 that there are 2,057 mosques in

Banyumas Regency, then there is the potential of mosque-based Islamic philanthropy funds in Banyumas regency of Rp. 139,260,613,458 every year outside the endowments and collection conducted by the mosque and surau.

Keywords: *philanthropy, Islam, mosque*

1.0 INTRODUCTION

The mosque became the most important activity center in the life of a Muslim, both as a place of worship, social-religious activities, and the epicenter of Islamic civilization. It can be seen in the history of Islamic civilization about the importance of the mosque as the center of Islamic intellectuals as did the Umayyah dynasty on Abdul Malik government in building the dynasty of power in Damascus build mosques in various provinces and the greatest is the construction of Doem of the Rock (*Qubbah al Sahra*) above the Al Aqsa mosque. This custom was passed on by his son Walid ibn Abdul Malik who then mended the streets, built institutions for lepers, built hospitals and also built mosques as his father did as the center of intellectual studies (Fuadi, 2011). In addition, the existence of the importance of mosques in the history of Islamic culture and civilization is also reflected in the glory of Islam in Baghdad, Cairo, and Qasam al Zahra, and others. Therefore, the existence of the mosque becomes an identity can not be separated from the identity of a muslim, both in the context of personal identity and the historical development of Islamic civilization.

The journey of Islamic leadership in the vortex of world history mentioned above. capable of producing the center of civilization, including the mosque as an intellectual center civilization. This happens because of the expansion of Islam to some areas not only aim to create influence, but to build awareness through science. Damascus as the center of Islamic intellectuals during the period of the Umayyah Caliphate gave much room for knowledge amid the opposition and the turmoil of Mu'awiyah and Ali bin Abi Thalib. The intellectual process carried out is still done with the pattern of translating manuscripts though individual by keeping the existence of the mosque as a spiritual center also became the center of intellectual

The existence of a mosque in the context of modern Muslim life becomes a non-profit organization that is able to collect public funds in various voluntary socio-religious activities, so that the existence of philanthropy funds conducted by the mosque becomes the thing that must be maximized and managed nicely. Based on the results of research conducted by Adnan (2013) locally in Yogyakarta shows that Islamic philanthropy which in this case infaq mosque reaches 269.9 billion which still settles and not yet well utilized, therefore needed coordination and consolidation between mosque managers in enlarge activity donation to the dhuafa, helping

mosques that still need funds in development, as well as organizing mosque management activities.

Activities undertaken by the mosque basically can not be separated from the function of the mosque itself. According to the Indonesian Mosque Council (DMI) there are three functions of the mosque, namely: first, the mosque as a place of worship, whether it concerns mandatory worship and worship is not mandatory. Second, the mosque as a forum for community development through various facilities and infrastructure owned by each mosque. Third, the mosque as a center of communication and unity of people in various issues. Therefore, the existence of the mosque should be viewed and understood in the wider pemahaman for the program and the utilization of a mosque can be mobilized collectively by the community, especially the community around the mosque is located.

In connection with the function of the mosque, when viewed from a historical perspective, the existence of mosques in the time of the Prophet difungsikan in some forms such as a means of worship, place of learning, place of masyawah, care for the sick, and dormitory. Thus, the understanding and practice of the mosque's position in the life of modern society should be viewed as a legacy of the importance of collectivity in the life of Muslims. In order to make the mosque as the basis of collective movement of ummah, DMI as the umbrella organization of mosque all over Indonesia in cooperation with Majelis Ulama Indonesia (MUI) and Indonesia Bergerak Selamatkan Bumi (Earth Awareness) launched Eco-Masjid program as a national movement of environment based recovery mosque. Hopefully the program can be a means of socialization and appealed to the people by preserving and preserving the forest and the environment from through da'wah in the mosque, both oral and written. The existence of Eco-Masjid movement is a creative movement that can provide understanding to the community about the management of mosques with an environmentally friendly approach, so that the program can be implemented in the form of the theme of Friday sermons with the theme of hospitality and efforts to keep the environment, designing environmentally friendly mosques, managing garbage, water users of ablution for the dark fish, keeping the mosque clean as a worship service, and conducting race activity through teenage mosque about environment friendly (Muhammad, 24/10).

The importance of mosque management in various religious social activities can be seen with the efforts of Islamic philanthropy fundraising, for example in the form of zakat, infaq, shadaqah, and wakaf fund collection. Moreover, almost as a major development and revenue for mosque activities management activities are closely related to generating funding, ranging from planning to operational (activities) carried out by the mosque. Therefore, the existence of the form of understanding and practice of the broader meaning of the mosque becomes very important so that the effect of the difference of a mosque really gives a positive impact on the empowerment and independence of the people.

The existence of mosques locally in Banyumas Regency, according to the Central Bureau of Statistics Banyumas there are 2,057 mosques, 577 mushalla and 5,625 langgar or surau (www.banyumaskab.bps.go.id). While the ownership is a wakaf status, a property rights certificate, and the right to use, even listed in the information system mosque Kemenag only recorded 51 mosques (simas.kemenag.go.id). However, regardless of the differences in data on the number of mosques, what should be a common concern is the management of the mosque in Banyumas Regency is able to operate and implement good social religious activities, especially in the management of Islamic philanthropy funds, most of which donations come from the donations of pilgrims collected through routine recitation activities, Friday prayers, as well as the existence of a permanent donor mosque. Therefore, the study of Islamic philanthropy becomes an interesting thing to study, because in addition to religious issues, but has social, economic and political impacts (Abidin, 2013)

2.0 METHODS

The location of this research was conducted in Banyumas Regency by choosing a mosque that has been carrying out activities and programs for collecting and managing Islamic philanthropic funds. The selection of research objects in Banyumas Regency is due to the lack of Islamic philanthropy research based on madjid and easiness in obtaining research data. The source of this research is descriptive qualitative that aims to get a detailed picture of a phenomenon that is usually a pattern of phenomena discussed. While the words and the rest of the action is additional data (Moleong, 2001). So in this case, the type of data used is primary data and secondary data. Primary data is data obtained from the field either through wawacara with the authorities (Sunggono, 2007: 37), to provide information and problems raised at the time of research, then held interviews takmir mosque. While secondary data is supporting data that the author use is the data documentation and other archives related to the problems that the author carefully. Data collection techniques were conducted by interviewing the managers (takmir) of the mosque, the official documentation of the mosque related to Islamic philanthropic fund management found in the management (takmir) mosque, and observation of the mosque in Banyumas Regency.

Data analysis used in this research is data obtained and presented descriptively starting by describing what has been expressed by respondents either directly, through writing and direct observation. In addition, the adequacy of library data studied has been previously collected and the data collected are analyzed qualitatively by deductive and inductive methods. The process of data analysis is done by starting to review all the data collected from various sources that have been predetermined. The data comes from interviews, field notes or other documentation. Then the data is reduced by creating an abstraction which is then organized in unit or detailed form. From the form of these units, then categorized and then carried out examination of data to avoid

invalidity. After tested its validity, the data is then used as a guide to answer some formulation of research problems and then ended with a conclusion analysis by the author.

3.0 RESULTS

The mosque is one thing that is inseparable from the life of a Muslim, both individually and socially. Thus, the existence of the mosque is not only used as a place of worship, but became the center in solving various problems of Muslims, both political economic and social. Therefore, in the early era of Islam mosque function into episentrum activities of the Muslims who are able to provide many solutions to the problems including the formation of the glory of Islam. Efforts to make the mosque as an epicenter of all forms of activities of Muslims continue to be done in various forms from the past until now. One of them by making the philanthropy of Islam as an activity that is not released from mosque activities. It can not be separated from the existence of mosque which development and operational done collectively and independently by society through Islamic philanthropy fund that is zakat, infak, shadaqah and wakaf. Therefore, the collection and management of Islamic philanthropic funds is continuously implemented for various religious social activities conducted by the mosque.

Islamic philanthropy based mosque in Banyumas Regency in its management almost with that done by some mosque in Indonesia. The form of collection and management of Islamic philanthropy funds is at least divided into three forms, namely: first, done tentatively, where the collection and management of mosque funds conducted by takmir or treasurer of the mosque without any special structure. secondly, the periodic committee, this form of management is done by the mosque board to form the committee of collection and distribution of Islamic philanthropy funds, usually the committee that formed the stewardship period from 1 to 5 years. Thirdly, the mosque board established an amil zakat institution (LAZ), this form of management is more organized and programmed in the process of collecting and distributing Islamic philanthropy that was collected. Usually this mosque-based LAZ is founded by mosques that already have regular pilgrims, regular donors and potential Islamic philanthropic funding as seen in the Fatimatuz Zahra mosque.

The form of Islamic philanthropy fundraising above is one of the efforts undertaken by the community in encouraging charity awareness. So that some activities of Muslims can be done independently by providing space on the collective strength of Muslims in contributing to the various problems of Muslims themselves and society in general. Therefore, the form of Islamic mosque-based philanthropy fundraising in Banyumas Regency is as follows:

Table 1. Form of Islamic mosque-based philanthropy in Banyumas Regency.

Question	Selection				
	SA	A	H	LA	D
Mosque management has been running well which is marked by the structure of management and mosque activities program	49 %	51 %	0 %	0 %	0 %
The mosque receives the distribution of zakat maal (treasure) by the pilgrims or the community around the mosque	25 %	63 %	0 %	5 %	8 %
Mosque administrators regularly report on the collection of zakat maal collected to muzaki (the party paying zakat) and the mosque congregation in general	27 %	54 %	3 %	5 %	11 %
The mosque received the distribution of zakat fitrah from the pilgrims or the community around the mosque	41%	51%	0 %	0 %	8 %
The mosque management reports transparently about the collection of zakat fitrah to the pilgrims every time the collection of zakat fitrah.	32 %	59 %	0 %	0 %	9 %
Funds of infaq and alms collected by the mosque are published regularly collecting reports to pilgrims	40 %	56 %	2 %	2 %	0 %

Description: Strongly Agree (SA), Agree (A), Hesitate (H), Less Agree (LA), Disagree (D).

Based on table 1 above shows that the management of the mosque in Banyumas Regency has been running well which marked the respondent's answer mapped 49% strongly agree and 51% agree, this indicates the existence of mosques in Banyumas regency already has the management of the mosque. While it is related to Islamic philanthropic fundraising, all mosques have their own way of collecting, where the mosque receives the distribution of zakat maal (treasure) by the pilgrims or the community around the mosque states 25% strongly agree, 63% Agree, 5% less agree and 8% disagree. In order to provide the transparency of the zakat fund collection, the mosque administrators regularly report on the collection of zakat maal collected to muzaki (the zakah-paying party) and the mosque congregation in general, indicated by 27% saying strongly agree, 54% agree, 3% hasitate, 5% less agree and 11% disagree

Another program that is usually done by mosque managers is receiving the distribution of zakat fitrah from the pilgrims or the community around the mosque shown by 41% strongly agree, 51% agree and 8% disagree. While from the reporting point the mosque officials reported transparently about the collection of zakat fitrah to the mosque worshipers every time the collection of zakat fitrah shown 32% stated strongly agree, 59% agreed and 9% disagree. Therefore, most of the collection of zakat fitrah in Banyumas Regency done periodically committee, this is because the distribution of zakat fitrah easy to channel to the needy dhuafa.

The existence of the mosque in addition to collecting zakat maal and zakat fitrah is also associated with the collection of funds infak and alms, either by providing infak box until the special counter receipt of infak and shadaqah. Because of the collection of infak and shadaqah always used to finance the operational activities of the mosque. Thus, regarding the reporting of infaq and alms donations collected by the mosque are published reports on the gathering periodically to the pilgrims shown by 40% strongly agree, 56% agree, 2% hesitate and 2% less agree.

Table 2. Distribution of infaq funds and charity mosque in Banyumas Regency

Infak and shadaqah	Regular expenses	Implementation of educational facilities
1. Help the orphans	1. Illumination	1. Taman Pendidikan Qur'an (TPA)
2. Fakir poor	2. Cleanliness	2. Library
3. The traveler	3. Soundsystem	3. Review of exegesis
4. Da'wah	4. Regular recitation	4. Training and skills
5. Visiting sick people	5. Board meetings	
6. Tidy up or clean the mosque	6. Amaliyah Ramadan	
7. Renovation	7. Honor of janitor	
8. Purchase of prayer equipment		
9. Disaster assistance		

Distribution of infaq and alms funds prioritized to certain parties, such as the travelers or the dhuafa, the mosque determines certain conditions for the distribution of funds infak and alms among them that is, deposit the Family Card, Identity Card, certificate can not afford , and residents of the mosque area are located. However, for the latter the final requirement as a resident of the mosque area was abolished.

The form of community empowerment program that is done by providing scholarships, incentives to TPA teachers, construction of school facilities and others. Therefore, the mosque management reporting through the media information boards up to the bulletin so that the donors get information about the results of fundraising up to its use, so that the fore is needed assistance of mosque management that causes the mosque fund management to be maximal, credible and accountable.

The existence of mosque-based Islamic philanthropic activism in Banyumas Regency has always had a positive impact on the life of Muslims and society in general. Therefore, more serious efforts are required in increasing the revenue and management of mosque-based philanthropy funds as a collective and professionally managed movement. Moreover, based on the findings in this study shows that Islamic fund-based Islamic philanthropy funds Banyumas District reached Rp. 2.437.230.000 each year, consisting of zakat maal Rp. 626.900.000, zakat

fitrah Rp. 386.050.000 and infak Rp. 2,437,230,000. The above mentioned above, continues to grow larger, when multiplied by the number of mosques as data Central Bureau of Statistics (BPS) of Banyumas Regency in 2015 that there are 2,057 mosques in Banyumas Regency. That is, if the calculation of total revenues mosque funds above, then multiplied by the total number of mosques based on data BPS Banyumas, then there is the potential of mosque-based Islamic philanthropy funds in Banyumas regency of Rp. 139,260,613,458 every year. In addition, the potential will continue to grow, because the data is still outside the endowments and collection conducted by mosque and surau because it is not used as a variable in this study.

4.0 DISCUSSION

Islamic philanthropy and mosques are two things that are closely related to each other in every span of Islamic history. Where Islamic philanthropy in this case zakat became one of the foundations of a Muslim's faith, even in the early era of Islam who are reluctant to pay zakat fought. Meanwhile, the mosque as a place of worship of Muslims not only provides the needs of the fulfillment of the needs of spiritual facilities and spiritual services, but has a vision of independence and prosperity in building civilization of Muslims to this day. Therefore, the existence of a mosque can be built by mobilizing Islamic philanthropy funds collected in collective, independent and creative in various places by the community.

The importance of the existence of Islamic philanthropy for the life of Muslims, as well as its impact on people's lives, has led the state to contribute to various regulations, such as the provision of zakaf and wakaf laws. The State sees that the regulation of Islamic philanthropic fund management will lead to a more professional, credible and accountable form of management, thus enabling the program to have long-term and empowering impacts. In addition to other impacts, for the founders to respond to the needs of donors, the government can provide additional funds and civil society can get help collectively (Anheier & Leat, 2013).

The form of mosque-based Islamic philanthropy fund collection in Banyumas Regency based on the above research is divided into three patterns of collection form: first, done tentatively, secondly, periodic committee, third, mosque board to form amil zakat institution (LAZ). While the collection of funds with tentative and committees is a form of management that is more widely used by mosque managers, this is because the form of collection is simple and not troublesome. Typically, the first and second collection forms operate more massively during Ramadan or before Idul Fitri and Idhul Adha. However, things that should be of interest in the form of Islamic philanthropy funding tentatively and the committees must consider the long-term aspects of program management, because usually the two forms of fund-raising put forward the management (channeling) in a short-term and neglect the community empowerment has a long-term program direction.

The form of Islamic philanthropy fundraising with the mosque's initiative to form an amil zakat institution (LAZ) is something that should be appreciated. Because the existence of LAZ will provide easy management of Islamic philanthropy funds not only easy to collect, but also will be easy to be distributed and published. This is because LAZ already has a planned and systematic program from the planning stage of the program until its realization. However, things that should be of concern to the mosque-based LAZ are related to LAZ's legal liguity itself.

Based on Law no. 23 Year 2011 Article 18 Point 1 mentioning the establishment of LAZ shall obtain the approval of the Minister or the official formed by the Minister. Then at Point 2 of the Law the permission is granted if eligible: (a) in the form of legal entities (b) getting BAZNAS recommendations, (c) having sharia supervision, (d) having technical, administrative and financial capabilities to implement (e) is non-profit, (f) has a program to utilize zakat for the welfare of the people, (g) willing to be in sharia audit and finance periodically.

If the mosque-based LAZ must meet the standards of the act above, it will be a lot of LAZ that will close and fold mats. This is because the mosque-based LAZ was founded on the initiative of the community in managing Islamic philanthropic funds. Therefore, it can be done by synergizing with National Amil Zakat and LAZ Agency already have operational permit, so that in LAZ-based operationalization can be a collecting unit of zakat as has been done by LAZISMU to mosque which has affiliation with Muhammadiyah. Moreover, the management of Islamic philanthropy conducted by LAZISMU Banyumas Regency is an example where the fund of the Ummah can be managed in an institutionalized and transparent manner that not only prioritizes service, but has been oriented to self-reliance and community empowerment through a well-designed program.

Management of Islamic philanthropy funds in Banyumas Regency is divided into two forms of distribution: first, charitable, this is done to finance routine activities or channeling programs that are short-term in the form of assistance. Second, empowerment, as seen with the existence of school management and assistance to teachers. In relation to the amount of program financing portion, the distribution in the form of charity is more dominant than empowerment. This may be due to the channeling in the form of charity more easily channeled without going through procedures, processes and long-term impacts, while empowerment actually requires procedures, processes and long-term impacts. The choice of distribution in the form of charity or empowerment is basically tailored to the needs of the recipient (mustahik./dhuafa). Therefore, the initial analysis in fulfilling all forms of data needs that need to be the thing that will determine the success or failure of a program, so that when evaluated at the end of the implementation of the program, there is no assessment that states the wrong program or not on target.

The caritative program in managing modern Islamic philanthropy is becoming abandoned, although it still exists, the program is excluded for certain programs. Modern Islamic philanthropy institutions prefer empowerment programs so that the direction of the program can

continue to be evaluated and can be seen the impact felt by the mustahik / dhuafa, both at the time of pre-implementation, the implementation process and post-program implementation. However, the form of a caritatif program in managing mosque-based Islamic philanthropy funds in Banyumas Regency is fairly good, since all the funds collected are not all allocated for routine expenditure, but also allocated for the distribution of infak and the fulfillment of educational facilities. Whereas if the level of fund collection philanthropy can be used for the benefit of welfare and justice of society, so that not only considered as zakat practice just merely the fulfillment of religious duties and the preservation of social stability (Latief, 2014)

In order to maximize the collection and management of mosque-based philanthropy funds in Banyumas Regency, things can be done by mosque officials, among others, first, establishing a mosque-based LAZ by meeting the rules of law. Second, syndicate program reporting to mosques that already have affiliation with religious organizations that already have national and professional LAZ, such as Nahdhatul Ulama (NU), Muhammadiyah, Al Irsyad and others. Third, the mosque can be a collection unit of zakat BAZNAS. Therefore, the management of mosque-based philanthropy is closely related to mosque organizing in general ie, mosque management (man), funds (money), mosque facilities (materials) and jamaah (market) that requires creativity and appropriate methods in the implementation (Sochimim, 2017). The mosque activity in its operational process not only provides spiritual activities, but also various issues related to social issues such as Islamic philanthropic fund management. In the future, the management of Islamic philanthropy based on waqf can also be developed to improve the welfare of the poor. One strategy is to work with donor agencies that have concentrations in poverty alleviation, such as Islamic Devepment Bank (Shirazi, 2014).

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Chapter 13: Organizational Culture on Internationalization of Universitas Muhammadiyah Yogyakarta Indonesia

Ade Rusman, Sugiyono, Suyanto

Higher education helps accelerate economic industrialization, by providing professional, technical and managerial skills. In the current context where there is a transformation of society as a knowledge society, higher education not only provides an educated workforce, but also a knowledgeable workforce whose role is vital in compensating for the rapid pace of knowledge economy growth. The purpose of this research is to find organizational culture of internationalization of Universitas Muhammadiyah Yogyakarta (UMY). This organizational culture research using ethnography qualitative method, that is by doing observation, documentation and interview. Information is collected from informants consisting of key figures. The resulting data is intended to answer all the research questions that have been prepared. Furthermore, the data were analyzed qualitatively and systematically described. Internationalization program of UMY was begun since 2015. Universitas Muhammadiyah Yogyakarta has three cultural values that is seriousness, sincerity and ukhuwah islamiyah (Islamic values). Based on these three values, the most contributing to the internationalization program of UMY is the value of seriousness.

Keywords: *higher education, organizational culture, Universitas Muhammadiyah Yogyakarta*

1.0 INTRODUCTION

Higher education teaches ethics, morals, regular living habits, creates an attitude of inclusiveness, and opens the possibility of changing attitudes necessary for individual socialization and modernization and the overall transformation of society by protecting and promoting social values. In addition, higher education also helps establish a strong nation-state, teaches democracy by producing more responsible citizens who actively participate in

community, political, social, cultural and economic activities, with community members Who understand, interpret, preserve, promote and promote national, regional, international and historical cultures. In this context higher education teaches pluralism and cultural diversity (Tilak; 2008:453-454). The development of higher education is rapidly changing, demanding the education system to respond in order to ensure the quality of life in the wider community can be sustained sustainably. These changes stem from a variety of factors such as the development of bombastic science and information, the shifting of information-based services, a move towards a more global direction, participation in broader decision making and the demand for a more accountable and transparent education. Some realities of change such as the rapid development of science and information are supported by the development of data storage and communication devices. The development of the shift from the company towards more information-based industry services requires thinking skills, communication skills and decision-making skills. The growth of the trend toward a more global, trans-national economy and towards a more global dependence, is also a present phenomenon. In addition, there is a change in the current decision making by involving more variant groups in entity, gender, and different age groups. Finally, the sustained demands in education are more accountable and transparent. Higher education is required to be proactive and always initiate positive things, focus on quality and programs centered on the learner. To achieve this goal, high education institutions require a development model that can test every process in an effort to promote sustainable and permanent reforms. Reform from higher education requires a model of quality development with evidence of success that has been tested and implemented in business and industry, but adapted to the uniqueness of academic needs. Educational institutions need to maintain quality seriously through systematic media. Such reforms require a long-term, comprehensive approach to addressing every issue.

Globalization also encourages higher education institutions to enhance competitiveness towards world class universities through international cooperation process. International cooperation is one of the ways in which a country responds to globalization and improves competitiveness, but is expected to respect the individuality of the nation (de Wit, 2006:3, Knight & de Wit, 1997:15). In many developing Asian countries, international cooperation is generally regarded as a strategy to improve institutional competitiveness, reform the system of higher education and change organizational culture. Asian universities are keen to adopt global standards for faculty recruitment and evaluation, reforming academic programs, and degree standards. International cooperation is carried out through the signing of mutually beneficial agreements with foreign institutions for exchange programs, joint titles, as well as exchange of students and faculty members. In addition to the economic benefits, in general international cooperation conducted through various programs such as student mobility and inter-state staff, the application of an international curriculum, an international network of research and open teaching systems as well as recognition of the quality of higher education between countries, both at the regional and international levels have various (2) student mobility and inter-campus

staff have given rise to new perspectives and a little more awareness of the importance of building cooperation, 3) students and staff have the opportunity to gain recognition at International level, and 4) internationalization offers a new perspective in quality assurance where quality is an important part in building the campus environment (Bordean & Borza;2013:99).

The local culture that is upheld is a culture that has been initiated by Ki Hajar Dewantara, as a forerunner of thinking about education in Indonesia. On the other hand Muhammadiyah also has a priority movement in the field of education that still brings Indonesian culture within its organizational system. Organizational culture in muhammadiyah universities is a reflection of the history of muhammadiyah, which was built socially by the founders of the organization. Universitas Muhammadiyah Yogyakarta (UMY) in 2013 has been accredited by BAN-PT with accreditation value A. UMY is a muhammadiyah university that has a strong muhammadiyah organization culture, which is difficult to change because it is so strongly held by members of Muhammadiyah organization. This can be seen from everyday life in UMY environment, that the values, beliefs and assumptions prevailing in Muhammadiyah organization are widely adopted by all academic community. This is driven by the muhammadiyah cultural traits that uphold the values of Islam based on Al-Quran and Hadith, where all members of Muhammadiyah have been given guidance in the form of pocket book of life guide muhammadiyah. In its development, UMY has increased. The superiority of UMY certainly can not be explained only from observable aspects or quantitative dimensions. The quality of UMY is influenced by various variables. So far, more research has focused on variables that are classified as hard elements in organizations such as organizational structure, facilities and infrastructure, funds, policies, curriculum, student input and so on. This certainly can not explain the factors of UMY progress comprehensively. Thus it is necessary to conduct research that aims to find the organizational culture at Muhammadiyah University of Yogyakarta.

2.0 MATERIALS AND METHODS

Based on the definition and characteristics of qualitative research, to study the internationalization organization culture of Muhammadiyah University of Yogyakarta using qualitative method with phenomenological approach. Qualitative method was chosen because the researcher wanted to know deeply the organization's cultural strategy which includes values, personality, ritual and leadership role in the dissemination of value and the implementation of quality culture in improving the quality of the institution that encourage the stronger internationalization within UMY academic environment. This research seeks to elicit distinctive features, special characters in the form of concepts, norms, good views related to shared values of association and specificity involved and applicable in higher education muhammadiyah. This

study uses qualitative procedures. A way to study the social interaction of human in naturally occurring situation. The researcher plays a critical role in the process by gathering data and making sense of or interpreting the phenomena that are observed and revealed (Lichtman 2014)". In qualitative research that became the main instrument in the research is the researcher himself (Sugiyono, 2009). Sampling of data source of this research using purposive sampling technique and snowball. Purpose sampling is sampling based on the choice of research on what aspects and who are focused on the current and current situation throughout the study so that the samples taken are the leaders include Vice-Chancellor, Director of International Affairs Office, Former Director of Office of International Affairs. The number of respondents consists of 3 sources of informants consisting of 1 person from the Vice Rector, 1 person from the Director of the Office of International Affairs, 1 person from the former Director of the Office of International Affairs. The data collection procedure is carried out under natural conditions, meaning that there is no engineering or provision of a treatment at the data source with through deep observation and interviews. The analysis uses ethnographic design to describe, analyze, and interpret a group's culture from patterns of behavior, beliefs, and languages that evolve over time. Ethnographic design are qualitative procedures for describing, analyzing, and interpreting a culture group's shared patterns of behavior, beliefs, and language that develop over time (Creswell, 2012).

3.0 RESULTS AND DISCUSSION

The Preamble of the 1945 Constitution, paragraph 4, states that the State participates in maintaining world order, this statement underlies the Indonesian foreign policy which is free and active in the interests of the nation. This principle also applies in the implementation of cooperation with universities and organizations abroad in the context of internationalization. The policy of internationalization implementation in Indonesia has been elaborated in various laws and regulations governing international cooperation. The development of internationalization of higher education in Indonesia has gained a firm footing with the establishment of Law Number 20 Year 2003 on the National Education System, which is mandating the development of education units at all levels including higher education that has an international level. International level is defined as the reputation and quality of universities are recognized internationally and the competence of graduates is equivalent to graduates of world-class quality colleges. Because it is a mandate of the law, then the government must hold an international higher education unit. In the Law on National Education System Number 20 Year 2003 resulted the Decree of the Minister of Education and Culture of the Republic of Indonesia on Cooperation of Higher Education Number 264 / U / 1999 is considered inadequate then in 2007, issued a new policy as stipulated in the Minister of National Education Regulation Indonesia Number 26 Year

2007 concerning cooperation of Universities or Other Institutions Abroad. The form of cooperation of universities in Indonesia with universities abroad are:

1. Contract management
2. Twin program
3. Dual degree program
4. Credit transfer program
5. Exchange of professors and / or students in academic activities
6. Utilization of resources in academic, research and community service activities
7. Publishing together scientific papers
8. Organizing together scientific meetings or other scientific activities; and / or
9. Other forms of cooperation deemed necessary to improve the performance of universities.

Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 14 Year 2014 on Cooperation of Universities. College cooperation is an agreement between universities in Indonesia with universities, business world or other parties, both inside and outside the country. The implementation of internationalization of higher education, provided for in Article 48 which states that:

- a. Cooperation of Indonesian universities with foreign universities can only be conducted institutionally by the two leaders of the universities concerned;
- b. Cooperation of Indonesian universities with business world and or other parties abroad can only be conducted institutionally by university leaders concerned with 1 (one) or more business leaders and or other parties abroad;
- c. Such cooperation can only be conducted if the foreign university has been accredited by the accrediting institution that is recognized by the country and for the business world and or foreign party has been registered in the country.

The challenge of quality in higher education is still a matter of concern, given the obstacles to its implementation in higher education unlike in the business and military. The transition of total quality implementation in education must be done gradually, because education tradition is different from other aspects. Furthermore, efforts in the implementation of quality management philosophy in the educational regulation sometimes experience resistance especially in the academic area

Each organization has a distinctive culture that distinguishes one organization from another. Muhammadiyah Higher Education founded by Persyarikatan Muhammadiyah has a unique character in carrying its mandate, which is to improve the education of the nation as well as an institution that carries the vision and mission of Muhammadiyah organization. Persyarikatan Muhammadiyah became one of the main sources of organizational culture values on the business charity under its auspices so that with this close relationship will underpin the pattern of Muhammadiyah Higher Education development. Some Muhammadiyah Higher Education such as Muhammadiyah University of Surakarta (UMS) in Central Java, University of

Muhammadiyah Malang (UMM) in East Java, Ahmad Dahlan Yogyakarta University has become the main choice of prospective students because of its quality no doubt. Furthermore, the University of Muhammadiyah Yogyakarta (UMY), which is relatively young because it was born in 1998, has been recognized nationally for obtaining A value on the accreditation assessment of institution in 2013. This progress is possible because of the change of Muhammadiyah Higher Education organization culture into a quality organization culture and support from all academic community as well as conducive organizational environment.

Universitas Muhammadiyah Yogyakarta (UMY) was born in the middle of the city of Yogyakarta because it is driven by a deep awareness and responsibility. Education including higher education which is essentially the responsibility of all Indonesian people. Beginning with small discussions by a group of Muhammadiyah activists who took place at Madrasah Mu'alimin Muhammadiyah, then developed in the midst of a broader forum of Muhammadiyah intellectuals, it was finally concluded that it was deemed necessary to immediately establish the Muhammadiyah University in the city of struggle and the birth of Muhammadiyah for the first time. All this was then submitted to the head of the Muhammadiyah region of Yogyakarta Special Region (DIY), the regional leader of Muhammadiyah DIY issued a letter d. A-1 / 01.E / PW / 1981, dated March 26 about the establishment of Universitas Muhammadiyah Yogyakarta. Furthermore, based on the Decree of Muhammadiyah Central Leadership Number. E / 1/1996/1982, on the management of UMY, then UMY its guidance is under Muhammadiyah Central Leadership. To implement the internalization of values in higher education Muhammadiyah requires new strategies that support and accelerate this process. Adopt a key strategy at the Singapore Armed Force (SAF), which plans to change the value of a cadre in internalization of the vision and values of the SAF organization. The strategy used uses 4 domains to intervene reinforced organizations at different organizational levels, namely: domains on strengthening the character, value selection, organizational climate and organizational communication (Chan *et al*, 2007)

As a center of excellence, UMY puts the strength of faith and piety as the foundation and the noble ideals to be achieved through various strategic efforts of education, as well as efforts to develop the knowledge of religion, knowledge, technology and art that became the center of activity. UMY upholds the advancement of Islam that combines the concept of professional work and worship can make UMY as an educational institution based on seriousness, sincerity, and ukhuwah islamiyah (islamic value). All three values are drafted from the beginning of the establishment of UMY until now. It has been developed by making the "young worldwide" credo a reinforcement of UMY's commitment to develop a competitive education not only within the national, but also the international sphere. The significance of the credo is that in the young age of UMY it remains ready to face the challenges and opportunities of future education in the era of globalization in the free market. In line with that, UMY has established an internationalization program since 2015 which is part of UMY effort to improve UMY competitiveness and quality

as well as to realize vision as world class university. This is in line with the value of seriousness that UMY has embraced since its inception by adding young worldwide credo (Universitas Muhammadiyah Yogyakarta, 2017). Adding an "international element" in the learning process, research and cooperation activities (networking) is a significant development potential in institutional development. UMY must have internationalization definition and regulation which become reference in Statute, Renstra etc., so that it can be followed by every level of management at university.

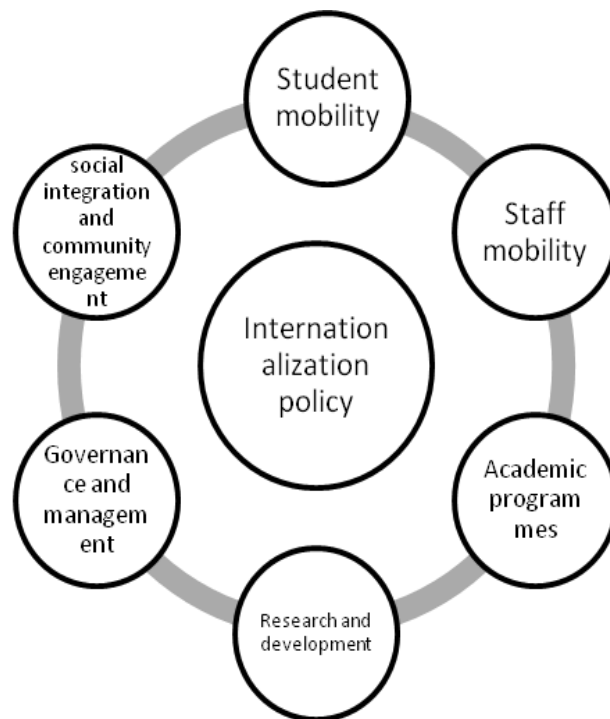


Figure 1. Six aspects of internationalization of UMY (Universitas Muhammadiyah Yogyakarta, 2015)

UMY implements 6 aspects of internationalization (figure 1) which is the basic concept of institutional development in terms of international cooperation policy and the scope of its implementation. The main objective of internationalization at UMY is to encourage and accelerate the achievement of international academic culture. Specific objectives are as follows:

1. Strengthening the academic capacity of teaching staff internationally through academic activities
2. Improved quality of research faculty staff
3. Increasing number of international publications
4. Creation of a continuous and comprehensive academic culture (lecturer-student) at UMY
5. Increasing the number of Head Lecturers and Professors.

Strategies of UMY to achieve the internationalization program have been formulated in various activities, ie (A) award for international journal publication (indexed by scopus), (B) Sabbatical leave, (C) visiting scholar, (D) Joint Degree, (E) international joint conference, (F) international joint research, (G) International class for accredited A study program, (H) credit transfer/learning, (I) post graduate research grant, (J) making signage bilingual, (K) international student center, (L) bilingual docs and forms, international cultural festival, (M) summer school, (N) KKN (Community Service Program) international, (O) cultural exchange, (P) magang, (Q) intensive training for english compeence and teaching metodology, (R) training for managerial skill, (S) ICT (website, bilingual, interactive) and (T) member of international assosiation. The internationalization strategy of UMY is broad and deep, proving that the value of seriousness is very dominant, although the value of sincerity and Islamic values are still applied. This strategy is in line with the research done by Djalal Fuadi (2016). This research conducted a multi-site qualitative research on three (3) universities in Yogyakarta. The study reports that: International governance is defined in the following forms: (a) vision, mission, objectives and strategic plans, quality policies and quality objectives oriented to international quality; (B) the management of the internationalization program shall be submitted to an agency / field / unit office that specifically manages the internationalization program; (C) the curriculum and learning process are developed with different models and trends; (D) internationalization governance is defined and guarded through quality assurance. Reform of universities from national to international level: a) the implementation is dynamic, optional and never ending program, meaning that the basic start of implementation is determined by policy, views or leadership orientation in view of the position of university in international level; B) the implementation of internationalization implemented through cooperation programs with various forms; C) benchmarking is not specifically oriented or does not refer explicitly to certain universities that have reputations of internationalization or predicate of World Class University; D) the marketing process is not done specifically, but takes place in an integrated and natural nature, foreign students are used as media marketing indirectly (Universitas Muhammadiyah Yogyakarta, 2017).

The culture of internationalization organization in UMY is very significant, the understanding of internationalization that has grown at the university level, then in 2012, UMY credo changed from superior and Islamic to become young worldwide. Globalization which is an external factor causes universities to be forced to adapt. By placing the credo then the Office of International Affairs by 2015 has been established and matured its organizational structure. Based on the 2015 rector's report, the credo was inspired by the ideals of KHA Dahlan concerning Islamic progress that is related to the concept of professional performance and worship based on the value of sincerity, sincerity and ukhuwah islamiyah (Islamic values). The internationalization activities at UMY can be followed through the website <http://iro.umy.ac.id/>. The organizational structure of the internationalization office of UMY can be seen in Figure 2

where the agency is under the coordination of Vice Rectors for Cooperation and International Affairs.

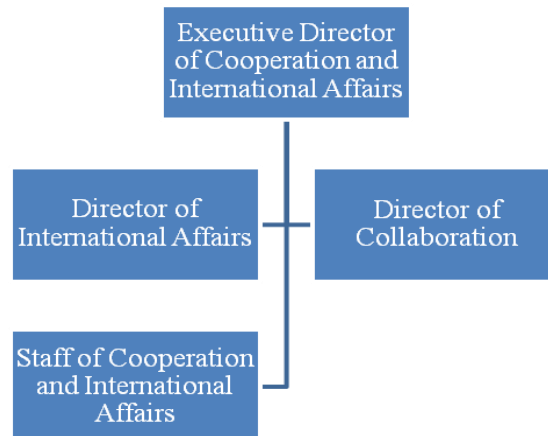


Figure 2. The organizational structure of the office of interationalization at UMY (<http://iro.umy.ac.id/>)

The commitment of UMY to uphold the vision of excellence and Islam and the readiness to face the challenges of globalization and free market is implemented not only through the implementation of “catur darma” (four areas of work) of higher education, that is besides being the center of education, research and community service, but also become the center for character building, especially the young generation. These findings are consistent with the results of the Astuti (2016) study. She undertook multi case study embedded (embadded multi case study) to eight (8) universities in Indonesia that have implemented internationalization. This research reports that the mapping of the Internationalization Program Variation in each university includes: 1) International Accreditation, 2) Research, 3) Education, and 4) Devotion. This research succeeded in identifying the success factor of internationalization by using the eclectic theory of Dunning (1991), that is found by universities at High variation level driven by Ownership-specific advantages (O), Location Specific advantages (L) collectively, Medium variations, not supported by all internal and external factor indicators are owned, whereas universities with low level of variation of dominant external factors become the driving factor. The choice of an internationalization strategy is more influenced by the budget capabilities and government regulations that emphasize strategic alliances. The internationalization commodification of higher education takes place in Indonesia but in order to improve the quality and gain international recognition of the quality of teaching and research as part of the process of preparing students to enter the global market based on an understanding of multiculturalism. Commodification occurs because of government limitations in meeting the needs of the higher education budget.

5.0 CONCLUSION

Internationalization program of UMY was begun since 2015. Universitas Muhammadiyah Yogyakarta has three cultural values that is seriousness, sincerity and ukhuwah islamiyah (Islamic values). Based on these three values, the most contributing to the internationalization program of UMY is the value of seriousness.

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Chapter 14: Historiographical Critique *Balibo* Film: Historical Reconstruction Disintegration of East Timor from Australia Media Views

Arifin Suryo Nugroho

This study aims to explain (1) How the contents of Balibo film or synopsis of Balibo film (3) How historiographic controversy on the Balibo film as Australia's political propaganda media. This research uses qualitative research method. The results of this study indicate that: (1) The making of Balibo film by Australian filmmakers aims to reveal and punish who the real perpetrators in Balibo event. The prohibition of Balibo film played in Indonesia is for reasons of state defense and security. It is also the reason for maintaining good relations between Indonesia and Australia (2) The disclosure of the Balibo case is ultimately discontinued due to lack of evidence.

Keywords: *Balibo Film, Controversy, Indonesia-Australia Relations*

1.0 INTRODUCTION

In the early days of film development in the world, the United States has dominated as the world's largest and best-selling filmmaker worldwide. Entering the 1930s, German films have started to enter the Dutch East Indies. German-made film also managed to attract the interest of the Dutch indigenous population (Biran, 2009: 34). German film about the socialist movement that was growing rapidly in Germany.

Indonesia actually has been able to produce films in 1926. But the films made between the years 1926-1949 can not be said as an Indonesian film because the film made in that period has not been based on national awareness. All movies are only made for money with a mission as entertainment. The story material was taken from the western and Chinese films. so the resulting film does not reflect the personality of the Indonesian nation. While in the Japanese occupation there has been a film about nationality but made by Japan and reflect on Japan's struggle to win the Greater East Asia war.

The first film categorized as an original Indonesian film is a film by Usmar Ismail entitled *Darah dan Doa* produced in 1950 (Biran, 2009: 45). This film tells the story of a long journey of Siliwangi Division soldiers who were ordered back to the base, from Yogyakarta to West Java after Yogyakarta attacked and occupied by Dutch troops through military aggression. The first date of this shoot is March 30, 1950 and then set as the day of national film based on Presidential Decree No. 25/1999. After that came a lot of films made in Indonesia itself by reflecting the daily life of Indonesian people or the history of Indonesia.

In addition to the spectacle, the film is also present as a medium of learning. Some films are intentionally produced to help teachers in school learning. With film, students can simultaneously capture the explanation both audio and visual (Anitah, 2009: 49). Film as a medium of learning is very good to explain something related to the process, can re-show events in the past, generate and encourage the attention of children so that more motivated (Natawidjaja, 1978: 100).

Historical films from day to day more and more made but not all in accordance with historical facts. One of the controversial historical films to be written in this research is the Balibo film produced by Australia. The film was produced in 2009 which revolves around the Balibo Five event of the death of an Australian journalist group on October 16, 1975 in the city of Balibo, East Timor. The film is based on Jill Jolliffe's *Cover-Up* book and directed by Robert Connolly.

Film is a product of art and culture, which to create it requires greater creative freedom born of a creativity of people involved in the process of film creation (Jufry, 1994: 103). Film is a unique new media for delivering a particular message to its audience through an attractive audio visual gift so that the reality shown is a reality of choice and looks like real. Generally the film is a mass media product that further highlight the function of entertainment, but on the other hand, the film can also be used as a mass communication product to inject a particular ideology or convey a message from the author to the audience. As in the Balibo film that seems to convey the message that Indonesia is a villain and Australia is a hero in Balibo events that occurred in East Timor. So it can be concluded that the Balibo film contains elements of propaganda if not addressed properly will cause hostility between the two sides of Indonesia and Australia.

The Balibo film is a semi-documentary film wrapped in political history when Indonesia invaded Dili in 1975. Although it is an Australian production, the whole story takes place in East Timor (now Timor Leste) which is seen in the atmosphere of the mountains, highlands, and the sea. Then the clothes of the players who represent their profession and their role in the film. Like the army figures are visible from the iconic costume in the form of uniform stripes, red beret with ornaments boots, long barrel guns, pistols and others or the figure of indigenous Timorese who have brown skin and simple clothing.

Based on his role in the Balibo film, the historical figure of Ramos Horta representing East Timor and Australian journalists serves as the protagonist who fought for East Timor while

the Indonesian army figure was an antagonist who committed acts of violence and crime in East Timor. It is said that Indonesian soldiers attacked East Timor from all directions, air, sea and land, and destroyed the goods of the people, arrested them and executed them en masse. Not only that, they are also told to kill the five foreign journalists who were covering in Balibo with brutal and sadistic.

The issue of human rights violations that led to war crimes by the Indonesian army is the main core of the narrative that wants to be highlighted in the Balibo Film. Physical violence to Australian journalists or to the East Timorese people is a violation of human rights and a war crime. According to Peter Baehr gross violation of human rights are acts of violence against human rights covering serious issues with regard to apartheid, slavery, murder, genocide, enforced disappearance, torture and torture and ethnic extermination (Sujatmoko 2005) .

In Indonesia the Balibo film is banned by the Film Censorship Institution. According to the then Minister of Foreign Affairs of Indonesia Marty Natalegawa, this ban is aimed at avoiding the negative world view of Indonesia. According to the Balibo film version, an Australian journalist was killed by an Indonesian soldier while according to an official version of the TNI, the journalist was killed during a gunbattle and not by Indonesian soldiers (Vivanews, 2-12-2009). The controversies in this Balibo film will be discussed in this research.

2.0 METHOD

This research is a qualitative descriptive research, emphasizing the problem of event process and or phenomenon, which will be interpreted through data or statements that are interlocked so as to give an integral meaning. While research strategy used is document study. Sources of research information which is the main source of data that will be collected in this study is qualitative data. Qualitative data is obtained from documents (books), magazines, journals, print and electronic newspapers, and films. Data collection techniques to be conducted in this study through literature study. Data collection by literature study is a process of collecting data sources, which focuses or focuses on print sources and in this study using newspapers, magazines and books. The book is used as a source of support with the category of books written by experts who understand, understand and pursue the field of study being thorough researchers.

3.0 RESULTS AND DISCUSSION

3.1 Balibo Film: Australian Propaganda Media

The Balibo film is an Australian film out of 2009 based on Cover Up: The Inside Story Of The Balibo Five by Jill Jolliffe. The film tells the story of the struggle of a senior Australian journalist named Roger East in investigating the deaths of five young journalists from Australian television when covering the arrival of the Indonesian military in East Timor in 1975. The five journalists are Greg Shackleton

(29 years old) Tony Stewart (21 years old), Gary Cunningham (27 years old), Brian Peters (24 years old) and Malcom Rennie (29 years old).

The Balibo event is a tragedy that occurred on 16 October 1975 when the East Timor situation was in a state of civil war. Balibo is a subdistrict name in Bobonaro District. The civil war took place between the Fretilin parties who wanted East Timor to be fully independent and separated from Indonesia with the Apodeti party assisted by the Indonesian Army desiring to continue to join Indonesia. The armed contact because Apodeti wanted to capture Balibo which had been controlled by Fretilin.

The idea The film's creation came after the 2006 International Press Institute sent a letter to UN secretary-general Kofi Anan to urgently urge the United Nations to investigate the individuals involved in the Balibo event. Starting from the re-disclosure of the case that has long been drowning that director Robert Connolly interested to lift the reality of the case to the screen.

The contents of the Balibo movie story began when five young Australian television network journalists were missing while covering the arrival of the Indonesian military to East Timor in October 1975. The loss of the five journalists left the heart of one of Australia's senior journalists touched. Roger East, the name of the journalist, believes that there is something unnatural about the disappearance of the five young journalists.

The story begins when Juliana (the real name) is a living witness to the Balibo event tells of the bitter experience she experienced when she was about five years old. His memories are very strong on the details of the violence experienced by East Timorese society including those experienced by his family members. With a very touching and imposing speech, he recounted the chronological events he had seen during that period (which later became the plot of the Balibo film).

The storyline of this movie is not sequential, back and forth. It takes concentration to frame the scene after scene. In 1975, a 9-year-old Juliana was moved out of Dili by her father. In the middle of the journey, he saw Indonesian troops successfully entering Dili. His car was stopped and everyone was driven out onto the street. Civilians, women and children are separated. The men remained hostage and ducked with arms folded over their heads. Raucous, screams and gunshots dominate. Their faces were frightened, panicked, and pale. It is still clearly illustrated in Juliana's memories of the events of December 7, 1975. It was then that little Juliana saw that Roger East was caught and executed.

The time frame then retreated to September 1975. Jose Ramos Horta, commander of Fretilin forces, came to see Roger East in Darwin, Australia. Roger East is a military veteran of the army who was dismissed for psychological reasons. Jose Ramos Horta persuaded Roger East to become head of the news agency in the territory of the

Portuguese colony. The arrival of Jose Ramos Horta in Australia received less response from Roger East because Roger East was not interested in the offer of Jose Ramos Horta, for him the lesser-known East Timor in the world. Jose Ramos Horta eventually left Darwin by leaving five Australian journalists missing documents in the Balibo incident. Information about the disappearance of five young journalists was the one that finally made Roger East willing to come to East Timor.

Arriving in East Timor, Roger East turned the Hotel Turismo in Dili as a stopover. He met Jose Ramos Horta again and planned to go to Balibo, where the five journalists lost. The journey is about 12 hours on foot because access to the small town was closed. Balibo is 10 kilometers from West Timor, Indonesia. It is located in Bobonaro District and directly adjacent to the Savu Sea. In alternate scenes displaying different time settings, Roger East's journey then changed as the five journalists in the same place. Described Jose Ramos Horta burst into tears when he saw bodies lying in the clearing for slaughter. It is unclear which side they are. Despite their panic, both of them struggled to avoid bullets from the top of the helicopter. East came to an empty house. He saw blood splattering everywhere. Abu burnt rest he held. The walls were hollow with bullet hammers.

Setting then retreated to October 1975. Five journalists with Fretilin troops went from village to village. Illustrate the atmosphere, then record it in a tape reel on the camera. Overnight in a village, they meet an old man who bombarded him with some unexpected questions.

October 16, 1975 was a fateful day for the five journalists. They are not aware of the death that will pick up. Morning, the dawn is new. Light is not enough for their camera. Rumors of panic appeared at that time. All Fretilin troops behind the Portuguese Fortress, where they were defending, ran away. However, not for the journalist. They approached the fort, peeked, then recorded it with the camera. Tense. Between the task of seeking exclusive information and desperate defiance of death. They were besieged, the shot pointed blindly. The end of the escape was when the five journalists were hiding in an empty house. The breath was roaring, the heartbeat erratic.

Outside, Indonesian troops have been besieged. Convinced by their profession, one of the journalists came out to negotiate. However, what happened was shooting. There was no dialogue and everything was done very unexpectedly. All five were killed. That's when their bodies were burned together with the tape of the coverage.

Cinematography, the visualization of this film is not bad, but also not special. The result is not so sharp, slightly blurred and impressed retro. The dominance of yellow and brown color is even more toward metallic even though the setting of the area is predominantly forest. The green color of the leaves and the blue of the sky seemed to

dim. The film crew wore 1970s old lenses to take all the pictures. That way, more captured story visualization represents its time, though it can all be done with modern cameras and editing effects. The result is rough, like a documentary film production. They also do sound editing with detail. For example, the sound of the breath when the fifth panic of a journalist is surrounded is very clear. The soundtrack worked by Lisa Gerrard strongly represents the nuances of East Timor.

However, in the end, this film is not a strict documentary with facts. The Balibo movie remains a fiction film and is strung by the facts found-the filmmaker's version. Fantasy scenes are inevitable. The scene of Roger East fighting with Jose Ramos Horta in the pool was fictitious. While the scene of five journalists happy to gather in a table outside the room while in the Portuguese Fort.

3.2 Historiographic Criticism in Balibo Film

The Balibo film became a film full of controversy because it is considered to have content and also a very sensitive message content for some countries involved in the Balibo tragedy such as Indonesia and Australia. Not only the content and also the content of messages in the film that reap the controversy, the plan of showing the film is also a considerable polemic in Indonesia. The film was released in Australia in July 2009 and premiered at the first Melbourne International Film Festival.

The film is premiered for the first time in Indonesia at the Jakarta International Film Festival (Jiffest) held in December 2009. However, because it did not get permission from LSF (Film Censorship Institution) Indonesia so that the delivery was canceled. The reason for the LSF which considers the Balibo film contains a lot of violence, is questioned by many parties. But finally the public concluded itself that the real reason Balibo film can not be played in Indonesia is for political reasons.

It is rife in several TV stations, national and international newspapers, magazine articles and the internet, exposing this film to the sensitive issues that have the potential to damage bilateral relations between Indonesia and Australia and even opening up historical wounds between Indonesia and East Timor (Tempo, 2009: 23). Feeling worried about Balibo Five is more caused by the depiction of the figure of Indonesia is very brutal, cruel, sadistic and inhuman is like a monster. The LSF has the potential to disrupt public order because Balibo Five labeled itself as “based on true story” which is a true story based on Indonesia's history. As shunted in the exclusive WSWS (World Socialist Web Site) interview with Connolly, Balibo Five is based on Cover-Up book: the inside story of the Balibo Five by Jil Joliffe and also using the historian's service. Clinton Fernandez of the Australian Defense Academy at the University of New South Wales to guide its historical context (Tempo, 2009: 131).

In *Balibo Five*, the ideology that degrades Indonesia appears in the film language composed of aspects of cinematography, narration and audio that make the film interesting to follow. These aspects of the film represent a representation of reality from the past that was brought to the screen to druggle the audience through the story presented in it. The figure of Indonesia is represented like a monster, a brutal and cruel figure through various acts that violate human rights and war crimes during the invasion of East Timor. Indonesia is told to kill the five Australian journalists and launch a series of firearms to civilians. This is the most cruel act of violence against human rights whether citizens of Indonesia or foreign citizens.

LSF is increasingly convinced that there is a message content in *Balibo Five* that is not feasible to be consumed by Indonesian citizens because the film is trying to impose the image of Indonesia in the eyes of the world and bad impact on Indonesia's international relations. The issue is such that the LSF feels the need to take an attitude towards the message the director is about to deliver in the film.

Balibo Five is a propaganda media by certain parties to perpetuate anti-Indonesian ideology. According to Terence Qualter, propaganda is: A deliberate attempt by an individual or a group to form, control or change the attitude of another group with the use of a means of communication with the intention that in a given situation the reaction of the affected person or group will be the reaction desired by Kimbal Young's propagandist adds a propaganda definition which emphasizes the action that propaganda is the use of more or less planned symbols intentionally or systematically, primarily through psychological means and techniques related to the intent of changing and controlling opinions, ideas and values and ultimately changing open acts along a predetermined line first (Holsti and Azhary, 1988: 55).

With regard to the *Balibo Five* which cornered the figure of Indonesia as a monster with various acts of sadism can be classified as a propaganda in the form of symbolic violence with the psychological target of the masses. They torture people's feelings to be mobilized against certain groups (Pitaloka, 2004: 80-81). This form of anti-Indonesian propaganda is highly visible in three forms of demonization, dehumanization and psywar. Demonization and dehumanization almost have the same meaning that equates the figure of Indonesia with the devil or a creature other than humans whose dignity and lower dignity.

The film seeks to summon sympathy for Australians and shows that "I" is a victim and "they" are murderers. The shouts, repetitions and ironic events that accompany the word "I'm Australian" try to summon their audiences. The Australian side said that the five journalists were deliberately removed by Indonesian soldiers to cover up an earlier Indonesian offensive. This is in contrast to the Indonesian government's

statement that the five journalists were killed trapped in crossfire between Indonesian soldiers and Fretilin guerrillas (www.merdeka.com October 16, 2012).

Minister of Culture and Tourism Jero Wacik considered that the Balibo film as a whole strongly cornered Indonesia and could trigger the relative estrangement of RI relations with East Timor. During this time between RI and East Timor there has been an agreement to establish a Team of Truth and Friendship Commission which agreed to close the history books of the past. According to Jero Wacik, the contents of Balibo Film is very contradictory to the agreement that has been decided by both countries. Especially as a whole the film is very menyudutkan Indonesia. The film tells the story of the deaths of five Australian journalists in Balibo and depicted them when they were killed in uniform like TNI.

Jero Wacik received a report from the Film Censorship Institute (LSF) which stated Balibo did not pass the censorship for airing in Indonesia. He has also been invited with the Indonesian Minister of Defense to see the film intact. It appealed to the public, artists and movie people to be willing to put the interests of the country above all else. Creativity can not be killed but for the sake of the state remains number one. Do not state sacrificed for other purposes. He argues that basically there are many films that did not pass the LSF censorship but Balibo became one of the most questionable because it was loaded with political content.

Jero Wacik also added that LSF has worked by fulfilling the existing norms ranging from norms to religious norms. So if the LSF has decided not to pass a movie to air in Indonesia, it has been through a variety of considerations.

Meanwhile the cause of the Balibo film controversy began when East Timor escaped from Indonesia in 1999. Eyewitnesses began to talk about the Balibo incident. They include Guilherme Gonzalves, King of Apodeti and his son Thomas also Paulino Gama. They told of the involvement of Indonesian troops in the event to Radio Netherlands. They said Indonesian troops had shot the five journalists. They also claimed to see other troops firing on the house occupied by journalists for two to three minutes. They claim to see two white citizens with their hands overhead but gunfire continues. After killing the bodies of the fifth reporter then burned in the house for two days.

An investigation by the UN concluded that the journalists were deliberately killed by Indonesian forces. The UN, among others, recommended that further investigation be undertaken. But up to 10 years, UN investigations and trials in Australian courts have not resulted in any decisions because some Indonesians mentioned in the case could never be brought to trial.

Before Indonesian troops invaded East Timor on 15 December 1975 with the Operation Seroja code, Jakarta indeed held a special operation. The first operation

with the Komodo Operation password was held from early January 1975 by involving a task force of elements of the army under the command of the State Intelligence Coordinating Agency (Bakin). The operation was then continued by Operation Flamboyan until the entry of Indonesian troops to East Timor. In addition to monitoring developments, the target of the infiltration operation is to establish contacts with East Timorese who intend to integrate with Indonesia.

Because it is closed, in the assignment the whole army does not wear official uniforms. Instead they wore civilian clothing in order not to attract attention such as jeans, T-shirts and so on. Several field commanders were assigned to disguise themselves as college students who were on a Real Work Lecture. Weapons and ammunition were put into sacks emblazoned with agricultural writing.

Their initial task was to train the sympathizers of East Timorese youth who wanted their territory to be part of Indonesia. When a squad of operations units from Indonesian forces were in Balibo, the five journalists were also in the subdistrict town. This is similar to the same operation carried out by US Green Beret troops, before American troops are involved in the Korean war, invading Vietnam, and later invading Iraq and Afghanistan. The special forces came first, infiltrated civilians, trained locals and conditioned targets for the arrival of more massive soldiers.

The Indonesian government repeatedly explained that five Australian journalists in Balibo in 1975 died accidentally because they were trapped in a shoot-out between Indonesian troops and Fretilin. Until now there is no certainty which version of the most correct because of history is always controversial. As historian Bambang Purwanto says, controversy can be political or academic controversy. The Balibo event can be included in both types of convergence because it is bound by various interests, either the interests of the Indonesian government or the interests of the Australian government.

4.0 CONCLUSION

The non-linear nature of history led to the emergence of controversial historical events. From the previous explanation, it can be concluded that: First, in the film Balibo the Indonesian army is a symbol of evil. Indonesia's frequent and cruel, brutal and sadistic frequency and role through various acts of violence to Australian and East Timorese journalists. Secondly, Indonesia did war with Fretilin because it was in accordance with the agreement that East Timor would join Indonesia. Third, the dominant ideology in the Balibo film is hatred towards Indonesia in the form of anti-Indonesian propaganda that discredited Indonesia by creating a bad image of the Indonesian figure. Fourthly, the Balibo film is a film that interpolates Australians to participate in establishing justice for Australian journalists killed by Indonesian soldiers. The government

rejected the truth of the contents of the Balibo film and stated that the five journalists were killed by gunfire in the war. The Balibo movie is banned from playing in Indonesia for reasons of maintaining national unity and maintaining good relations with Australia.

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**TECHNOLOGY DEVELOPMENT BASED ON ENVIRONMENTAL
INSIGHT, HEALTH, NUTRITION, TROPICAL DISEASES,
AND MEDICINE**

Chapter 15: The Development of E-Commerce Technology on Supporting Economic Matters

Hindayati Mustafidah, Arif Suryadin

The development of information technology is increasingly growing, encouraging business actors to make changes in the way of doing business. E-Commerce or online business that use the internet features, can be the best solution in terms of product marketing, thus increasing the effectiveness of the business actors. This research will be presented the development of e-commerce implementation in order to support the economy for business players such as small and medium enterprises in Indonesia, in order to meet product marketing strategies that can impact on increasing revenue.

Keywords: *information technology, e-commerce, online business, marketing*

1.0 INTRODUCTION

The development of information technology today is a necessity that must be owned by organizations and companies to improve the quality of service. Utilization of information technology must be balanced with the implementation of information systems. Information technology and information systems are two areas that coexist in the delivery of information. Utilization of information technology and information systems can help organizations and companies to achieve maximum goals. This is evidenced by the growing and easy role of information technology and information systems within organizations and companies.

In this era of globalization, technological and business developments are accelerating and expanding. Technology and business must go together so there is a balance. If the business is done without technology or vice versa, then there will be no progress because the longer the technology and business growing. One of the developments is the internet as a medium of transactions are better known as e-commerce. According to McLeod (2008), e-commerce is the use of communication and computer networks to carry out business processes. This is reinforced by Turban, et al. (2016) that e-Commerce or electronic commerce is a concept that explains the process of purchasing, selling and exchanging products, services and information through

computer networks ie the internet. A popular view of e-commerce is the use of the internet and computers with web browsers to buy and sell products.

Since 1970 Electronic Funds Transfer (EFT) was introduced between banks through private security networks to transform market finance. Electronic Funds Transfer (EFT) is electronic payments with electronics that provide payment information. In the late 1970s and early 1980s, e-commerce has spread to companies in the form of electronic messaging technology, Electronic Data Interchange (EDI) and Electronic Mail (E-Mail). Electronic messaging technology streamlines business processes by reducing paperwork and improving automation. Electronic Data Interchange (EDI) allows companies to send and receive business documents such as purchase orders in the form of electronic standards for and from their suppliers. In the late 1980s and into the early 1990s, electronic messaging technology became an inner part of a collaborative workflow or computer technology system, also called roupware. Example: Lotus Notes. On the 1990s the arrival of the World Wide Web (WWW) over the internet representing the earliest beginnings of e-commerce, by providing the ease of use of computer technology as problem-solving information. The Web makes e-commerce to facilitate ways of doing business on an economic scale and enables a more classified economic scope (Saputra, 2002).

At first when the web became popular in the community in 1994, many journalists predicted that e-commerce would become a new economic sector. However, only about four years later secure protocols such as HTTPS enter the mature stage and are widely used. Between 1998 and 2000, many businesses in the United States and Europe developed this trade website.

The e-commerce system according to O'Brien (2003) is the process of buying and selling as well as marketing and servicing of products, services, and information through various computer networks. Meanwhile, Laudon & Laudon (2014) define e-commerce as a process of selling and purchasing goods and services electronically with computerized business transactions using the internet, networks, and other technologies. E-Commerce system has several advantages as proposed by Hidayat (2008), which is not owned by offline business transactions are:

- **Products**

Many types of products that can be marketed and sold via the internet such as clothing, cars, bikes, and others.

- **Where to sell products**

Place to sell some products is internet which means must have domain and hosting.

- **How to receive orders**

Orders made via Email, phone, SMS and others.

- **Payment method**

Payment is made through Credit Card, paypal, or cash.

- **Method of delivery**

Pos Indonesia, EMS, J&T, or JNE are methods and delivery media in business transactions.

- **Customer service**

Customer service is done via email, contact us, phone, and some services using chat.

The classification of e-commerce is generally done based on the nature of the transaction. According Laudon & Laudon (2014), the classification of e-commerce is divided into 5, with the characteristics as presented in Table 1.

1.1 Business to Consumer (B2C)

B2C is a type of e-commerce between the company and the end consumer. This corresponds to the retail section of e-commerce commonly operated by traditional retail trade.

1.2 Business to Business (B2B)

B2B e-commerce includes all electronic transactions of goods or services performed between companies. Traditional producers and traders usually use this type of e-commerce. Generally e-commerce with this type is done by using EDI (Electronic Data Interchange) and email in the process of purchasing goods and services, information and consultation, or the delivery and demand of business proposals.

Table 1. Type of E-Commerce

No	Type of E-Commerce	Characteristics	Impact
1	<i>Business to Consumer</i> (B2C)	<ul style="list-style-type: none"> - Sales of goods / services in large quantities. - Usually sold at a special price for resale (reseller). - Online connection between vendor and buyer. 	<ul style="list-style-type: none"> - Work productivity is higher and potential. - Time savings in making transactions. - Achievements are competing in real terms.
2	<i>Business to Business</i> (B2B)	<ul style="list-style-type: none"> - Sale of goods in retail from the company. - Retail products are very diverse - Online payment by credit card. 	<ul style="list-style-type: none"> - Access to global markets directly. - Time and place savings - Cost reduction is very meaningful.
3	<i>Consumer to Consumer</i> (C2C)	<ul style="list-style-type: none"> - Transactions conducted only limited to between consumers. - Internet is used as a means of exchanging information of a product. 	<ul style="list-style-type: none"> - Helping someone who personally wants to sell goods quickly to the public. - The cost to put ads on online auction sites is relatively cheap.

Table 1. (cont.)

4	<i>Peer to Peer</i> (P2P)	<ul style="list-style-type: none"> - Consumers also form a fan community of a product. - Activities are capital funding. - Providing a portal to bring together investors with the fund (debtor) - The existence of interest rates in terms of borrowing. 	<ul style="list-style-type: none"> - Consumers can compare the price and quality of a product. - Quickly get the capital to invest. - The process of capital disbursement is relatively short. - Getting funding from many individuals.
5	<i>Mobil Commerce</i> (M-Commerce)	<ul style="list-style-type: none"> - Mobility - Reachability - Dissemination 	<ul style="list-style-type: none"> - Can be used wherever the user is located and in any situation. - Users can be contacted anytime directly. - Allows users to receive and disseminate information quickly and up-to-date (right away)

1.3 Consumer to Consumer (C2C)

C2C is a type of e-commerce that includes all electronic transactions of goods or services between consumers. Generally these transactions are made through a third party that provides an online platform to conduct such transactions. Some examples of C2C application in website in Indonesia are Tokopedia, Bukalapak, and Lamido.

1.4 Peer to Peer (P2P)

Peer-to-Peer (P2P) is an inter-borrowing and lending activity. These practitioners have long been running in different forms, often in informal agreements.

1.5 Mobile Commerce

Mobile Commerce (M-Commerce) is an electronic commerce system (e-commerce) using portable or mobile devices such as mobile phones, smart phones, PDAs, notebooks, and others. When user move from one place to another (while in a car, for example), the user of the computer can make a sale and purchase of products on the internet using this m-commerce system.

Based on the above description, it is necessary to study about the development of online business (e-commerce), especially in Indonesia in supporting the economy of businesspeople, both small and medium enterprises and companies in order to meet product marketing strategy that can impact on revenue increase.

2.0 METHODS

This research is a qualitative study. Sources of data obtained by collecting information from various articles related to e-commerce. The research procedure is described with a Flowchart Diagram as shown in Figure 1.

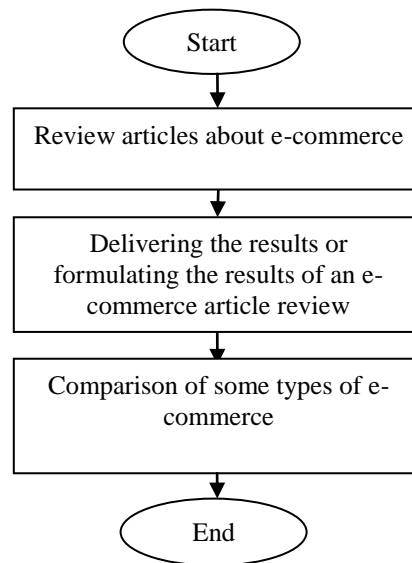


Figure 1. Research Steps

3.0 RESULTS AND DISCUSSION

The development of information technology today is intensively supported by supporting infrastructure that has been built by government and private parties. Along with the penetration of technology into all areas of life, the penetration of information technology today has resulted in the development of electronic commerce or e-commerce. Information technology is a form of technology used to create, store, alter, and use information in all forms. Through the utilization of this information technology, micro, small, and medium enterprises can enter the global market. Small companies such as Amazon bookstore, Yahoo portal, and Ebay simple auction company, all three now become giant corporations only in a short time because of utilizing information technology in developing their business (Suyanto, 2003).

Some of the information collected about companies that implement e-commerce system in supporting the economy are:

3.1 PT. Unibindo Pertiwi (Rudy, dkk., 2007)

PT Unibindo Pertiwi is engaged in the distribution of binding machines, laminating, and presentation in the country as a branch office of its parent company located in Belgium. In the increasingly fierce competition, PT. Unibindo Pertiwi requires a new

marketing alternative strategy that can reach more customers and can provide better service to customers. The marketing strategy in ordering and selling is only done manually so it is considered less practical, less reachable, and has a high risk of error. With e-commerce system is expected to provide benefits for PT Unibindo Pertiwi and its customers in ordering products without limited space and time so as to increase customer satisfaction which ultimately is also expected to increase profits for PT Unibindo Pertiwi.

The e-commerce system at PT Unibindo Pertiwi is an e-commerce system as a support system of service running in the company today, not as a substitute for existing systems. Customers do not need to go to headquarters to place orders and purchase products, but can make reservations and purchases, when and wherever located. Inside e-commerce sites that have been built is available feature, such as online chat and message.

3.2 PT. Golden Rama Express (Gunawan, 2014)

The tourism industry is one of the industries that make the largest contribution in the world. In Indonesia alone, until February 2010, there are about 2,000 Travel Bureau which serve inbound / outbound tour packages. This fierce competition is triggered by a lucrative market opportunity, which in 2010 the number of international airline passengers reached 6.59 million people, and in the first half of 2011 to 5.3 million people.

This information technology is useful for travel agents and tourism as well as users of travel agent services, through the internet media can facilitate and speed up the transaction process because service users do not have to bother coming to the office or contact by phone just sitting in front of the computer and all matters relating to ordering can be done online. This is also supported by the opportunities available in the e-commerce market, indicated by the results of Nielsen survey in 2010 in the future, 80% of the users of Internet Indonesia plans to shop online, with tourism ranked fifth or by 25% as the product / service you want to spend.

3.3 PT. EIGL (Rudy et. al., 2011)

The current cosmetic trend is in line with the ever-changing fashion trend from time to time in keeping with the times. To meet the demands of society, do not be surprised if various cosmetics industry competing to create various beauty products, starting from powder, facial cleanser, acne remover, facial bleach, and various other uses. Currently not only domestic cosmetics industry that continues to compete for the market and even imported cosmetics products are also increasing in the market. Therefore, to achieve a successful cosmetic industry should start to innovate and

create in the field of production, marketing, distribution, and service to customers. One medium that can be used today is the internet. Through the internet customers can make transactions whenever and wherever purchase products. The opportunity is utilized by PT. EIGL to create e-commerce applications to serve the process of sales, payment and product delivery. The methodology used is the company's readiness analysis using the analysis of the preparation of market opportunities and application design with object-oriented approach.

Based on the analysis conducted, PT EIGL has the opportunity to utilize e-commerce and the proposed e-commerce application in prototype form. This application features company profile, product (explanation and price), payment method, user, online product ordering, ordered status checking, and making sales report. By utilizing e-commerce, customers can place product orders through websites that have been designed. In addition, customers can also view the order status through the website so that customers can find out the order status of their products.

3.4 Pastbrik Shop Malang City (Maulana et. al., 2015)

The sales system used by the Pastbrik shop initially still uses the conventional / offline system where the buyer to get the desired item must come directly to the store to find the desired item and directly pay at the checkout. Sales system like this is deemed less effective and efficient because it requires cost and time long enough for customers to make the transaction process and customers will feel less pampered.

Implementation of e-commerce by using opencart software on Pastbrik stores can help reduce costs incurred. In addition, the use of opencart software can convey detailed information about products or special prices provided to consumers online. The transaction process becomes easier because the consumer does not have to come to the store directly.

3.5 Amazon.com Company (Karmawan, 2014)

Amazon.com is a retail site using sales revenue model, which is how Amazon.com also allows companies to advertise their products by paying for the advertised products. This ad becomes advertising revenue for Amazon.com, making Amazon.com a part of the sales revenue model and also part of the advertising revenue model. By using the subscription revenue model, the company provides services to its customers for information such as consumer reports, online newspapers, and online magazines.

The results obtained from this study are an increase in terms of customer satisfaction from year to year starting from 2007 - 2010. The level of satisfaction of a shopper in the UK reached 56% more likely to buy from retailers when they are looking for the

same goods and 69% more likely to recommend e-retail to others. The profit increase for Amazon.com's company also rose, reaching US \$ 1. 390. 000,000, up 6.3% from US \$ 849 million from a year earlier.

3.6 Jumbo Cell Store Bangil (Arcanggih et. al., 2014)

Jumbo Cell Store is one of the store that sells various kinds or brand of mobile phone located in Bangil city. Before using e-commerce, the sales process is still conventional where the buyer contacts directly by coming to Jumbo Cell Store. Thus, buyers require greater costs and time long enough to buy the desired mobile phone, other than that less buyers get more detailed information about new products are sold on Jumbo Cell Store.

Prestashop is a free Open Source-based application that is used as a medium for online store maker or e-commerce website, and other free applications such as Joomla, Magento, Opencart and others. Jumbo Cell Store uses Prestashop application as the basis for ecommerce website development because Prestashop has many advantages such as attractive user interface display and many free modules that can support the operation of e-commerce website. With the implementation of this e-commerce, Jumbo Cell Store can be helpful in the delivery of detailed information about products sold to consumers online and facilitate the transaction process without the consumer must come to the store directly.

3.7 Trading Company Cross Tech (Subekti et. al., 2012)

In Cross Tech trading company found some problems that have been quite disturbing the performance of the company, especially the level of sales. This case arises because of inefficiencies in the tasks of the division of Operational Manager and Marketing Manager. Often there are overlapping tasks between the two. In the financial field there is no computerized product delivery cost calculation procedure and clear and precise division of the area for the reseller so that the company loses due to inaccurate calculations.

In order to overcome these problems and meet the various needs of the company, designed a system that can facilitate the process of business transactions to the business and can provide information specifications and prices of computer equipment in detail and clear. Thus, new e-commerce solutions that support multiplatform databases can provide ease in marketing their products so that consumers can find out the latest products and increase revenue turnover for the company.

3.8 Distro Java Trend (Handayani & Purnama, 2013)

Java Trend Distro has some deficiencies in the process of selling goods. The original sale was done only limited consumers come to choose goods and pay, booking transactions are also done through BBM and facebook friendship media sites. By relying solely on the sales system of Mobile media and facebook services, it is still lacking in increasing the level of sales of goods. Therefore, developed the system of selling goods using the online system, where the customer can make goods sales transactions without any time constraints and place limits. This will reduce the difficulty of the customer with high mobility to buy goods. Only with the capital of internet service then the customer can make transactions anytime. In addition, the e-commerce system in Java Trend Distro affects the interest of buyers to make purchase transactions that impact on the increase in shop income, because it can be accessed easily without being affected by distance and time.

3.9 Car Wheel Shop “Limited Edition” (Risti & Riasti, 2013)

Car wheel shop "LIMITED EDITION" is one store that sells various kinds of car wheels of several brands and sizes. Starting local wheels to import and various types of wheels. Previously, this store is still using conventional media that is with media banners and word of mouth. The media is considered good but still has constraints that cost, time and space. Innovation is done by developing an online sales system or can also be referred to as a web-based Online Shop using CMS software that is opencart.

3.10 Typical Souvenir Products Pontianak (Kosasi, 2015)

The growth of business souvenirs typical of Pontianak City is not too significant because only for the consumption of local communities and tourists for a certain period of time. Limited sales activity caused a number of household industries that produce souvenirs typical of Pontianak can not grow well because the number of buyers is limited. One of them is a gift shop owned by Toko A Long. So far with the economic conditions that are not so good and tend to stagnate make the owners seek new breakthrough by exploring business opportunities to expand market share online through the use of E-Commerce system. The result of e-commerce system development can show all information about Pontianak City's unique souvenir products.

3.11 CV Selaras Batik (Himawan et. al., 2014)

CV Selaras Batik is one of the boutique outlets that specifically sell batik clothes in Tangerang city. Nevertheless, CV Selaras Batik still prioritizes the sales method by

using traditional model marketing that is by distributing the products to the shops and to the consumers directly. With the e-commerce website that utilizes the internet as a marketing medium, it can facilitate shop owners to provide services to consumers optimally and provide information 24 hours and can be accessed anytime and anywhere.

3.12 Micro, Small and Medium Enterprises (UMKM) (Mumtahana et. al., 2017)

Micro, Small and Medium Enterprises (MSMEs) is one of the micro enterprises that empower the home industry. SMEs Indonesia has a contribution of 15.8% of the global supply chain at the ASEAN level. The development of MSME from year to year is influenced by the utilization of information technology and information systems. E-Commerce is one technology that supports the development of SMEs and trade today. The main target of the utilization of e-commerce technology is SMEs leather craft industry in Magetan. This e-commerce application became one of the application of technology as a marketing medium of leather industry results in skin industry district of Magetan Regency. Application trials conducted in Kopma Antik STT Dharma Iswara Madiun conducted to determine the level of usefulness to the needs of users. The results of the test stated that this e-commerce application can improve the marketing of Anti-STM products by 15%.

From all the studies that have been submitted, it can be made information on the development from time to time the implementation of e-commerce in supporting the economy in Indonesia, as in Table 2.

Table 2. The Development of E-Commerce in Indonesia

No	Year	Object	Type of e-commerce	impact
1	2007	PT Unibindo Pertiwi	<i>Business to Consumer (B2C)</i>	<ul style="list-style-type: none"> - Transactions between customers and companies more easily - Sales results are increasing
2	2011	PT EIGL	<i>Business to Consumer (B2C)</i>	<ul style="list-style-type: none"> - Wider range of product marketing - Support the development of the company
3	2012	PD Cross Tech	<i>Business to Business (B2B)</i>	<ul style="list-style-type: none"> - Greater sales effectiveness - Convenience in product marketing - Increased turnover for the company
4	2013	Distro Java Trend	<i>Consumer to Consumer (C2C)</i>	<ul style="list-style-type: none"> - Reduce the risk of loss of transaction data - Increase shop revenue revenues - Can be accessed anywhere and anytime

Table 2 (cont.)

5	2013	Car Wheel Shop "Limited Edition"	<i>Consumer to Consumer (C2C)</i>	<ul style="list-style-type: none"> - Online sales promotion tool - Expanding market share - Increased turnover of store income
6	2014	PT Golden Rama Express	<i>Business to Consumer (B2C)</i>	<ul style="list-style-type: none"> - Business growth - Improved service quality
7	2014	Amazon.com	<i>Consumer to Consumer (C2C)</i>	<ul style="list-style-type: none"> - Increased customer satisfaction - Increased number of website visitor - Increased corporate profits
8	2014	Jumbo Cell Store Bangil	<i>Consumer to Consumer (C2C)</i>	<ul style="list-style-type: none"> - Maximum service 24 hours - Marketing activities become more widespread - Save time and money
9	2014	CV Selaras Batik	<i>Business to Consumer (B2C)</i>	<ul style="list-style-type: none"> - Optimal service to consumers - Increase business income
10	2015	Typical Souvenir Products Pontianak	<i>Consumer to Consumer (C2C)</i>	<ul style="list-style-type: none"> - Expanding market share - Grow global competitiveness - Increased store revenue
11	2015	Pastbrik Shop Malang City	<i>Consumer to Consumer (C2C)</i>	<ul style="list-style-type: none"> - As a media promotion and sales - Cost-effective and time-efficient
12	2017	UMKM Leather Craft Magetan Regency	<i>Consumer to Consumer (C2C)</i>	<ul style="list-style-type: none"> - Increased production yield - Increased profit for leather craftsmen

4.0 CONCLUSION

E-Commerce is the impact of the development of information technology and telecommunications. Increasingly the business community that uses the internet in performing daily activities indirectly creates a new world. The use of E-Commerce technology simplifies company performance and improves company's quality. Application of this technology can expand the company's market share is mainly the cost for cheap advertising compared to advertising on the street and mass media. Need for socialization and in-depth learning as well as careful preparation before implementing E-Commerce application. Weakness in E-Commerce can be handled carefully, but it takes more than just a mature plan.

The suggestions that can be conveyed related to the implementation of e-commerce are:

- E-Commerce is not just a mechanism of selling goods and services over the internet but rather leads to a business transformation that changes the way companies conduct their day-to-day business activities.

- Introduction of e-Commerce should be improved especially on the manager staff in the company to better know the development of information technology.

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Chapter 16: Influence and Forecasting of TS, FSCS and TCS to Gross Domestic Product in Banyumas Regency

Joko Purwanto, Malim Muhammad

This research aims to investigate the influence of the Trade Sector (TS), Financial Services Company Sector (FSCS), and the Transportation Communications Sector (TCS) towards Gross Domestic Product (GDP) of Banyumas regency and predicting income of these sectors for next 5 years using ARIMA Model. The t-test shows the TS, and FSCS does not influence significantly to GDP, but the TCS gives significant influence to GDP; however, F-test simultaneously shows all sectors have significant effects to GDP. The GDP showed a positive trend, which is 38,798.78 billion rupiah in 2015, furthermore, the forecasting will reach more than 2 times at 85,487.49 billion rupiah in 2020. When income of GDP can be maximized, it will predict to 114,314.51 billion rupiah in 2020, yet it will be potential decline earnings to 56,660.61 billion rupiah at the same time. It will be happen, if the local government can not handle it well. In 2015, TS has downward trend, which is 6,159.74 billion toward to 6,128.312 billion rupiah in 2020. Yet FSCS and TCS has upward trend, which is 1,368.03 and 3008.7 billion rupiah toward to 2,637.196 and 5,864.499 billion rupiah respectively in 2020. When income of TS, FSCS and TCS can be maximized, which is projected to 11,510.367; 3,026.909, and 8039.25 billion rupiah, but it will be potential decline earnings to 746.257; 2,247.483, and 3,689,748 billion rupiah respectively at the same time.

Keywords: *Forecasting, Gross Domestic Product, Trade Sector, Financial Services Company Sector, Transportation Communications Sector*

1.0 INTRODUCTION

Development is a process towards continuous change striving to improve the welfare of the community. One indicator of the successful implementation of development that can be used as a measure of economic growth at the macro level is reflected in the changes in Gross Domestic Product (GDP) in the region. A higher the economic growth of a region indicates a better economic activity as obtained from the GDP growth rate at constant prices (Todaro and Smith, 2008).

In general the Banyumas Regency economic growth continuously from year to year. It is clearly seen that the influence of GDP rates in the last 3 years, where income of GDP went up to 31,369.32 billion rupiah in 2013. However, it had increased to 38,798.79 billion rupiah in 2015. Whereas the number of GDP has at 31,164.88 billion rupiah in 2015, so the real economic in Banyumas Regency has growth to 6.12 percent from the previous year. Recently, Banyumas Regency has experienced rapid progress of various sectors that including trade sector (TS), financial services company sector (FSCS) and transportation communications sector (TCS). In General, almost every district has facilities such as shops and markets trade. In 2014, there are 92 supermarket or minimarket are concentrated in Purwokerto city, which is approximately 102 markets (including market animals) in 2015. In the trade sector (such as hotels and tourism), where there are 182 hotels (scattered in 17 sub-districts) which consists of 10 star hotels and 172 non-star hotels. The number of hotels in Baturaden was the highest number hotels roughly 113 which is 3 star hotels and 110 non-star hotels (Statistics of Banyumas Regency, 2016). Therefore, the aims to investigate the influence of the Trade Sector (TS), Financial Services Company Sector (FSCS), and the Transportation Communications Sector (TCS) towards Gross Domestic Product (GDP) of Banyumas Regency and predicting income of these sectors for next 5 years using ARIMA Model.

2.0 MATERIALS AND METHODS

Economic growth measures the achievement of the development of an economy. Measurement of the progress of an economy requires precise measuring instruments, such as gauges of economic growth. The Gross Domestic Product is such a measure, where at the regional level it is called the Gross Domestic Product (GDP) which measures the amount of goods or services produced by an economy in the run period of one year and expressed in market prices. According to classical economics, Smith, economic growth is influenced by two main factors, namely total output growth and population growth. Economic growth is strongly influenced by the productivity of sectors in the use of production factors. Productivity can be improved through a variety of means of education, training and better management (Sukirno, 2008).

2.1 Economic Development

Economic development is one important part of the national development with the ultimate goal to improve the welfare of the community. Economic development is generally defined as a process that leads to an increase in real per capita income of a country in the long run, accompanied by improvements in the institutional system (Arsyad, 1999). While according to Jhingan (2000), seen from the side of the main objectives of economic development, which is to build capital equipment (physical infrastructure) in a sufficient scale to increase productivity in various fields, among others, agriculture, mining, and industrial estates. Capital is also needed to build schools, hospitals, roads, railways, ports, airports and so on. In summary nature of economic development is the creation of capital social and economic overhead. Furthermore, capital formation made the construction possible, despite a population increase due to investment in capital equipment not only increase production, but also to generate employment opportunities and technical advances that support the achievement of broad scale economic production and increasing specialization.

2.2 Economic Growth

Economic growth is the increase in output per capita in the long run. Economic growth is a "process", not an economic picture at a time. According to Kuznets (in Jhingan, 2000) defines economic growth as a long term increase in the ability of a country to provide more and more types of economic goods to its population's ability to grow in accordance with the advancement of technology and institutional adjustment, and ideological needs. This definition has three components i.e. first, economic growth of a nation to improved continuously supplies. Second, the advanced technology is a factor in economic growth that determines the degree of growth capacity in the provision of various kinds of goods. Third, the use of technology is widely and efficiently requires an adjustment in the institutional and ideological that innovation generated by science mankind can be properly utilized. Modern technology, for example, does not match the pattern of village life, family patterns, family businesses, and illiteracy.

2.3 Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is one of the important indicators to look the economic condition in a province during a certain period of time, whether based on actual price or constant price. Principally, GDP is the amount of additional value resulted by all business units in a certain province, or the number of goods and services produces by all economic units. Total amount of production side should be equal with consumption expenditure for goods and services. Based on current price, GDP displays the additional values of goods and services calculated using the

market price in the current year, while based on constant price it displays the additional values of goods and services using the applicable/constant price during a certain year as a basis. GDP based on actual price reflecting economic resources distribute in province area. while, constant GDP is used to discover resources capability in persuade real economic growth from year to year or economic growth which is not affected by the price factor. GDP can also be used to discover price changes by calculating GDP deflator (implicit price index). GDP deflator is a ratio number among GDP based on current price compare to constant price (Bank Indonesia, 2015).

2.4 Trade Sector (TS)

The theory of mercantilism that assumes economic growth of a country growing as the result of any such expenses from any other country. A country can increase wealth by selling his belongings abroad (Sukirno, 2008). The theory of absolute advantage built by Adam Smith as an improvement over the mercantilism. According to Adam Smith, that trade would increase prosperity when implemented through the mechanism of free trade. Every country will benefit trade due to specialization of production and export of goods if the country has an absolute advantage, and imported goods if the country has no absolute advantage. A locality will export commodity production more production factors assimilate relatively abundant and cheap in the region, and in the same time it will also import commodity production requires resources that are relatively scarce and expensive in the region. Variables included in the sector of trade is trade, restaurants, hotels, major trade and retail, repair of cars and motorcycles.

2.5 Financial Services Company Sector (FSCS)

In 2010, GDP of Banyumas Regency on the basis of the applicable rates of 10.33 billion rupiah and on the basis of constant prices of 2000 amounted to 4.65 billion rupiah with per capita income on the basis of the applicable rates of 6,648,929 rupiah. GDP of this sectors clearly visible that the annually GDP increased from 936.64 to 1,368.03 billion rupiah between 2012 and 2015, which is growth rate from 3.29% to 3.53% at the same time. Variables entered in this trade are financial, tenancy, services companies, financial services and insurance (Statistics of Banyumas Regency, 2016).

2.6 Transportation Communications Sector (TCS)

Services are offered to one party to the other party, that is essentially intangible and does not result in ownership of a production, as well as any service may be related or may not be related to physical (Kothler, 2008). GDP of the transportation communications sector, clearly visible that the GDP from this sector increased from

2,354.12 to 3,008.70 billion rupiah between 2012 and 2015, which is growth rate from 8.26% to 7.75% at the same time. Variables entered in the trade sector is transportation, warehousing, information, communication, and transportation (Statistics of Banyumas Regency, 2016).

2.7 ARIMA Model

Time series is data collected from time to time to provide an overview of the development of an activity during the period. Time series allows to know the development of one or several events as well as its relationship towards other events. Time series is data collected, recorded, or observed based on the time sequence. In General, the purpose of time series is to find the shape of the pattern of data in the past and use this knowledge to perform divination towards properties of data in the future (Suhartono, 2008). Forecasting is necessary to determine when an event will occur or has occurred, so that appropriate action can be performed. Forecasting is important enough in the planning to know in advance of the events to come. Forecasting the future is based on the value of a variable or past mistakes made earlier with the aim of examining the patterns of data used to predict and do the extrapolation into the future. Autoregressive Integrated Moving Average (ARIMA) models is a popular model in the forecasting of time series approach from (Zou, H. and Yang, Y., 2004) and (Fernandes, et al, 2008). In General, the formula of ARIMA model was given by:

$$(1 - a_1 B - \dots - a_p B^p)(1 - B)^d Y_t = \mu + b_1 \varepsilon_{t-1} + \dots + b_q \varepsilon_{t-q} \quad (1)$$

with B is the backward operator with $(B^j Y)_t = Y_{t-j}$

If data is found with a variant that is not homogeneous and not Gaussian, it need to transform the data. Transformation method can be used Box-Cox transformation which the formula was given by:

$$y = \frac{(x^\lambda - 1)}{\lambda}, \lambda \neq 0 \quad (2)$$

If the data is not stationary in the mean or average so it needs the differencing process. if the process at the first differencing data stationary is not reached, then it needs to a two-order differencing process (Rosadi, 2011).

3.0 RESULTS

This research was conducted using secondary data collected from relevant agencies (BPS Banyumas Regency) in Purwokerto City, Central of Java. This research was carried out during period 2003 to 2015. This study used data regression analysis so the empirical model estimate was given by this formula:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \quad (3)$$

where,

Y is Gross Domestic Product (GDP)

β_0 is Constanta

β_1 is Trade Sector (TS)

β_2 is Financial Services Company Sector (FSCS)

β_3 is Transportation Communications Sector (TCS) is Gross Domestic Product (GDP)

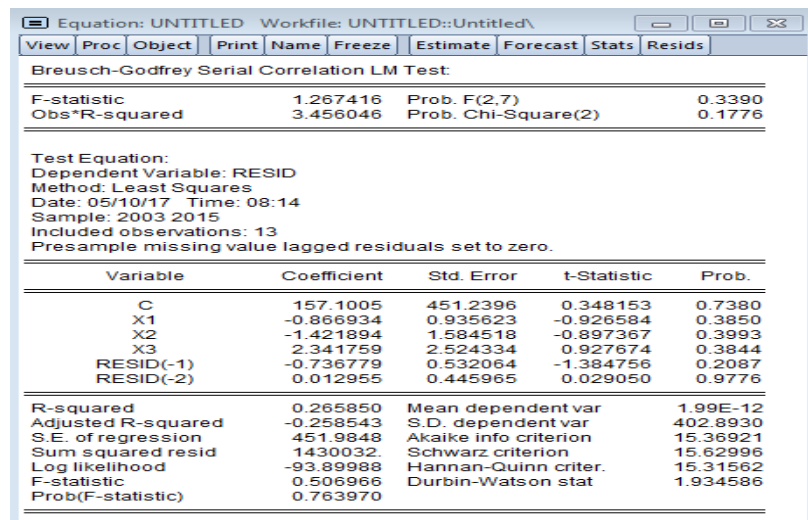
β_0 is Error Variable

First of all, the test should be fulfill assumptions of linear regression. Linear regression is an analysis that assesses whether one or more predictor variables explain the dependent (criterion) variable. The regression has four key assumptions such as no autocorrelation, no multicollinearity, normality, and homoscedasticity. After that, the t-test, the F-test, Adjusted R^2 are represented respectively.

3.1 Linear Regression Model

First, linear regression needs the relationship between the independent and dependent variables to be linear. It is also important to check for outliers since linear regression is sensitive to outlier effects. There must be a linear relationship between the outcome variable and the independent variables.

3.1.1 No Autocorrelation Test

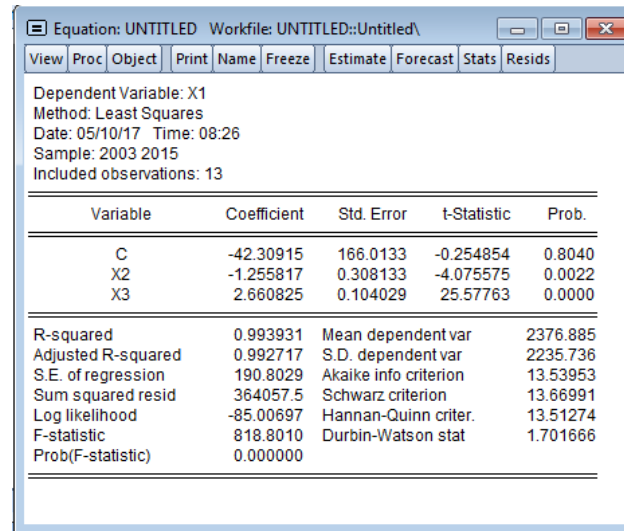


Breusch-Godfrey Serial Correlation LM Test				
F-statistic	1.267416	Prob. F(2,7)	0.3390	
Obs*R-squared	3.456046	Prob. Chi-Square(2)	0.1776	
Test Equation:				
Dependent Variable: RESID				
Method: Least Squares				
Date: 05/10/17 Time: 08:14				
Sample: 2003 2015				
Included observations: 13				
Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	157.1005	451.2396	0.348153	0.7380
X1	-0.866934	0.935623	-0.926584	0.3850
X2	-1.421894	1.584518	-0.897367	0.3993
X3	2.341759	2.524334	0.927674	0.3844
RESID(-1)	-0.736779	0.532064	-1.384756	0.2087
RESID(-2)	0.012955	0.445965	0.029050	0.9776
R-squared	0.265850	Mean dependent var	1.99E-12	
Adjusted R-squared	-0.258543	S.D. dependent var	402.8930	
S.E. of regression	451.9848	Akaike info criterion	15.36921	
Sum squared resid	1430032.	Schwarz criterion	15.62996	
Log likelihood	-93.89988	Hannan-Quinn criter.	15.31562	
F-statistic	0.506966	Durbin-Watson stat	1.934586	
Prob(F-statistic)	0.763970			

Figure 1. Breusch-Godfrey Serial Correlation LM Test

It can be seen immediately that the value of F-Statistic probability is 0.3390 greater than alpha 0.05, then it can be inferred that there is no autocorrelation in the data.

3.1.2 Multicollinearity Test

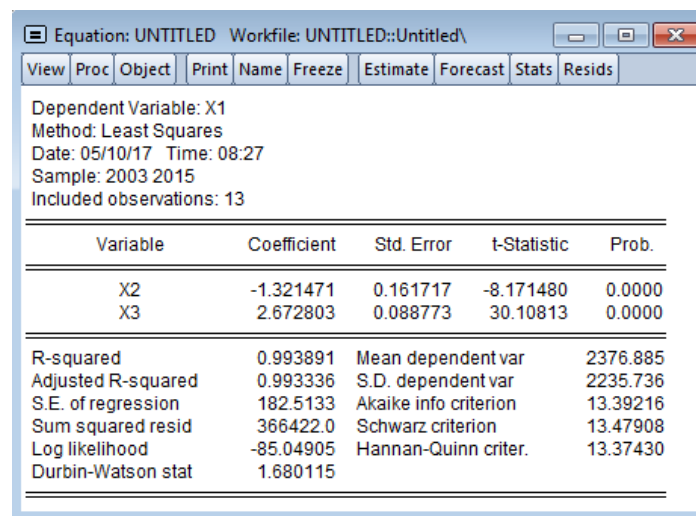


Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-42.30915	166.0133	-0.254854	0.8040
X2	-1.255817	0.308133	-4.075575	0.0022
X3	2.660825	0.104029	25.57763	0.0000

R-squared	0.993931	Mean dependent var	2376.885
Adjusted R-squared	0.992717	S.D. dependent var	2235.736
S.E. of regression	190.8029	Akaike info criterion	13.53953
Sum squared resid	364057.5	Schwarz criterion	13.66991
Log likelihood	-85.00697	Hannan-Quinn criter.	13.51274
F-statistic	818.8010	Durbin-Watson stat	1.701666
Prob(F-statistic)	0.000000		

Figure 2. Multicollinearity Test Towards Constant, X2, X3 and Variables

Because the constant variable is not significant i.e. Probability (0.804) > 0.05, this test was reestimated without constant variable.



Variable	Coefficient	Std. Error	t-Statistic	Prob.
X2	-1.321471	0.161717	-8.171480	0.0000
X3	2.672803	0.088773	30.10813	0.0000

R-squared	0.993891	Mean dependent var	2376.885
Adjusted R-squared	0.993336	S.D. dependent var	2235.736
S.E. of regression	182.5133	Akaike info criterion	13.39216
Sum squared resid	366422.0	Schwarz criterion	13.47908
Log likelihood	-85.04905	Hannan-Quinn criter.	13.37430
Durbin-Watson stat	1.680115		

Figure 3. Multicollinearity Test Towards X2 and X3 Variables without Constant Variable

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.649703	0.079509	-8.171480	0.0000
X3	1.809001	0.160236	11.28961	0.0000

R-squared	0.857462	Mean dependent var	815.0223
Adjusted R-squared	0.844504	S.D. dependent var	324.5367
S.E. of regression	127.9744	Akaike info criterion	12.68218
Sum squared resid	180151.8	Schwarz criterion	12.76909
Log likelihood	-80.43414	Hannan-Quinn criter.	12.66431
Durbin-Watson stat	1.502146		

Figure 4. Multicollinearity Test Towards X1 and X3 Variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.369653	0.012278	30.10813	0.0000
X2	0.508873	0.045074	11.28961	0.0000

R-squared	0.995430	Mean dependent var	1293.852
Adjusted R-squared	0.995014	S.D. dependent var	961.2704
S.E. of regression	67.87476	Akaike info criterion	11.41384
Sum squared resid	50676.82	Schwarz criterion	11.50076
Log likelihood	-72.18998	Hannan-Quinn criter.	11.39598
Durbin-Watson stat	1.661580		

Figure 5. Multicollinearity Test Towards X1 and X2 Variables

In the Figure 2, the value of R^2 is 0.999006, which called R^2_{11} . In the figure 3, the value of R^2 is 0.993891, which called R^2_{11} . In the figure 4, the value of R^2 is 0.857462, which called R^2_{12} . In the figure 5, the value of R^2 is 0.995430, which called R^2_{13} . Because the value of the $R^2_{11} > R^2_{11}, R^2_{12}, R^2_{13}$, there is no multicollinearity in the data.

3.1.3 Normality Test

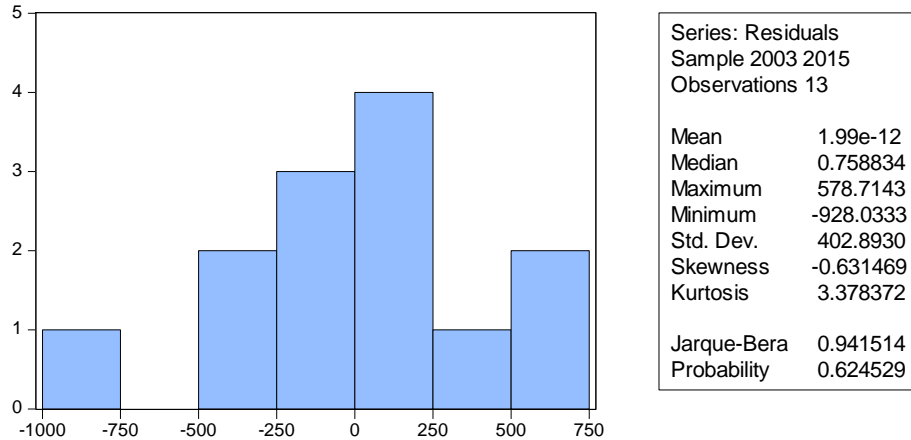


Figure 6. Normality Test

At the Graphic 1, it can be seen that the probability value of Jarque-Bera has $0.6245 > \alpha 0.05$. It means that the residual data normally distributed and this test has been fulfilled.

3.1.4 Homoscedasticity Test

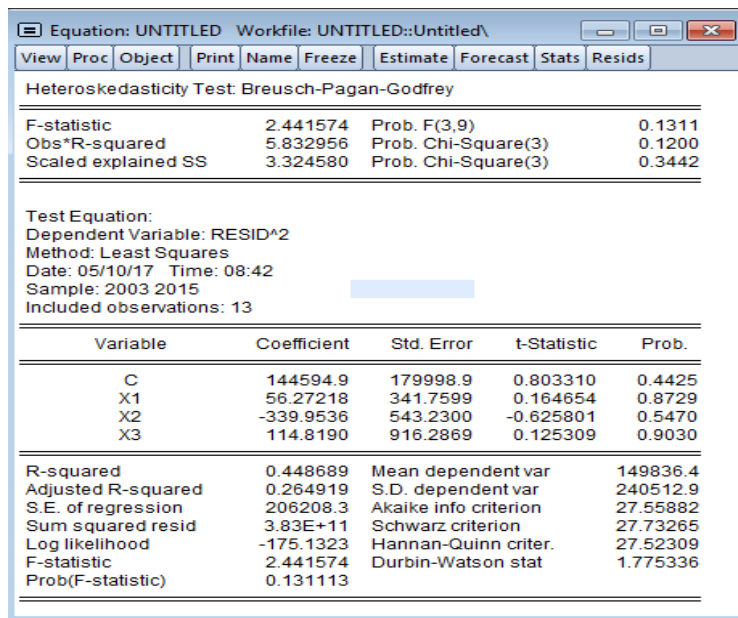


Figure 7. Heteroskedasticity Test Breusch-Pagan-Godfrey

From Heteroskedasticity Test Breusch-Pagan-Godfrey above, the value of F-Statistic Probability is $0.1311 > \alpha 0.05$. It means that this model has no heteroscedasticity problem and passed the assumption.

After fulfilling assumptions of linear regression, it can be inferred that statistically the Trade Sector, the Financial and Services Company Sector and Transportation Communication Sectors have influenced on GDP.

3.2 T-test, F test, and adjusted R^2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1867.542	406.0905	-4.598832	0.0013
X1	1.107041	0.771035	1.435785	0.1849
X2	1.869068	1.225566	1.525065	0.1616
X3	10.20759	2.067210	4.937861	0.0008

R-squared	0.999006	Mean dependent var	15494.22
Adjusted R-squared	0.998675	S.D. dependent var	12781.61
S.E. of regression	465.2208	Akaike info criterion	15.37056
Sum squared resid	1947874.	Schwarz criterion	15.54439
Log likelihood	-95.90865	Hannan-Quinn criter.	15.33483
F-statistic	3016.345	Durbin-Watson stat	2.466293
Prob(F-statistic)	0.000000		

Figure 8. T-test, F test, and adjusted R^2

At the Figure 8, it also seen goodness of fit model and the value of adjusted R^2 . T-test was conducted to test whether Trade Sector, Financial Services Company Sector and Transportation Communications Sector partially influence on GDP and F-test was conducted to test whether Trade Sector, Financial Services Company Sector and Transportation Communications Sector simultaneously influence on GDP.

3.2.1 T-test (Partial Test)

From the figure 8 above, the value of constant (C), Trade Sector (X1), Financial Services Company Sector (X2), and Transportation Communications Sector (X3) will be explain as follow:

1) Constant (C)

It can be seen that the value of C in t-test was 4.598832 with p-value 0.0013, which is smaller than alpha 5%. Thus, H_0 rejected so we can conclude that Constants (C) has an effect on GDP. Constants (C) negative

means that when other sectors are not able to provide GDP income, then the Local Government should be seeking other sources to cover other sectors.

2) Trade Sector (X1)

It can be seen that the value of Trade Sector (X1) in t-test was 1.435785 with p-value 0.1849, which is greater than alpha 5%. Thus, H_0 accepted so we can conclude that Trade Sector (X1) has no effect on GDP.

3) Financial Services Company Sector (X2)

It can be seen that the value of Financial Services Company Sector (X2) in t-test was 1.525065 with p-value 0.1616, which is greater than alpha 5%. Thus, H_0 accepted so we can conclude that Financial Services Company Sector (X2) has no effect on GDP.

4) Transportation Communications Sector (X3)

It can be seen that the value of Transportation Communications Sector (X3) in t-test was 4.937861 with p-value 0.0008, which is smaller than alpha 5%. Thus, H_0 rejected so we can conclude that Transportation Communications Sector (X3) has an effect on GDP.

3.2.2 F-test (Simultaneous Test)

Furthermore, from the figure 8 above, the F-test result shows the F-statistic value of 3016.345 with probability value of 0.000000. It means that H_0 rejected because probability value (0.0000) is smaller than (alpha = 0.05). Thus, we can conclude that Trade Sector, Financial Services Company Sector and Transportation Communications Sector simultaneously have an effect on GDP.

3.2.3 Adjusted R^2

In addition, from the figure 8 above, The value of R^2 is 0.999006, meaning that Trade Sector, Financial Services Company Sector and Transportation Communications Sector have an effect on GDP of 99.9006%, whereas the value (0.0994%) is explained by other variables that are not included in the model.

From the output figure 8 above, the regression equation is obtained was given by:

$$Y = -1867.54 + 1.107X_1 + 1.869X_2 + 10.207X_3 + \varepsilon$$

It can be seen that the coefficient of X1 is 1.107041 means that 1 percent rise for Trade Sector that will increase the GDP of 1.107 percent. The coefficient of X2 is

1.869068 means that 1 percent rise for Financial Services Company Sector that will increase the GDP of 1.869 percent. The coefficient of X3 is 10.20759 means that rising 1 percent Transportation Communications Sector that will increase the GDP of 10,207 percent. It means that Transportation Communications Sector has the greatest influence of the all of sectors.

3.3 Forecasting

Using the selected best fit model, the forecasted values are obtained for next three years along with the confidence intervals by forecasting tool of SPSS 20.0. The process might continue to obtain forecast for any further period, the standard error associated with the prediction increases. But it is advisable to use ARIMA for short-term forecast since uncertainty increases as prediction is made for farther periods (Sarika, et al, 2011).

3.3.1 GDP Model

Using the best models of ARIMA (1,1,1) without constant will be forecast next 5 years (2016-2020) was given by:

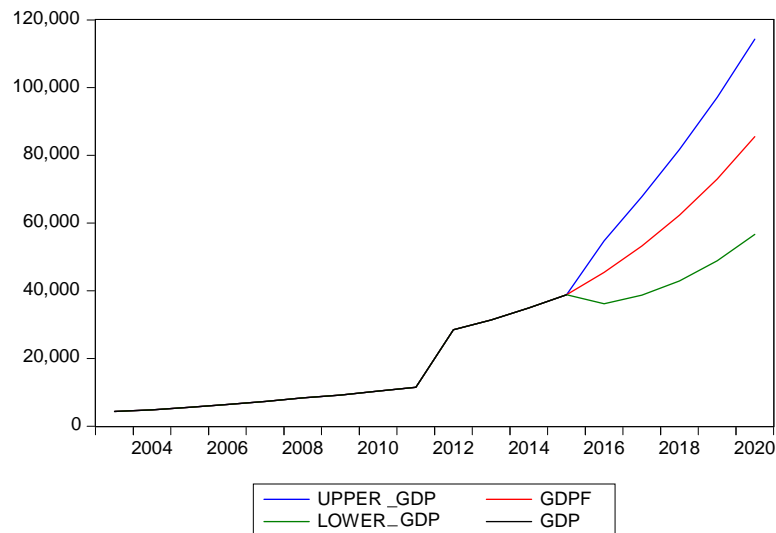


Figure 9. Line Chart of GDP Model

The GDP showed a positive trend, which is 38,798.78 billion rupiah in 2015, furthermore, the forecasting will reach more than 2 times at 85,487.49 billion rupiah in 2020. When income of GDP can be maximized, it will predict to 114,314.51 billion rupiah in 2020, yet it will be potential decline earnings to

56,660.61 billion rupiah at the same time. It will be happen, if the local government can not handle it well.

3.3.2 Trade Sector (TS) Model

Using the best models of ARIMA (1,1,1) without constant will be forecast next 5 years (2016-2020) was given by:

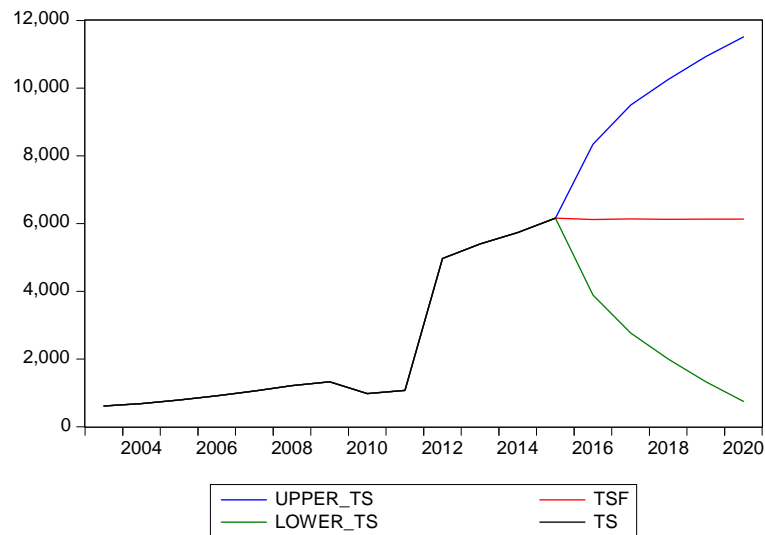


Figure 10. Line Chart of Trade Sector Model

In 2015, TS has downward trend, which is 6,159.74 billion toward to 6,128.312 billion rupiah in 2020. When income of TS can be maximized, which is projected to 11,510.367 billion rupiah, but it will be potential decline earnings to 746.257 billion rupiah at the same time. However, it should be a serious concern to Local Government because a significant reduction up to 8 times more in 2020 (6,128.312 billion rupiah compare with 746.257 billion rupiah). In this case, Local Government should be more moving people's economy so the income from this sector could be better.

3.3.3 Financial Services Company Sector (FSCS) Model

Using the best models of ARIMA (2,1,1) without constant will be forecast next 5 years (2016-2020) was given by:

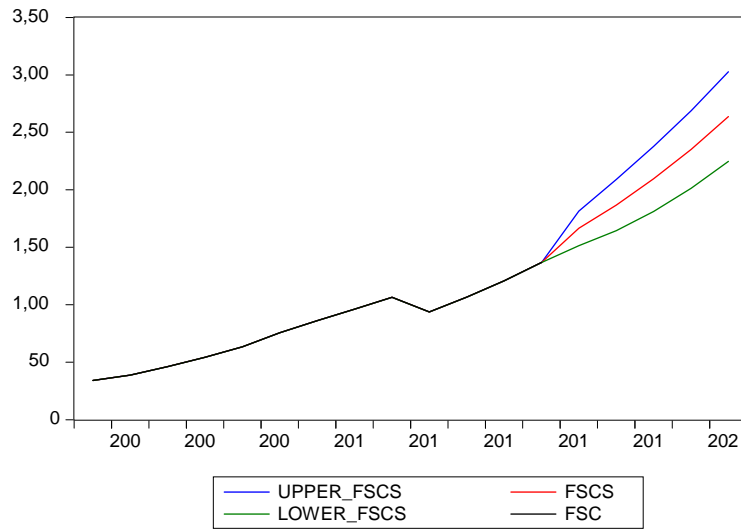


Figure 11. Line Chart of Financial Services Company Sector Model

In 2015, FSCS has upward trend, which is 1,368.03 billion rupiah toward to 2,637.196 billion rupiah in 2020. When income of FSCS can be maximized, which is projected to 3,026.909 billion rupiah, but it will be potential decline earnings to 2,247.483 billion rupiah respectively at the same time.

3.3.4 Transportation Communications Sector (TCS) Model

Using the best models of ARIMA (1,1,1) without constant will be forecast next 5 years (2016-2020) was given by:

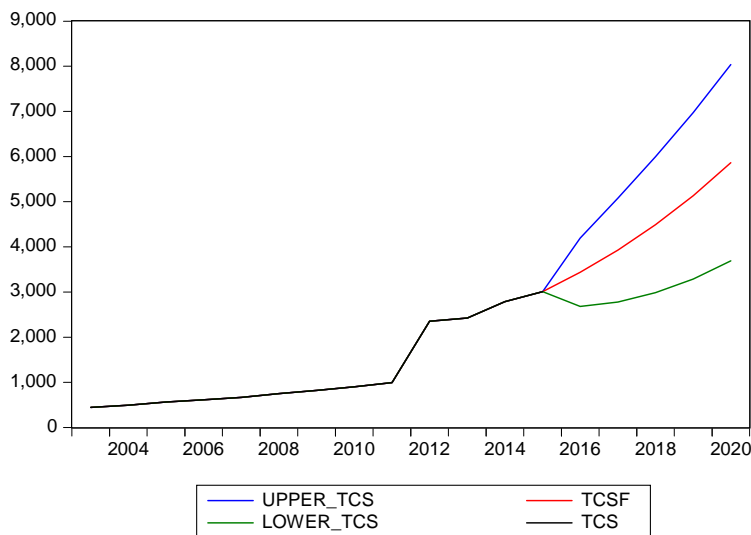


Figure 12. Line Chart of Transportation Communications Sector Model

In 2015, TCS has upward trend, which is 3008.7 billion rupiah toward to 5,864.499 billion rupiah in 2020. When income of TCS can be maximized, which is projected to 8,039.25 billion rupiah, but it will be potential decline earnings to 3,689,748 billion rupiah at the same time.

4.0 RESULTS & DISCUSSIONS

4.1 Results

It can be seen that the t-test shows the TS, and FSCS does not influence significantly to GDP, but the TCS gives significant influence to GDP; however, F-test simultaneously shows all sectors have significant effects to GDP. The GDP showed a positive trend, which is 38,798.78 billion rupiah in 2015, furthermore, the forecasting will reach more than 2 times at 85,487.49 billion rupiah in 2020. When income of GDP can be maximized, it will predict to 114,314.51 billion rupiah in 2020, yet it will be potential decline earnings to 56,660.61 billion rupiah at the same time. It will be happen, if the local government can not handle it well. In 2015, TS has downward trend, which is 6,159.74 billion toward to 6,128.312 billion rupiah in 2020. Yet FSCS and TCS has upward trend, which is 1,368.03 and 3008.7 billion rupiah toward to 2,637.196 and 5,864.499 billion rupiah respectively in 2020. When income of TS, FSCS and TCS can be maximized, which is projected to 11,510.367; 3,026.909, and 8039.25 billion rupiah, but it will be potential decline earnings to 746.257; 2,247.483, and 3,689,748 billion rupiah respectively at the same time.

4.2 Discussions

Local government can increase in the number of GDP from the other sectors such as industry, good and service, and so on. Furhermore, in the next research, the researcher can investigate the influence of the other sectors toward to GDP to be more accurate result.

5.0 ACKNOWLEDGEMENT

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Chapter 17: Fish Diversity and Age Structure in Pelus River Area Residency of Banyumas

Susanto

This research was purposed to reveal and discover fish community in Pelus River, Banyumas Residency. It includes: (1) aquatic qualities which include physical and chemical parameters and plankton species variation, (2) Fish diversity, (3) Fish age structure based weight and total length. Research done by survey methods, with purposive random sampling methode. There were three research locations, which were: location one (upstream of Pelus River), location two (middle stream of Pelus River), and location three (downstream of Pelus River). There were three sampling points in each location: right side, left side, and in the middle of the river. Fish sampling, plankton sampling, and aquatic physical and chemical factors measuring were done at noon (08.00-14.00 Local Time) and at night (20.00-24.00 Local Time). Peripherals used were: spreaded nets, and hands web. Peripherals used was: spreaded nets, and hands web. Research was done in eight months which replicated every month, since December 2016 till May 2017. Sampled species then identified and verified in [www. FishBase.org](http://www.FishBase.org). Data analysis including: aquatic physical and chemical parameter and plankton species variation, fish species diversity, and fish age structure. During research fishes caught were as many as 544 fishes divided to 18 Species, eight Family and five Ordo. Aquatic qualities factor including aquatic physical and chemical parameters, which were: temperature, flowrate, brightness, dissolved oxygen and pH and plankton species variation in Pelus River Banyumas Residency were in good condition and suitable for fishes life. Cyprinidae Family found as most variated species and most founded spesies in individual number at Pelus River Banyumas Residency. There were low species diversity, but there weren't found any dominancies. Fish species diversity in Pelus river

low. Age structure shows the condition of fish in Pelus River of Banyumas regency is in a vulnerable condition, so it needs attention in order to conserve fish species.

Keywords: *Fish diversity, age structure, Pelus River, Banyumas.*

1.0 INTRODUCTION

The management of fishery resources in Pelus River is an integral part of water management that is suitable with its main objective that is optimum water utilization with maintaining environmental sustainability. The final purpose is the achievement of community welfare. Therefore, to maintain the potential of fishery biological resources in these waters need integrated handling from the fisheries sector and conservation.

The people of Banyumas Residency, especially those who are living in areas along the Pelus River, utilize the river resources, both biological and non-biological resources in order to meet the life necessary and increase welfare. In utilizing their biological resources to catch a fish, while the utilization of non-biological resources of the community to do sand and stone mining activities. In conducting of fishing and sand and rock mining activities, people are not know about fish species and their properties. They also do not understand whether the activities undertaken affect the existing fish stocks, growth and sustainability of the species.

Excessive fishing, sand and stone mining in Pelus River are alleged to be able to change the Pelus River ecosystem that flows in Banyumas Residency. The ecosystem changes in the Pelus River will affect the physical and chemical parameters of the waters and the fish communities living in the river. These changes will ultimately affect the diversity of fish species and their age structure.

Excessive fishing activities and sand and stone mining in the Pelus River Banyumas Residency can affect the fish communities living in them, especially the abundance and diversity of species. The abundance and diversity of these fish species will descent and ultimately threaten the fish sustainability. Based on the explanation, the research on fish community in Pelus River Region of Banyumas Regency needs to be done. The purpose of this research is to reveal and describe the water quality condition and the diversity and age structure of fish in Sungai Pelus Region of Banyumas Residency, which is:

1. Water quality including physical and chemical parameters of waters, namely: temperature, flow velocity, water clarity, dissolved oxygen content and pH and variation of plankton species.
2. Diversity of fish
3. Fish age structure based on weight and total length of fish.

The results of this study are expected to increase the ecology comprehension, especially about fish communities in the lotik habitat. In addition, the results of this study also can be used as input for evaluation materials for decision makers in determining the policy of Pelus River management. Thus the results of this study are expected to be used as a reference for the management of Pelus River in the Region of Banyumas Residency particularly and other rivers in Indonesia.

The management of Pelus River in Banyumas Residency is not yet integrated and has not accommodate ecological considerations. Excessive exploitation of fish in Pelus River has the potential to threaten the existence and sustainability of various fish species in it. It is expected that fishing activities and sand and stone mining conducted by the community can be implemented wisely, which means fishing and mining by considering the conservation efforts of biological resources, especially fish.

For people who living or domiciled in Pelus River area, the existence of various types of fish in the river is a source of nutrition and additional income. If the existence of various types of fish in the Pelus River continues to decrease, the source of nutrition and additional income will also be reduced. Therefore, the existence of various species of fish in the Pelus River is important to sustain its preservation.

2.0 RESEARCH METHODS

2.1 Description of research location

The research was conducted in Pelus River Region of Banyumas Residency at three locations: location one is upstream of Pelus River, has rocky river base and the most swift river flow compared to other location. Location two is the middle part of the Pelus River channel, the river base at this location is sandy and the river stream is slower than the location one. Location three is the estuary of Pelus River, sandy mud river base and river currents slower than location one.

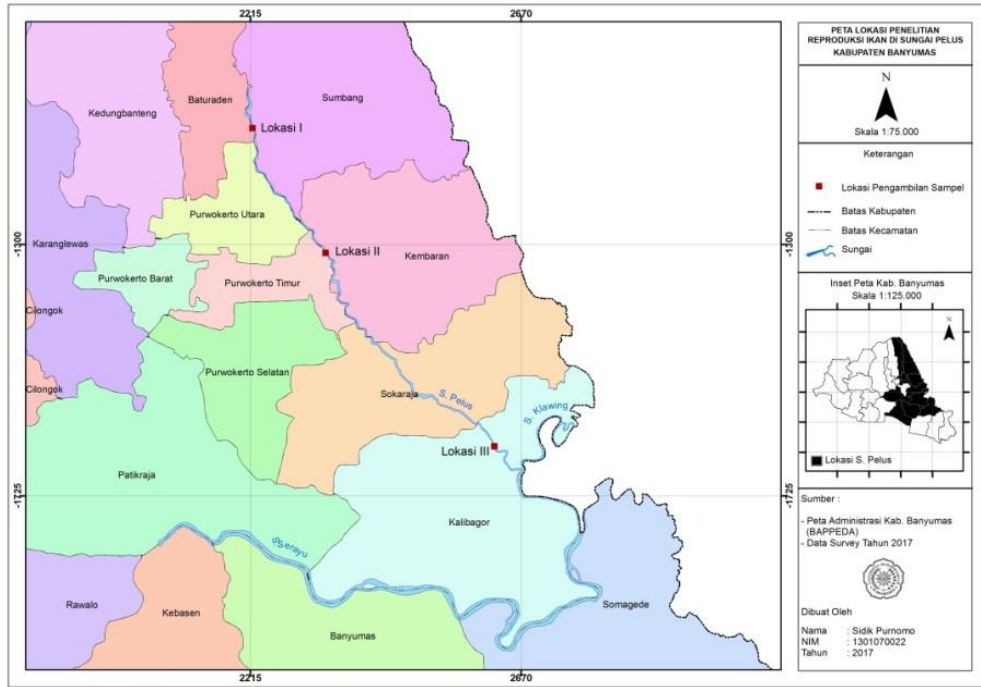


Figure 1. Overall Research Location

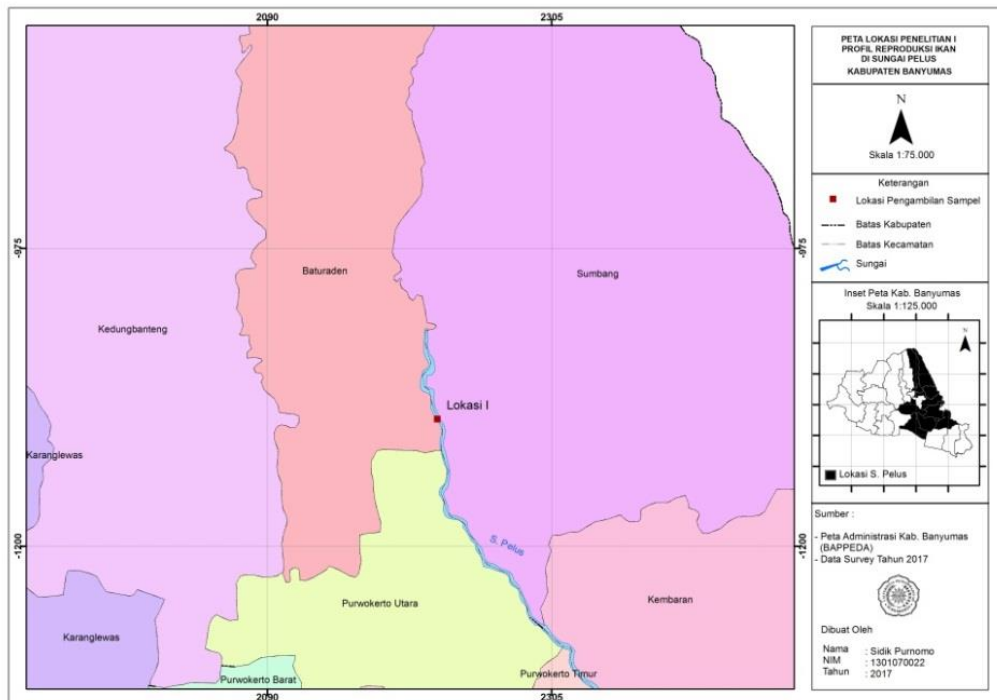
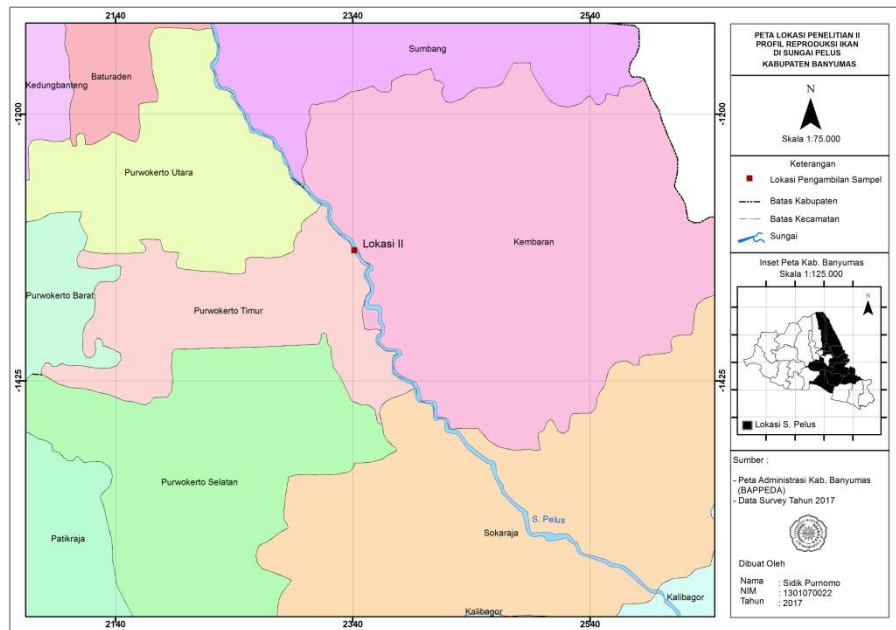
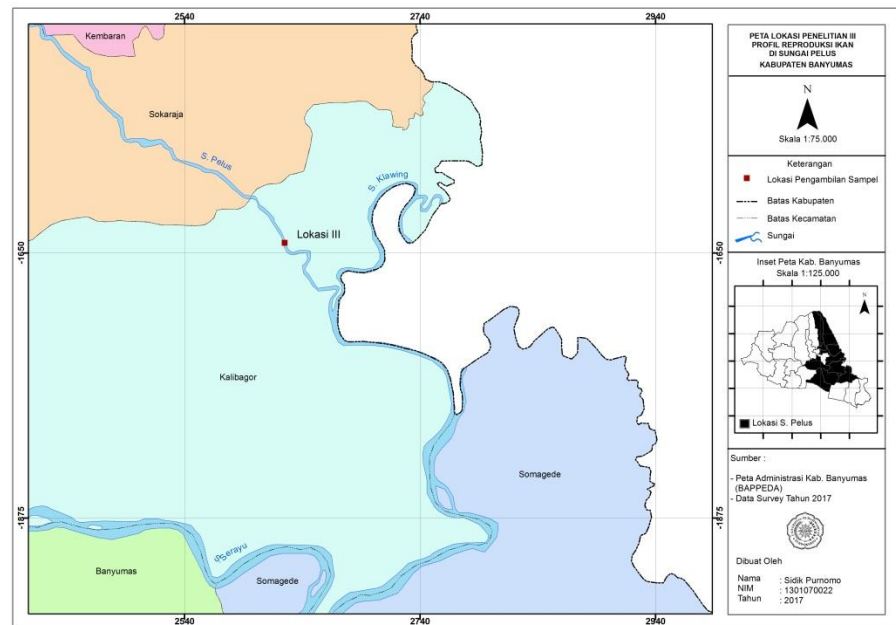


Figure 2. Reseach Location 1 Pandak Village



(A)



(B)

Figure 3. Pelus River Location 2 Arcawinagun (A), Location 3 Petir (B)

2.2 Procedure of Location Determination and Research Station

The research was conducted using survey method, with purposive random sampling technique (Mantra and Kasto, 1989). The study was conducted for six months

(December 2016 - May 2017). Sampling is done six times at one month interval, with consider the time of day (08.00 - 14.00) and night (at 20.00 - 24.00). Fish sampling and water quality measurements in the form of physical and chemical parameters of the waters and variation of plankton species were conducted at each study site.

Fish sampling is done by using fishing gear nets, gill net, and fish net. Fish sampling is done by spreading nets 10 times and 10 times scoops for fish net at each sampling point. Measurements of water quality including temperature, flow velocity, water clarity, dissolved oxygen content and pH and variation of plankton species were performed three times at each sampling point.

Data collection procedure was done as follows:

2.2.1 Measurement of water quality: physical and chemical parameters of the waters and variation of plankton species. Measurements of environmental factors that include the physical and chemical parameters of the waters, namely: temperature, flow velocity, water clarity, dissolved oxygen content and pH and variation of plankton species is done in situ, namely: (1) Water temperature is measured by using mercury thermometer. The thermometer is immersed in water until the mercury is constant or immobile, then the number listed is recorded in degrees Celsius (°C). (2) The flow velocity is measured using by flowmeter. The flowmeter is inserted into the water and recorded the flow velocity shown by meters per second (m/s). (3) The clarity of the water is measured using Sechi Disc by gently inserting the device until it is not visible, then the Sechi Disc is inserted more deeper and lifted slowly until it begins to appear. The distance between the surface waters until the Sechi Disc does not appear or begins to appear is measured by measurement tape and recorded by centimeter (cm). (4) The dissolved oxygen content is measured using a DO meter, by inserting the sensor tip into water and then waiting until the digital number shows a constant number, the dissolved oxygen content is represented by the constant number and recorded in ppm. 5) The pH measurement is performed by using pH meter, the numbers appearing on the monitor then recorded. (6) Plankton sampling is done by filtering 100 liters of river water using plankton-net no. 25, then the water stored in the flacon bottle is transferred into the sample bottle and alcohol 70% is added. Each observation of a sample bottle, sampled one cc was observed with SRCC (Sedgwick Rafter Counting Cell) and identified variations in plankton species based on Sachlan (1982) and Anonymous (1989). In observation only recorded only species variations.

2.2.2 Diversity and age structure of fish. Fish sampling is done by using mesh stocking and fish net equipment commonly used by fishermen. That taking is done by fishermen to get as many fish species as possible in the study area. The stocking net that used has a mesh net size one cm² with a diameter 3 m. Fish net as a second fishing equipment has an equilateral triangle shape on each side is given strengthener using bamboo. Each side has a length of 75 cm and with mesh net sized one mm². Samples of fish caught by fishing nets are pelagic fish (surface waters) and demersal (bottom waters), while fish caught with fish net are peripheral (river edge) fish.

Samples of captured fish are placed in plastic bags, labeled, and put into Ice Box (storage place and temporary fish preservation) then taken to Zoology Laboratory, Biology Education Program, Faculty of Teacher Training and Education, Muhammadiyah University of Purwokerto to be identified and preserved with formalin 4%. Fish catches from each station were measured in total length by millimeters, weight was measured using digital scales with gram unit, fish species and number of caught fish are counted. Fish identification based on Saanin, H. (1968, 1984), and Kottelat et al. (1993) and verified with www.FishBase.org.

2.3 Data Analysis

2.3.1 Diversity of Fish

Index of diversity. Level of species diversity in a community can be known by using the species diversity formula from Shanon-Wiener Diversity Index (Odum, 1971). The Shanon-Wiener diversity index shows the relationship between the number of species and the number of individuals which arranges the community, namely:

$$H' = \sum (ni/N) \log_2(ni/N)$$

Description : Σ = amount

H' = Shannon-Wiener diversity index

ni = individual amount of species -i

N = individual amount of all species

2.3.2 Structure of Fish

Analysis of age structure based on total length and weight of fish is done to know the condition of population, which is exist of young fish, adult and old. Fishes that have a total length and weight in small or low ranges indicated

young fish, whereas the total length and weight values of fish in large or high ranges indicated adult and older fish.

3.0 RESULT

3.1 Quality of river waters

3.1.1 Physical factors of water

3.1.1.1 Flow Velocity

It is known that in December 2016 the flow velocity ranged from 0.43 to 1.42 m/s, in January 2017 ranged from 0.65 to 1.65 m/s, in February 2017 ranged from 0.63 to 1.63 m/s, in March 2017 ranged from 0.60 to 1.18 m/s, in April 2017 ranged from 0.40 to 1.60 m/s and in May 2017 ranged from 0.70-0, 95 m/s. It is known that at Location I the flow velocity is between 0.40-1.16 m / s, at Location II the flow velocity ranges between 0.40-1.42 m/s, and at Location III the flow velocity ranges between 0.60- 1.67 m/s.

3.1.1.2 Clarity

Clarity of river waters during the research based on sampling time research, i.e. in December 2016 - April 2017 are: December 2016 clarity 30-50 cm, January 2017 clarity 35-65 cm, February 2017 clarity 35-60 cm, month March 2017 25-65 cm clarity, April 30-40 cm clarity and in May 2017 29-38 cm. The highest range of clarity values was found in January compared to other months.

3.1.1.3 Temperature

The results of temperature measurements based on the time and location of the sampling during the study on December 2016-April 2017, on December 2016 the temperature at the study site was between 24.7-29.8 ° C, on January 2017 between 24.0-27.8°C, on February 2017 between 24.1-31.4°C, on March 2017 between 24.5-31.6°C, on April 2017 between 25.4-27.8°C and on May 2017 ranged from 25.4-27.8 °C. At Location I the temperature at the study sites was between 24.0-31.0°C, at Location II between 24.7-31.6 ° C, and at Location III between 24.7-31.3°C.

3.1.2 Chemical factor of water

3.1.2.1 Acidity

The results of pH measurements based on the time and location of sampling during the study on December 2016-April 2017, were known on December 2016 the pH of water between 6-7, on January 2017 between 6-7, on February 2017 between 6-7, on March 2017 between 6-7, on April 2017 between 6 - 7 and on May 2017 ranged from 6-7. At Location I water pH of 6-7, at Location II of 6-7, and at Location III of 6-7.

3.1.2.2 Dissolved oxygen

The results of the dissolved oxygen measurements based on the time and location of sampling, ie on December 2016-April 2017 it can be seen that on December 2016 dissolved oxygen content between 5.85-8.25 ppm, on January 2017 between 3.76-8, 11 ppm, on February 2017 between 4.68-7.75 ppm, on March 2017 between 3.5-8.11 ppm, on April 2017 between 4.20-6.70 ppm and on May 2017 ranged between 5, 90-7.10 ppm. Location I of dissolved oxygen content between 3,5-8,25 ppm, Location II between 5,20-8,16 ppm, and Location III between 3,76-8,11 ppm.

3.2 Fish diversity

During the research (December 2016-May 2017) successfully obtained 544 fishes consisting of 18 species which including into the eight Family and five Ordo. The results of the complete analysis are presented in Table 1.

Table 1. Species Variation And Individual Count Of Fish Which Obtained During Research (December 2016-May 2017)

Ordo	Famili	Species	Local Name	Individual Count (tail)		
Cypriniformes	Cyprinidae	<i>Osteochilus vittatus</i>	Melem	172		
		<i>Barbonymus balleroides</i>	Brek	205		
		<i>Osteochilus hasselti</i>	Melem Seruni	2		
		<i>Barbonymus gonionotus</i>	Tawes	11		
		<i>Hampala macrolepidota</i>	Palung	6		
		<i>Rasbora lateristriata</i>	Lunjar andong	55		
		<i>Barbodes binotatus</i>	Benter	14		
		<i>Neolissochilus hexagonolepis</i>	Lempon/ mahser/ ikan batak	11		
		Perciformes	Nemacheilidae	<i>Nemacheilus pfeifferae</i>	Uceng	5
			Cichilidae	<i>Oreochromis niloticus</i>	Mujaer	13
<i>Amphilophus labiatus</i>	Red devil			12		
<i>Amphilophus trimaculatus</i>	Louhan			1		

Table 1. (cont.)

Siluriformes	Bagridae	<i>Hemibagrus nemurus</i>	Baceman	8
		<i>Nemateryx caelata</i>	Kathing	3
	Loricariidae	<i>Pterygoplichthys pardalis</i>	Sapu-sapu	11
	Sisoridae	<i>Acrochordonichthys rugosus</i>	Kekel	8
Perciformes	Channidae	<i>Channa striata</i>	Bogo	3
Synbranchiformes	Mastacembelidae	<i>Macrognathus aculeatus</i>	Sili	4
5 Ordo	8 Famili	18 Species	Amount	544

The index value of diversity on December 2016 is between 0.18-0.91. January 2017 between 0.09-0.86. February 2017 between 0.23-0.31. March 2017 between 0.08-9.72. On April 2017 between 0.14-0.92 and on May 2017 it ranged from 0.13 to 0.15

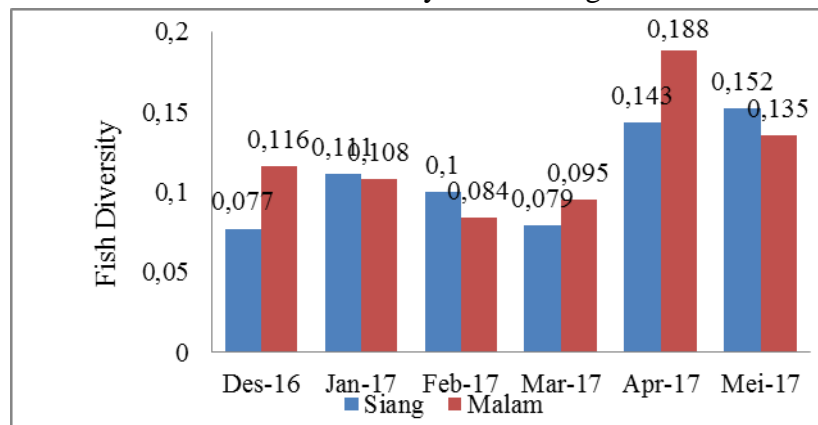


Figure 4. Diversity index of fish based on research time (December 2016-may 2017)

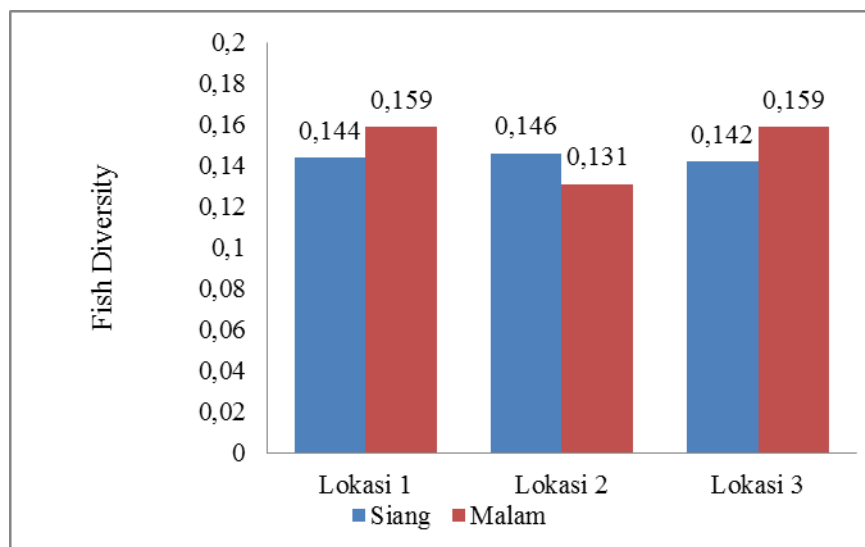


Figure 5. Diversity index of fish based on research location

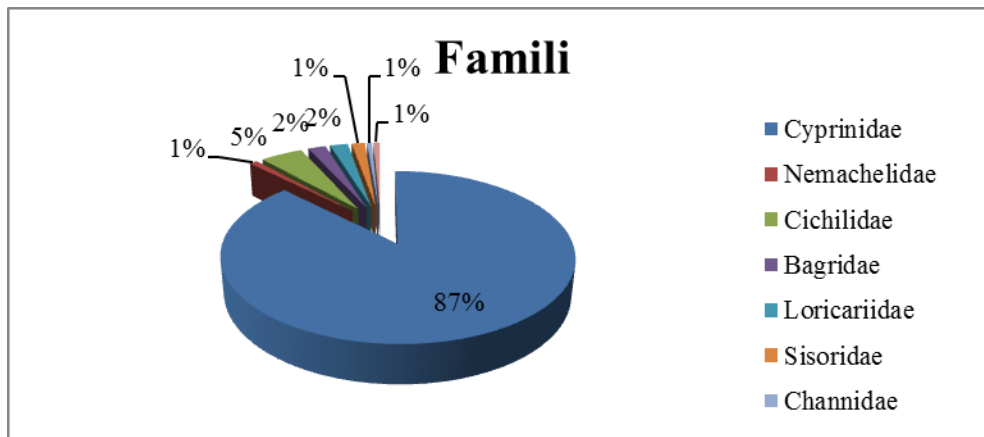


Figure 6. Percentage of family-level of fish that caught during the study at Pelus River Region of Banyumas District during the study (December 2016 - May 2017).

3.3 Age Structure Based on Total Weight and Length of Fish

Eighteen fishes which obtained, the total length of all fish types ranged from 2.9 to 85.5 cm and the average length is 82.6 cm, while the weight of all fish types ranged from 0.02 - 398.0 grams and the average weight is 397, 98 grams. The range of the smallest or lowest total length ranges from 0.0-13,76 cm and the largest or highest total length range is 68,85-85,62 cm, while the smallest or lowest weight range is around 0,0-66,33 grams and the largest or highest weight range that is around 331,69-1662,0 gram.

4.0 DISCUSSION

4.1 Quality of River Water

Flow velocity. In accordance with the nature characteristic of the river that is more getting upstream, then the flow is getting faster and if more getting downstream then the flow more slower (Odum 1971; Effendie 2002). During the study at three locations the flow velocity ranged from 0.40 to 1.67 m/s. Location three with an average velocity of 0.88 - 1.67 m/s including high and relatively fast flows (Setijanto and Sulisty, 2008).

The flow velocity of the river is influenced by river water discharge. Water discharge is influenced by rainfall, the higher rainfall then the water flow higher, that resulting in faster flow velocity and the lower the rainfall, then water flow slower so that the flow velocity is slower. In the rainy season the water discharge

will rise, so the higher of flow velocity, otherwise in the dry season the rain discharge will decrease so the flow velocity will decrease as well.

The flow velocity may be affected by the depth of a water and may also be affected by wind power given to the surface layer of water, so it can generate the flow surface which having a speed about two percent of the wind velocity itself. Waters that have a greater angular angle, basically the resulting flow will be faster and if the bottom of the water is more flat then the resulting flow will be slower. In general, the waters in the upper part of the river have a rapid flow velocity and progressively slowed to the downstream. Flows can also be slow in the stagnant waters (Odum, 1971, Welch, 2001).

Clarity. Clarity based on sampling location during research, that is December 2016-April 2017 is: at Location I clarity between 30-50 cm, at Location II clarity between 30-65 cm, and at Location III clarity between 25-65 cm. Based on the data, the highest clarity level is in Location II.

The clarity of the waters of the Pelus River during the study was included in the low category, as stated by Sumawidjaja (1975) that the good water clarity value for fish survival is greater than 45 cm. The low value of water clarity in this study is caused during the study of rainfall included in the high category. This condition causes the river water becomes turbid, so the average value of the water clarity becomes low, but keep in mind the low level of this water clarity is not fixed because the seasons changes and the river is a lotik waters.

The clarity level in a region is influenced by the presence or absence of shade and weather conditions (cloudy or not). If a region there is a lot of shade, the clarity becomes low otherwise if there is no shade then the area becomes brighter. If the weather is cloudy or the sky is cloud covered then the clarity will be low, otherwise if there is no cloud then the clarity becomes high. The higher of clarity then the penetration of sunlight in the water will be high too, so the productive water layer will become thick. The function of measuring the clarity of the water is to give a thin and thickness Figureure of the layer productive (eufotic) of waters observed, because sunlight is one of the main factors as determining the photosynthesis process. The higher water level the more sunlight that can penetrate into the water, which means the more sunlight energy is absorbed by the water mass in that waters. Sunlight helps phytoplankton in the photosynthesis process, thus role as a primary producer which capable of converting inorganic substances into organic substances. Water clarity is a reflection of penetrating power or the intensity of sunlight into the waters (Soedarsono & Suminto 1988).

Temperature. Water temperature ranges of Pelus River Banyumas regency has a preference towards the downstream, the temperature is getting higher, this is a natural condition because the temperature of waters will usually increase if the intensity of sunlight entering into the water in large quantities. The more downstream river has the bigger the size and the temperature is also increasing as the intensity of the light gets bigger (Djuhanda 1981; Odum 1996; Effendie 2002).

According to Akrimi and Subroto (2002) the temperature range 24°C-29°C for the tropics is still within reasonable limits and does not endanger the life of fish, whereas according to Anwar (2008) the water temperature for the tropics is not much varied and the best for aquatic organisms is in the range 25°C-32°C.

Water temperature is the intensity of the heat energy so that temperature becomes an important factor in regulating the process that occurs in the waters (Poole, 2001). Temperature of a waters is affected by the season, the duration of day and night time, air circulation, cloud cover, river flow and water depth. Temperature conditions in waters have an important role for the aquatic organisms life, an increasing temperatures causes the increasing metabolic rate and respiration of aquatic organisms and further increasing oxygen consumption. In general, the rate of growth increases with the rise of temperature to some extent that can depress the fish life even cause death (Effendi, 2000). Based on Government Regulation No.82 of 2001 (for class II and III waters), it is explained that the temperature range for freshwater aquaculture is a deviation of 3°C from a natural state (20-30 °C). Wardoyo (1981) states that a good water temperature tolerance to support optimal growth for fish is 20-30°C. Such circumstances shows that the waters of the Pelus River are still within the water quality standard threshold and has temperature range that support the life of aquatic organisms, especially fish.

Acidity (pH). Based on the data, it can be said that the waters of the Pelus River are neutral and are considered to be productive waters for aquaculture and plankton growth. According to Anwar (2008), aquatic organisms can live in a waters that have a neutral pH value with a tolerance range between weak acid to the weak base. The ideal pH value for life for aquatic organisms generally ranges 7. Naturally, the pH of the waters is influenced by the concentration of carbon dioxide and the acidic compounds.

The acidity of a water indicates the presence of hydrogen ion levels contained therein and can be used as a guide to indicate whether a waters or a fertility level of a waters. The degree of acidity can also reflect biological production and is a limiting factor in the life of aquatic organisms (Taylor & Sukarsono, 1995). The ideal pH value for the life of aquatic organisms is generally in the range of 6-9 (PP

No.82 of 2001). Conditions of waters that are very acidic or very alkaline will endanger the survival of aquatic organisms because it can cause metabolic and respiratory disorders (Barus, 2002). The results showed that the pH value in the Pelus River is still within the ideal tolerance range for fish life.

Dissolved oxygen. Oxygen is a limiting factor for aquatic environments and the most important aspect of fish life, especially used for respiration and as a regulator of metabolic processes (Welch, 2001). Loss of oxygen in the water caused by the respiration process of plants and animals and dismantling process of organic material in the bottom of water which is reducing (Sumawidjaja, 1975). Dissolved oxygen depends on the presence of photosynthesis plants, temperature, and the level of light penetration can be affected by water turbidity and the amount of organic matter DESCRIBED. Air pressure can also affect oxygen solubility in water because air pressure affects the speed of oxygen diffusion from air into water. The waters are polluted or not, and if polluted, how much pollution levels can be determined from the dissolved oxygen content of the waters, namely: the dissolved oxygen content more than 6,5 ppm means uncontaminated waters, while the dissolved oxygen content is between 4,5 to 6,5 ppm means lightly polluted waters, dissolved oxygen content between 2.0 - 4.5 ppm means medium tempered waters, and dissolved oxygen content of less than 2.0 ppm means heavily polluted waters (Lee et al., 1978). Water quality standards according to Government Regulation No.82 of 2001 (class II and III waters) explain that good dissolved oxygen for fish life is range from 4-6 ppm. Based on these two references, the condition of Pelus River waters can be declared good and proper for organism life, especially fish.

4.2 Plankton

Biological parameters of river water quality can be measured by knowing the variation of plankton species that found in that river water. Plankton is a floated organism whose the movements are approximately depends on flows. Although some zooplankton showed activated swimming movements which help maintain a vertical position, the plankton can not move against the flow (Odum, 1996).

In a study of three locations found various types of plankton both phytoplankton and zooplankton. That three locations has a various types of plankton, in Location I, location II and location III has many kinds of plankton from various classes. From the research results in three locations of zooplankton that found in the waters of Pelus River is zooplankton from Class Infosoria, Oligohymenophorea, Calanoida, Arcellenida, Proteomyxa, and Hymnostimatida. Apsilus, Holotricida, Lamiales dan

fitoplankton dari Kelas Chlorophyceae, Bacilliarophyceae, Penales, Euglenida, Tetrasporales, Eunotiales, Batrachospermales, Euglenales.

4.3 Fish Diversity

The research results of Hadisusanto et al. (2000), *Rasbora lateristriata* and *Barbonymus gonionotus* species are members of Cyprinidae Family and they are two predominant species among 15 fish species which found in the Upper Serayu River Region of Wonosobo District, Central Java. Muthmainnah (2010) in her research on the variation of fish species along the Musi River flows explains that fish species which Cyprinidae Family member are the most common.

Djuhanda (1981) and Kottelat et al. (1993) explain the fish species which Cyprinidae Family member are well known and one of the family with largest amount in fresh waters. The same statement was also stated by Hamidah (2004) who studied about the diversity of fish species in Enim River of Muara Enim District, Province South Sumatra, she has been succeeded get 14 fish species from Cyprinidae Family. Yustina (2001) states that most fish species along the waters of the Rangau River, Riau (17 species) include from Cyprinidae Family. Species variety of Cyprinidae Family is the most numerous and has a wide distribution and has an important role in supporting human life (Triyatmo 2001, Haryono 2004). The most fish species in Serayu River and Logawa River are included in the Cyprinidae Family (Setijanto & Nasution, 2005; Lestari & Sugiharto, 2007; Sulistiyarto et al. 2007).

This condition is in accordance with the explanation of population which living in the Pelus river area near the research location. They explained that the most common fish that found in the Pelus River are Melem (*Osteochilus vitatus*), Tawes (*Barbonymus gonionotus*), Carp (*Barbonymus amatus*), Brek (*Barbonymus balleroides*) and Lunjar Andong (*Rasbora lateristriata*). That species is a fish species which commonly called by residents with fish Putih. Five species of fish Putih is the type of Cyprinidae family.

4.4 Age structure based on total weight and length of fish

An analysis of the age structure based on the total weight and length of fish is done to determine the population condition, ie the existence of young and adult fishes. Fishes that have a total weight and length size in small or low range indicated young fish, while the total weight and length with a large or high ranges indicated adult fish. Most of fish in the long range in the smallest or lowest ranges is from 0.0-13.76 cm, while in the weight range in the smallest or lowest ranges is from 0.0-66.33 grams. This shows that fish with a total length and weight in the small or low range indicates young fish, whereas in fish with total length and weight in the large or high range

indicates adult or old fish. The results showed all of fish species which obtained during the study inclined to be in the age range that indicates young fish. This is in accordance with the opinion of Subardja et al., (1989) which states to fish some ways of determining age has been studied that young fish tend to be in a large population, while older ones will be less.

Amir et al. (2009) stated that excessive fishing activities has a negative impact on biological resources and the environment, but until now there is still very limited research that reveals the problem. Sulistyono & Setijanto (2002) in research about ecology and reproduction aspects of Senggaringan fish (*M. nigriceps*) in Serayu River most of the samples obtained are young individuals. Populations that have so many young individuals while the small amount of adult individuals indicate the population is in poor condition (Odum, 1971). Thus it can be said the condition of fish in the Pelus River Region of Banyumas regency needs to get attention and protection in order to maintain its sustainability. Very important to has ability to understand that the river is a fish habitat, so in exploiting the river should be cultivated to maintain its sustainability and not adversely affect the river biological resources, especially fish (Pander & Geist, 2010).

5.0 CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions

Based on the results and discussion, it can be concluded:

- 5.1.1 Water quality that includes physical and chemical parameters of waters, namely: temperature, floq velocity, water clarity, dissolved oxygen content and pH and variation of plankton species in Pelus River Banyumas regency in a good condition and suitable for fish life.
- 5.1.2 Species diversity is considered low due to over fishing.
- 5.1.3 Age structure shows the condition of fish in Pelus River of Banyumas regency is in a vulnerable condition, so it needs attention in order to conserve fish species.

5.2 Suggestions

Some of the things that can be suggested related to research on fish communities in Pelus River Region of Banyumas Regency as a continuation of the research activities are:

- 5.2.1 Fish that live in the river based on the vertical spatial aspect there are pelagic and demersal, while based on temporal aspects there are nocturnal and diurnal.

Therefore it is necessary to do research by using fishing gear that is more varied, for example using nets stocking, fish net, gill net, *tedong* and *wuwu (bubu)*. The research is also longer based on the more complete temporal aspects, namely: rainy season and dry season, lunar phase and dark moon and day and night. This is in order to obtain more accurate and comprehensive information about the fish communities in the river.

5.2.2 Exploitation or fishing in Pelus River Region of Banyumas Regency which excessively and continuously is causing a reduction in the abundance and diversity of fish species that degrade the quality of fish communities.

Therefore, fishing in Pelus River Region of Banyumas Regency should consider conservation factor, such as selectively fishing on the fish size, type of fishing gear, and fishing time

5.2.3 Conduct an integrated partnership between the related parties in the management of Pelus River, namely the Regional Government, Water Management Agency, Universities and communities in the utilization and management of water resources and fisheries resources in Pelus River sustainable.

5.2.4 Local Government: Regency, Subdistrict, or Village government whose the territory is passed by the flow of River Pelus need to issue a regulations about fishing, such as:

5.2.4.1 The size of fish that can be caught, i.e. the long range and weight of adult fish according to the species.

5.2.4.2 Time of arrest, ie prohibition of fishing in the breeding season that occurs in *mangsa kapapat* (late dry season early rainy season).

5.2.4.3 Fishing equipments that can be used, ie fishing gear that is selective, for example, nets with a mesh size at least three centimeters and nets with a mesh size at least one centimeter and prohibit the usage of mass fishing tools, such as using poison, explosives and stun.

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Chapter 18: Tonic Effect of The Ethanol Extract of *Drymis* sp. Stem Bark from Papua of Mice (*Mus musculus*)

Rani Dewi Pratiwi, Paula Nancy Lefaan, Elsy Gunawan, Eva Susanty Simaremare, Rusnaeni

Drymis sp. stem bark from Papua widely utilized by local people especially in Sougb Tribe from Sururey Village Manokwari Papua, one of them is used to increase the stamina of the body. The aim of this study was to investigate the tonic effect of *Drymis* sp. stem bark ethanol extract of mice. Ratatory exhaustion method was used to the tonic effect. Selected mice (25) were divided into 5 groups, each consisting of 5 mice. Tested extract was administrated orally one dose to the mice. Group I was given caffeine 15 mg/kg body weight (as positive control), group II, III and IV was given the ethanol extract of *Drymis* sp. stem bark 10mg/kg body weight, 30mg/kg body weight and 50mg/kg body weight consecutively and group V was given CMC-Na 0,5% (as negative control). The total swimming period until exhaustion was measured and use as index of swimming capacity. Research result show that the low dose of the tested extract the longer swimming time and with better stamina. Swimming time of mice consuming the ethanol extract dose 10mg/kg body weight, 30mg/kg body weight and 50mg/kg body weight are 4 minute 43 seconds, 3 minutes 32 seconds and 2 minutes 70 seconds. CMC-Na 0,5% b/v is -35 seconds and caffeine 15 mg/kg body weight is 10 minutes 20 seconds. Data obtained analyzed statistically use one way ANOVA method. Result from this study suggest that the ethanol extract of *Drymis* sp. stem bark has a tonic effect on test animals.

Keywords: *Drymis* sp., Papua, Tonic Effect, Mice

1.0 INTRODUCTION

Akway plants are plants located in primary and secondary tropical forests, Akway is a kind of woody plants, flowering, spruce and included in the families winteraceae. These plants

generally have leaves and aromatic barks (Watson & Dallwitz, 1992). In Indonesia, this plant only grows in Papua, especially in the hilly areas of Manokwari in Arfak mountain. Species that exist in the mountainous areas arfak there are three types namely *D. Beccariana*. Gilb, *D. Pipertia* Hook.f dan *D. Arfakensis* (Parubak, 2007).

Several studies of phytochemical compounds akway have been reported. The ethanol extract contains alkaloids, saponins, triterpenoids, flavonoids and tannins (Cepeda, 2008), while the methanol and ethyl acetate extracts contain alkaloids, saponins, terpenoids, flavonoids, tannins and glycosides (Cepeda et al, 2010). Based on the results of the Cepeda, et al (2011) research, the essential oil of the barks of akway consists 41 compound. The compounds composed barks of akway essential oil of terpen and its derivate of 80,49% and alifatic coumpons of 4,88%. Based on the results of the Cepeda, et al (2016), the ethylacetate extract of akway concentration of 0.5 MIC (0.25%) inhibited bacterial growth in beef broth up to 20 days during room temperature storage while in refrigerator no growth identified up to 48 days. On the other hand, untreated beef broth stored in room temperature showed bacterial growth of 4.56 log cfu/ml in 12 hours whereas in refrigerator bacterial growth identified was 2.17 cfu/ml for 24 days storage.

Akway plants are widely used by local people, especially the Sougb tribe from Surey village, Manokwari, one of them is used to increase the vitality of the body. Part of akway plants used by the community are bark and leaves. The use of the bark of akway as an increase of vitality or stamina by the local community is to boil the bark of akway, there are also local people who directly use with chewed. People in the Sound tribe, Surrey village, Manokwari, have long used the bark of akway as an increased stamina (tonic). Before doing physical work, people will usually consume the bark of akway (Figure 1). Tonic is a substance or mixture of substances that can strengthen the body or increase energy in the body. Tonics can stretch or strengthen the physiology of the body (Gunawan, 2013). The aim of this study was to investigate the tonic effect of *Drymis* sp. stem bark ethanol extract of mice.



Figure 1. *Drymis* sp. stem bark

2.0 MATERIALS AND METHODS

2.1 Equipment

The tools used in this research were electrical balance (Adam), the animal scales, glass aquarium, syringe for oral feeding, flask 10 ml, stopwatch, hairdryer, animal box, syringe 1 ml, funnel, pipette, parchment, spatula, thermometer, air pump and ruler.

2.2 Materials

Materials used in this study were drymis sp. stem bark ethanol extract, caffeine (a solution containing 50 mg caffeine in 20 ml distilled water was prepared), CMC Na (a solution containing 100 mg CMC Na in 20 ml distilled water was prepared. and distilled water).

2.3 Extraction of the plant material

Drymis sp. stem bark was purchased from the Sougb Tribe, Sururey Village, Manokwari West Papua, Indonesia. The powdered material (250 g) was mixed with Ethanol 96% (2.25 l) and left for 72 h. The mixed was stirred at 24 h intervals using a sterile glass rod. At the end, extract was filtered. The filtrates were concentrated in a hot plate, giving a yield of 17.26%.

2.4 Acclimatization of Experimental Animals

The experimental animals were housed in standard cages with the same condition, diet and under controlled condition. Acclimatization of the experimental animals was conducted for seven days in order to be accustomed with the experimental condition. Good adaption of mice was characterized by constant change in body weight.

2.5 Tonic Effect of Treatments on Swim Capacity of Mice

Before treatments, mice were fasting for 12 hours. Experimental animals were divided into 5 group, each consisted of 5 mice. Treatment was done by feeding mice only once (acute consumption). Test animals were given drymis sp. stem bark ethanol extract with acute oral dose (Figure 2). Group I was given caffeine 15 mg/kg body weight (as positive control), group II, III and IV was given Drymis sp. stem bark ethanol extract 10mg/kg body weight, 30mg/kg body weight and 50mg/kg body weight consecutively and group V was given CMC-Na 0,5% (as negative control). After feeding, mice were allowed to break for 30 minutes and then the mice were placed in to empty aquarium with air pump, then water was poured into the

aquarium. The mice were subjected to swim in the aquarium to see the tonic effect of each treatment on the swimming endurance capacity by measuring the time spent by mice to swim (Figure 3). The total swimming period until exhaustion was measured and used as index of swimming capacity (Turner, 1965).



Figure 2. Treatment Administrated Oraly to The Mice



Figure 3. Tested Swimming Endurance to The Mice

3.0 RESULT

Test animal were orally given the ethanol extract of *Drymis* sp. stem bark at the different doses, caffeine and CMC Na then mice allowed to break for 30 minutes and then tested swimming endurance to see the effect of each treatment and comparing the results between the treatment groups. Swimming time before and after treatment present in Figure 4.

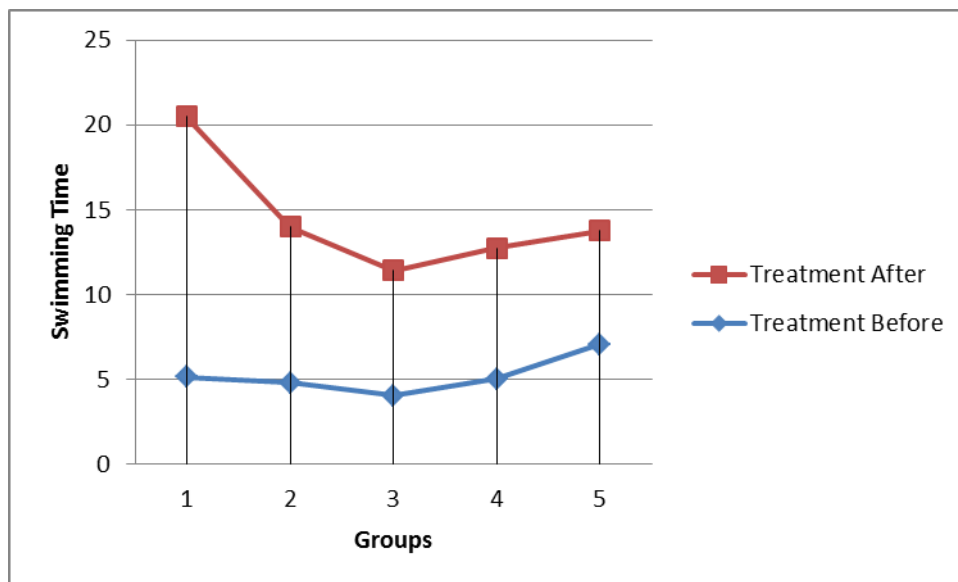


Figure 4. Swimming Time Before and After Treatment

Results of swimming endurance of mice after treatment present in Table 1 and Fig. 5.

Table 1 The Tonic Effect Treatments on Swimming Capacity Endurance of Mice

Groups	Swim capacity (minutes, seconds) (n=5)	
	Mean	SD
1	10,20	4,26
2	4,43	2,25
3	3,32	1,04
4	2,70	0,22
5	-0,35	1,63

Note :

1. Caffein 15 mg/kg body weight (as positive control)
2. The ethanol extract of Drymis sp. stem bark 10mg/kg body weight
3. The ethanol extract of Drymis sp. stem bark 30mg/kg body weight
4. The ethanol extract of Drymis sp. stem bark 50mg/kg
5. CMC-Na 0,5% (as negative control)

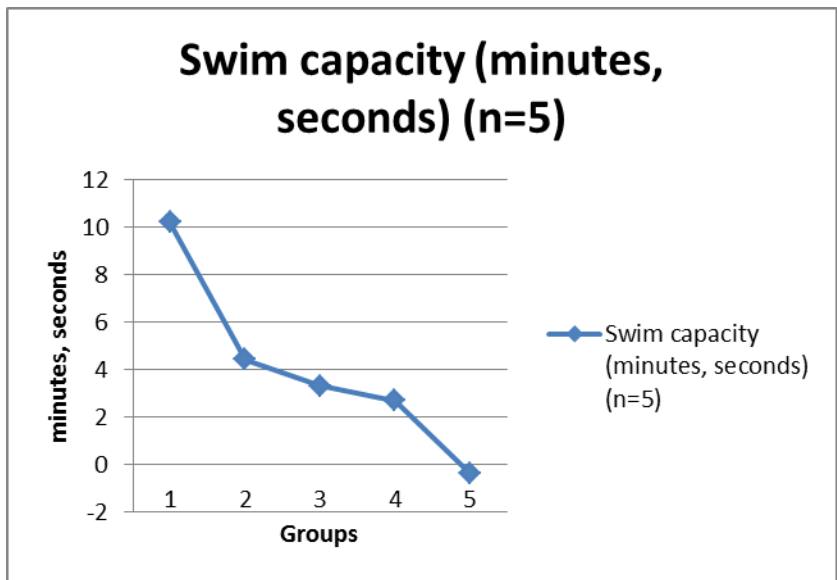


Figure 5. The Tonic Effect Treatments on Swimming Capacity Endurance of Mice

Data obtained analyzed statistically use One Way ANOVA method. One Way ANOVA test of swimming endurance of mice after treatment present in Table 2 and followed by Duncan test in Table 3.

Table 2 One Way ANOVA Test of Swimming Endurance of Mice after Treatment

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	298,567	4	74,642	10,665	,000
Within Groups	139,975	20	6,999		
Total	438,541	24			

Table 3. Duncan Test

Perlakuan	N	Subset for alpha = .05			
		1	2	3	1
Duncan(a) Negative Control (CMC-Na 15% b/v)	5	-,3480			
The ethanol extract of Drymis sp. stem bark 50mg/KgBB	5	2,7000	2,7000		
The ethanol extract of Drymis sp. stem bark 30mg/KgBB	5			3,3180	
The ethanol extract of Drymis sp. stem bark 10mg/KgBB	5			4,4260	
Positive Control (Caffein 13mg/KgBB)	5				10,2040
Sig.		,083	,341		1,000

Means for groups in homogeneous subsets are displayed.
 a Uses Harmonic Mean Sample Size = 5,000.

4.0 DISCUSSION

Based on data in Table 1, it is shown that the ethanol extract of *Drymis* sp. stem bark increases swim capacity and endurance of tested mice. The lower the dose of the ethanol extract, the greater the swim capacity of the mice. It shows that the low dose of the ethanol extract has a significantly higher effect than stamina enhancement by the higher dose of the ethanol extract. All treatments have a greater swimming endurance compared with a negative control (CMC Na) that is -0.35 seconds. At the dose of 10 mg/kg body weight ethanol extract *Drymis* sp. stem bark has the endurance to swimming around 4 minutes 43 seconds and at the dose of 50 mg/kg body weight has a swimming endurance of 2 minutes 70 seconds. From the investigation carried out it shows that a low dose of 10 mg/kg body weight of the ethanol extract would increase the stamina. The values between groups were compared with the negative control group (CMC Na) and are statistically evaluated by One Way ANOVA test.

One Way ANOVA test results showed that there was a significant difference between treatment groups ($P=0,00$). The result of One Way ANOVA test showed that there was a significant difference between treatment groups, followed by Duncan test. Duncan results obtained for positive control (caffeine), the ethanol extract and negative control (CMC Na) showed that there was a significant difference. This is because the positive controls (caffeine) used in this study are pure compounds, whereas the ethanol extract used is a mixture of various active compounds. Caffeine elevated the plasma catecholamine concentration that stimulated fat metabolism, either by the increase of adipose tissue and/or muscle triacylglyceride lipolysis and consequently FFA oxidation (Costil et al. 1978).

Several studies of phytochemical compounds likewise have been reported. The ethanol extract contains alkaloids, saponins, triterpenoids, flavonoids and tannins (Cepeda, 2008). Fa-Rong Yu et al (2010) showed the effects of a flavonoid extract from *Cynomorium songaricum* (rutin, catechin and isoquercitrin) on the swimming endurance of rats, enhancing endurance exercise performance by reducing muscle fatigue. Paisei (2009) showed species of *Drymis* found on 1200 m from sea level (*Drymis winterii*, Forst, *Drymis piperita*, Hook and *Drymis beccariana* Gibbs) which contain stigmasterol, sitosterol and phenanthren 9,10-dimethyl function in improving testosterone in various concentrations. Triterpenoid rich extract from *Antrodia camphorata* with dose dependently increased swim time, blood glucose, muscular and hepatic glycogen levels and dose dependently decreased plasma lactate and ammonia levels and creatine kinase activity (Chi et al. 2012). Based on the results of the Deng et al (2013) research, Na^+/K^+ -ATPase, $\text{Ca}^{2+}/\text{Mg}^+$ -ATPase and total ATPase in quadriceps of swimming exhaustive rats could be increased by administration of *S. grosvenori* leaves flavonoid. The study results of Kang et al (2014), showed that rutin, a flavonoid and principal component of *Saussurea involucreata* treatment ameliorates the various impairments associated with physical fatigue.

5.0 CONCLUSIONS

The results showed that the ethanol extract of *Drymis* sp. stem bark increased swimming capacity of tested animals, but the effect of the low dose of the ethanol extract of *Drymis* sp. stem bark (10 mg/kg body weight) the significantly higher effect than stamina enhancement by the higher the dose of the ethanol extract of *Drymis* sp. stem bark (50 mg/kg body weight). Result from this study suggest that the ethanol extract of *Drymis* sp. stem bark has a tonic effect on test animals.

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Chapter 19: Formulation and Characterization of Sunscreen Lotion from Corn Cob (*Zea mays* L.) Extract

Asmiyenti Djaliasrin Djalil, Tisna Buditya Chandra

Corn cob is the important type of agriculture residue. It contains phenolic compounds, protein, carbohydrates. We prepared and evaluated sunscreen lotion containing corn cob extract. Corn cob was extracted with reflux method using ethanol 80% for 8 hours. Several lotion containing 5% (F1), 7.5% (F2), and 10% (F3) extract was designed. These lotions were subjected to physical studies such as pH, viscosity, spreadability, adhesivity, organoleptic, and stability. The sun protection factors (SPF) were analyzed by ultraviolet (UV) spectrophotometry using samples irradiated with UV in B region. The results showed that the extract and formulations have minimum sunscreen protection. The extract showed SPF value was 4.95 ± 0.86 . The adding of corn cob extract in the lotion resulted in increasing SPF value of formulation. SPF values of F1, F2, and F3 were 1.20 ± 0.06 ; 2.17 ± 0.31 ; and 3.01 ± 0.13 , respectively. The formulation of sunscreen lotion containing corn cob extract meets the requirements of physical properties. The formulation containing 10% extract (F3) has the most effective sunscreen lotion. It showed the dark brown lotion with pH 7 ± 0 , viscosity 5244 ± 20 cp, spreadability 5.06 ± 0.02 cm, and adhesivity 1.0 ± 0.04 s.

Keywords: *Zea mays* L., sunscreen lotion, sun protection factor

1.0 INTRODUCTION

A moderate sunlight exposure is well known to have some beneficial effects on the skin health. However, excessive exposure is also responsible for a destructive effect on the skin such as sunburn, skin cancer, aging, erythema, etc (Polefka et al., 2012). Sunlight radiation covers the ultraviolet (UV) to the infrared spectrum. The UV radiation from the UVA bands (320-400 nm) to the UVB (290-320 nm) is harmful to human skin. The carcinogenicity of UVB radiation is

well understood as a process of direct DNA photodamage. Instead, UVA radiation appears to act in indirect DNA photodamage.

Fortunately, the human skin has natural protection against sunlight radiation via the formation of melanin. The photoprotective role of melanin, especially eumelanin, is achieved by its ability to scatter UVR and reduces penetration of UV into dermal layers (Brenner and Hearing, 2008). However, the degree of melanin protection depends on the skin photo-type and age (Gonzales-Arjona et al., 2015).

The popular way to avoid the sunlight radiation's adverse effect was using sunscreen. Sunscreen is used to aid the body's natural defense to protect against UV-induced sunburns and its chemopreventive activity. Based on its ability to absorb, reflect or scatter the sun's rays, sunscreen protects the treated area from sunburn (Mishra et al., 2011). Sun Protection Factor (SPF) reflects sunscreen ability to prevent sunburn. Sunscreen is available in many forms like lotion, cream, gel, stick, spray, and lip balm. Lotions and creams were the most widely available and often used.

Now, the concept of alternative or complementary medicine appears to be increasing. The usage of herbal has been increased in product cosmetics. The researchers have claimed that herbal sunscreen cosmetics are more suitable for hyperallergic skin because they are less irritant and more easily adjustable to the skin. The role of herbal products and certain phytochemicals in the control of aging has been shown (Kapoor et al., 2009).

Several natural sunscreens, including aloe vera, tomato, pomegranate, green tea, cucumber, grapes, almond, saffron, have been reported to have UV filters. A few herbal oils including olive, coconut, castor, almond, mustard, chaulmoogra, sesame, peppermint, tulsi, lemongrass, lavender, orange, eucalyptus provides vital protection against harmful UV rays (Kaur and Saraf, 2010).

Corn cob is agriculture waste during corn grain harvest. It contains approximately 42.1% hemicellulose, 39.1% cellulose, 9.1% lignin, 1.7% protein, and 1.2% ash (Barl et al, 1991). Several lignans were identified as 7,7'-dihydroxy-3'-O-demethyl-4-methoxymatairesinol, β -sitosterol, β -sitosteryl- β -D-glucoside, 6 β -hydroxycampesterol-4-en-3-one, 5 α ,8 α -epidioxyergosta-6,22-dien-3 β -ol, tricetin, kaempferol and p-coumaric acid (Ashour et al., 2013). Previous studies suggested that corn cob extract exhibit antioxidant property (Dong et al., 2014; Wungkana et al, 2013; Fidrianny et al., 2016; Melo-Silveira et al., 2014; Sultana et al., 2007). The presence of phenolics including gallic acid, chlorogenic acid, caffeic acid, ferulic acid, rutin, resveratrol, and kaempferol played important roles for strong antioxidant activities of corn cob (Dong et al., 2014). Furthermore, Lumempouw et al (2012) and Wungkana et al (2013) showed phenolic compounds in corn cob can act as a sunscreen. According to Dzialo's research, plant phenolics are promising metabolites in eliminating the causes and effects of skin disorders (Dzialo et al., 2016). There is a good correlation between SPF and antioxidant activity (Ebrahimzadeh et al., 2014).

Moreover, most people in rural areas cannot afford the expensive cosmetic products, they tend to use the natural resource for sun protection and beautification. Herbal products are cheaper than chemical based sunscreen, therefore an attempt has been made in the present study to prepare lotion sunscreen using corn cob. Present work reports the extraction, characterization, and formulation of sunscreen lotion of corn cob.

2.0 MATERIALS AND METHODS

2.1 Materials

The corn cob was collected in Purbalingga, Central Java, Indonesia and authenticated by taxonomist at the Faculty of Biology, Universitas Jenderal Soedirman, Indonesia. Ethanol, stearic acid, triethanolamine (TEA), and disodium edetate were purchased from Merck (Germany). Propylene glycol, methylparaben, propylparaben, cera alba, lanolin, and distilled water were from Brataco Chemica (Indonesia).

2.2 Preparation of Extracts

Corn cob was dried at room temperature for 1 week and made into a fine powder of 40 mesh size using the laboratory mill. Extraction of 750 g of powdered sample was performed by reflux using ethanol (80%) for 8 h at 78-90 °C. The extract was then separated from the sample residues by filtration through Whatman No. 1 filter paper. The resulting extract was concentrated over a rotary evaporator and concentrated extracts were dried to obtain actual yields. The extract was transferred into a dark glass bottle, and then stored at 4 °C.

2.3 Lotion Formulation

The ingredients used in the formulation of lotion are given in Table 1. The lotion was prepared by adding ingredients A to the ingredients B with fast stirring to avoid separation of water and oil phase. Ingredients A were first melted together and slowly added to the preheated mixture (70-82 °C) of ingredients B. Finally, the volume was made up to 100 mL by adding distilled water. In the experiment, the commercial sunscreen Marina was employed as a positive control. An extract free lotion was also prepared as a negative control.

Table 1. Content of the Formulations (% , w/v)

Ingredients	Formula			
	I	II	III	K(-)
Ingredients A				
Corn cob extract (g)	3	4.5	6	-
Lanolin (g)	3.0	3.0	3.0	3.0
Cera alba (g)	2.50	2.50	2.50	2.50
Stearic acid (g)	4	4	4	4
Propylparaben (g)	0.050	0.050	0.050	0.050
Ingredients B				
Methylparaben (g)	0.10	0.10	0.10	0.10
Disodium edetat (g)	0.050	0.050	0.050	0.050
Propylene glycol (g)	5.0	5.0	5.0	5.0
Triethanolamine (g)	1.0	1.0	1.0	1.0
Distilled water (ml)	60	60	60	60

2.4 Organoleptic Characteristics

All formulations were tested for physical appearance including color, texture, and odor. These characteristics were evaluated by visual observation for 30 days, and characteristics assessed on the 1st, 2nd, 3rd, and 4th weeks.

2.5 pH Values

Lotion pH was measured with pH indicator stick. One gram of formulation was dispersed in 25 mL deionized water. Measurements were made in triplicate.

2.6 Viscosity Measurement

Viscosity was evaluated in Brookfield viscometer using an LV-2 spindle. The rotation rate was adjusted to 60 RPM. Viscosity was observed for 30 days and assessed on the 1st, 2nd, 3rd, and 4th weeks. All measurements were made in triplicate.

2.7 Spreadability

Spreadability of the lotion was determined by measuring the spreading diameter of 0.5 g sample between two circle glass plates (diameter 15 cm) after one minute. The standard weight applied to the upper plate was 50 g. The increase in the diameter due to lotion spreading was noted. Each formulation was tested three times.

2.8 Adhesivity

One gram of formulation was placed between two glass plates. The load (1 kg) was applied to the upper plate for 5 minutes. Further, the load was removed. Afterward, the plate was given a load release 80 g. The timing of the release of both plates was noted. Each formulation was tested three times.

2.9 Preliminary Study of Stability

The formulated lotion was stored at different temperatures of 27 °C (at room temperature) and 4 °C for a period of one month and studied for color, odor, and creaming.

2.10 Determination of SPF value

Efficacy of sunscreen lotion was measured by an in-vitro method using UV Visible spectrophotometer. 1.0 % solution (w/v) of corn cob extract, formulated sunscreen lotions, and commercial sunscreen lotions were prepared. 1.0 g of all samples were weighed, transferred to a 100 mL volumetric flask, and diluted to volume with ethanol. Further, it was kept for ultrasonication for 5 min and then filtered through a cotton filter, discarded the ten first mL. Afterward, A 5.0 mL aliquot was transferred to 50 mL volumetric flask and the volume was adjusted with ethanol. Then a 5.0 mL aliquot was transferred to a 25 mL volumetric flask and the volume completed with ethanol (Dutra et al., 2004). The absorption of samples in solution was measured in the range of 290 to 320 nm, every 5 nm, and the same was performed in triplicate for each sample, followed by the Mansur equation to calculate the SPF (Mansur et al., 1986).

$$SPF = CF \times \sum_{290}^{320} EE(\lambda) \times I(\lambda) \times Abs(\lambda)$$

Where, CF (correction factor) = 10, EE = erythema effect spectrum, I (λ) = intensity of solar light of wavelength λ, Abs (λ) = spectrophotometric absorbance values at wavelength λ. The value of EE x I are constant and predetermined by Sayre et al. (2003).

2.11 Statistical Analysis

Data obtained was expressed as mean ± SD (standard deviation). The analysis of variance (ANOVA) test was used to assess if there were any difference in the data obtained. P-values less than 0.05 were considered statistically significant.

3.0 RESULTS

Ethanol has been widely used to extract compounds from plant sources. The extraction yields of corn cob by ethanol 80% is 11.4%. The extracts showed brown color, typical corn odor, and sweetish taste.

Three different lotions were formulated using different corn cob concentrations. The organoleptic properties, including texture, color, and odor of lotion formulations, are displayed in Table 2. Results showed that the lotion had smooth texture, a color from light to dark brown and characteristic odor of corn. The lotion indicated a homogeneous composition and no visible coarse grains. This was confirmed by visual examination and by touch. The lotions were easy to remove after application by washing with water. The formulations were able to produce uniform distribution of extracts in the lotion (Figure 1).

Tabel 2. Physical Characteristics of the Formulations

Formula	Texture	Color	Odor
I	Semisolid	Light brown	Characteristic of corn
II	Semisolid	Brown	Characteristic of corn
III	Semisolid	Dark brown	Characteristic of corn

All the fabricated lotions were then evaluated for their pH, viscosity, spreadability, and adhesivity. The results were tabulated in Table 3.

Tabel 3. Evaluation of Prepared Lotions

Evaluation Parameters	F1	F2	F3
pH	7±0	7±0	7±0
Viscosity (cps)	2756±15	6948±23	5244±20
Spreadability (cm)	7.55±0.04	5.51±0.02	5.06±0.02
Adhesivity (s)	0.36±0.01	0.74±0.04	1.00±0.04

The preliminary study of stability was observed under room temperature and cold conditions after the first month of storage. Results of the physical stability of lotion formulations are presented in Table 4. We only observed changes in the color and odor at cold temperatures. The color and odor of the formulation were considered stable under cold conditions. There is no creaming occurs on storage. However, the result showed that F1 requires more attention and protection from temperature changes and environmental stresses (Table 4).

Tabel 4. Evaluation of Prepared Lotions Stored at Room Temperature for One Month

Evaluation Parameters	F1	F2	F3
pH	8±0	7±0	7±0
Viscosity (cp)	3656±13	8396±25	6624±15
Color	No change	No change	No change
Creaming	No	No	No
Odor	No change	No change	No change

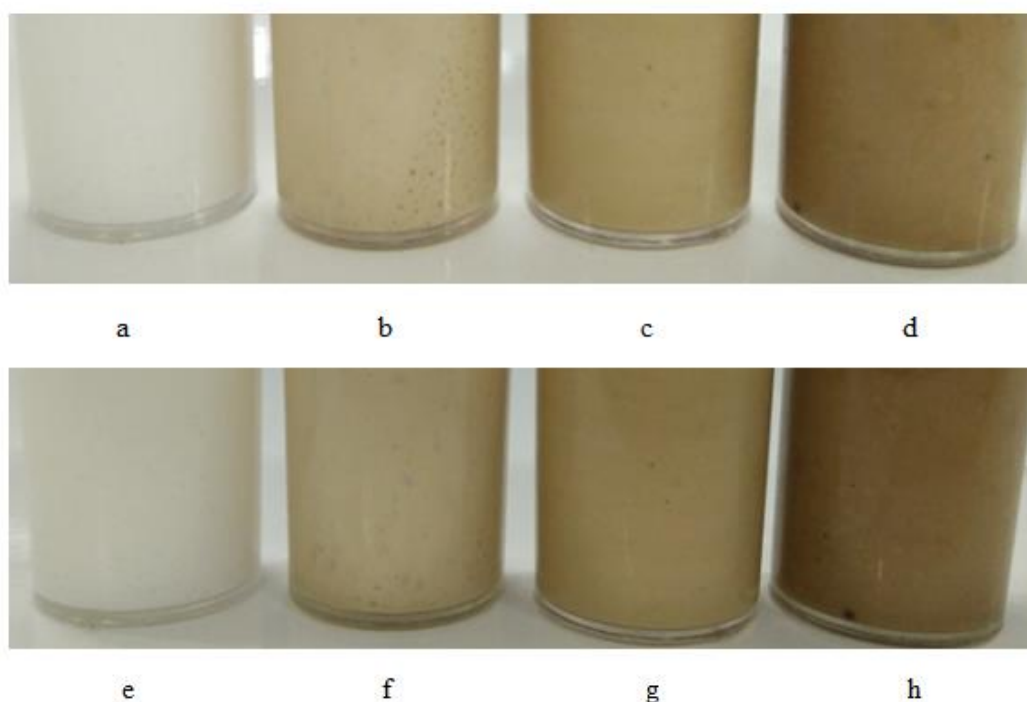


Figure 1. Formulated lotions: negative control (a), F1 (b), F3 (c), and F4 (d). After one month of storage: negative control (e), F1 (f), F3 (g), and F4 (h).

The extract of corn cob was tested in vitro at 1.0 % solution (w/v), and the SPF value obtained was 4.95 ± 0.86 . The absorbance values at various wavelengths (λ_{max}) from 290 to 320 nm of extract are given in Figure 2. Furthermore, the lotion formulations with corn cob extracts were found to possess SPF in the range of 1.20 to 3.01. The results showed that the formulation F3 has better SPF value than other formulations (Table 5).

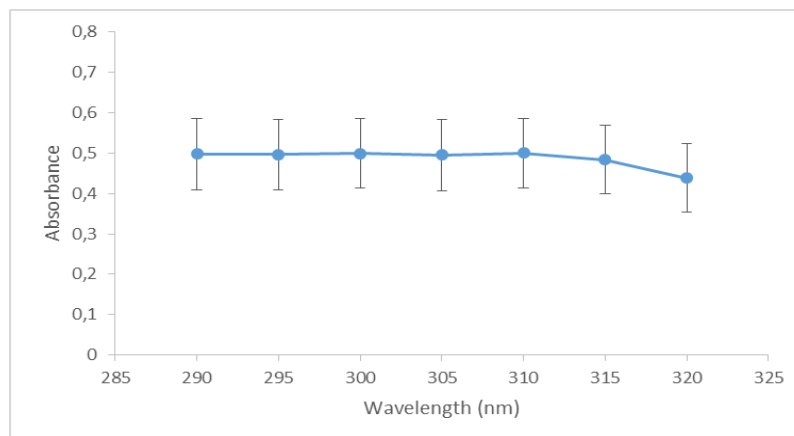


Figure 2. Absorbance Values of the Formulated Sunscreens

Tabel 5. SPF of the Extract and Formulated Lotion Sunscreen

Sunscreen	SPF
Extract	4.95±0.86
F1	1.20±0.07
F2	2.17±0.31
F3	3.01±0.13
Negative control	0.47±0.14
Positive control	7.32±0.18

4.0 DISCUSSION

People concerned with the environmental pollution are willing to spend more on environmentally friendly products, supporting the fast growth of the market for organic cosmetics. Plants are important sources of potentially useful constituents for the development of new therapeutic agents because most of them are safe with little side effects. Extraction of corn cob was conducted by reflux using ethanol as extraction solvent. Ethanol is permitted as solvents in the cosmetic and food industries. The reflux method is less time and solvent-consuming than maceration. Sharif and Bennett (2016) demonstrated that reflux extracts showed a better correlation between total phenolic content and antioxidant activity than the maceration extracts.

Corn cob extract gave a brown color to the formulations. The physical properties of formulations were assessed in accordance with the requirements of Standar Nasional Indonesia (SNI) for sunscreen No. 16-4399-1996.

A lotion is semisolid dosage forms proposed mainly for external use and usually consist of two immiscible phases, an oily internal phase, and an aqueous external phase. Because of emulsified nature of skin surface, extract formulated as lotion more effectively interact with skin

and more readily penetrate through biological membranes. Some of the plant extracts with sun protection activity have been previously formulated as topical lotions.

The lotions have the same texture and odor but slightly different in color. The color of lotions formulated was reported to vary from light brown to dark brown as extract concentration was increased from the lowest to the highest level. It was observed that the formulation previously stored in the room and cold temperature, after being kept for about one month remain stable in color and odor (Figure 1). This was good sign for lotion and it was acceptable.

The pH of formulations was 7 that fulfills with that of skin's normal pH value. All the formulations were shown pH nearer to skin required. Lotion that is too alkaline can cause skin to be sensitive and dry, even leading to skin conditions like eczema. Furthermore, lotion that is too acidic tends to irritate the skin. In general, the pH values of the formulations did not change significantly over the period of 4 weeks, except for the F1. During one month of room temperature storage, the pH of F1 increased slightly. Various amounts of lotion ingredients, as well as concentration of extract, could affect the pH of formulations. The increase in concentration of stearic acid causes the decrease of the pH of the formulation (Gyawali et al., 2016).

The viscosity of the formulated lotions is given in Table 3. The viscosity was found to be in the range of 2756 to 6948. The formulation F2 showed the highest viscosity (6948 cp) followed by F3 (5244 cp), and F1 (2756 cp). Also, higher viscosity of the lotion reveals more protection since microbial progression. Various amounts of lotion ingredients, as well as concentration of extract, could affect the viscosity. In this study, we used triethanolamine (TEA) as an emulsifier. Gyawali et al. (2016) demonstrated that triethanolamine have negative effect on the viscosity whereas, the stearic acid has positive effect on the viscosity. The increase in the concentration of triethanolamine decreases viscosity and the increase in concentration of stearic acid increase the viscosity. Furthermore, the viscosity of the formulations had increased after storage in room temperature condition. There was a significant difference in the viscosity values between F1, F2, and F3 ($p < 0.05$).

The ability of a lotion to uniformly spread on the skin plays an important role in the administration of a medicated formulation to the skin (Garg et al., 2002). The bioavailability efficiency of a lotion also depends on its spreading significance. The spreadability of lotions was found to decrease with increasing of corn cob extract. Spreadability was found to be in the range of 5.06 to 7.55 cm (Table 4). It has been found that the lotions have good spreadability (5-7 cm). Spreadability was closely related to viscosity. The rate of spreading depends on the viscosity of the sunscreen formulations (Garg et al., 2002). According to the statistical analysis, significant differences were observed between the spreadability values of negative control, F1, F2, and F3 ($p < 0.05$).

Adhesivity measurement revealed that the formulated lotions possessed fairly good stickiness, which is essential for its application and retention on the skin. The adhesivity of

lotions was found to increase with increasing of corn cob extract. Results revealed that there was a significant difference in the adhesivity values between F1, F2, and F3 ($p < 0.05$).

The formulations were able to remain stable after incorporating the active ingredients, which is corn cob extract, into them. The stability study indicated that the lotion formulations were able to maintain their integrity for 4 weeks without showing signs of instability.

The effectiveness of a sunscreen lotion formulation to protect skin from sunburn and other skin damage can be evaluated by the SPF value. The predictable SPF values provide awareness to consumers for how long they can stay in the sun before sun burning. The higher the SPF value, the more effective is the sunscreen in preventing sunburn and other skin damage. A sunscreen lotion product should have a wide range of absorbance between 290 and 320 nm.

Determination of SPF of formulated corn cob extract sunscreen was conducted by in vitro method using ultraviolet (UV) spectrophotometer. Extraction of corn cob was conducted by reflux using ethanol as extraction solvent. Dutra et al. (2004) demonstrated that the method is highly suitable and reliable. Among samples analyzed, the extract of corn cob exhibits a maximal absorbance higher than sunscreen lotion formulations, as it can be shown in Table 5. The extract has medium SPF of 4.95 ± 0.86 , which considered being medium protection sunscreen. The formulation containing 10% extract (F3) has the higher SPF values than the other formulations. This is probably due to the fact that F3 has a total amount of corn cob extract higher than the other formulations. The presence of photo-shielding phenolic makes it possible for the lotion formulations to get protection from UV solar light (Dong et al., 2014; Lumempouw et al., 2012; Wungkana et al., 2013). The lotion formulations studied have minimum protection sunscreen. According to the statistical analysis, significant differences were observed between the SPF values of negative control, F1, F2, and F3 ($p < 0.05$). This study clearly indicated that formulations which have corn cob plant extracts were more potent than the base.

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Chapter 20: Physical Exercise: Importance of Intensity and Timing

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Physical exercise has greater impact for maintenance of health and well-being. Various physiological processes involve in response to both endurance and resistance-based exercise. Those physiological responses are mainly regulated by neurohormonal mechanism and influenced by exercise intensity. Through the metabolic processes, exercise stimulates the physical fitness consisting of cardiovascular and muscular fitness. The physiological changes develop into adaptation following chronic exposure of exercise training. Diurnal variations of some hormones involved in the physiological responses to exercise are thought to affect exercise performance and outcome. Body temperature changes, oxygen uptake and demand differences in specific times of day, and metabolic environment condition are considered to be influenced by diurnal variations and underlie the exercise performance variations throughout the day. Although the available evidence have not met any conclusion yet regarding the effect of specific time of day towards exercise performance and outcome, many existing hypotheses may be put into consideration when arranging the best strategy to perform effective exercise.

Keywords: *physical exercise, physiological response, hormonal response, exercise timing, diurnal variations, morning exercise, evening exercise*

1.0 INTRODUCTION

Physical inactivity is considered as global pandemic which contributes to premature mortality as one of four leading causes. Physically inactive adults comprise as much as 31.1% population globally. More than 50% of an individual's waking time is occupied with activities promoting prolonged periods of sitting. Regardless physical activity levels, this kind of sedentary behavior has implicated in many deleterious health consequences. Sedentary time is associated

with increased risk of all-cause mortality as well as cardiovascular disease, cancer incidence (breast, colon, colorectal, endometrial, and epithelial ovarian), type 2 diabetes mellitus and their associated mortality (Riebe, 2018).

There is a dose-response relationship between physical activity and risk of premature mortality. The risk is further reduced by exceeding amount of physical activity from the minimum recommendation. For fitness improvement, chronic diseases and disabilities risk reduction, and unhealthy weight gain prevention, longer duration and/or greater intensity of physical activity may provide greater additional benefit (Riebe, 2018).

Being active helps maintaining health and well-being by influencing homeostasis through hormonal, neural, humoral, even psychological mechanism. There are two ways for being active: doing physical activity or performing physical exercise. Although those two terms sound similar in some ways, basic definitions may elucidate the subtle difference between them. As stated by American College of Sports Medicine (2017), physical activity refers to movement of the body that takes effort and requires energy above that required at rest (Bushman, 2017). It includes day-to-day tasks such as gardening, taking the stairs at work, and household chores. Meanwhile, exercise is part of physical activity performed in a specific, planned, and structured manner to improve and/or maintain one or more physical fitness element(s) (Bushman, 2017 and Riebe, 2018). For instances, brisk walking is a physical exercise to promote aerobic fitness and weight lifting is to augment muscular fitness (Bushman, 2017). Physical fitness itself is defined by American College of Sports Medicine (2018) as capacity or ability to perform daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and meet unforeseen emergencies (Riebe, 2018).

Mentioning about physical exercise, its training needs to be adjusted to what so-called exercise dosage. Exercise dosage is the amount of exercise exposed to an individual and functions in assessment and quantification of the training. It can be modulated by some components consisting of duration (volume) of an exercise session, intensity of effort (perception of exercise difficulty) in a single session, and frequency of sessions in day-week unit. Among those, intensity of effort is the most complex one and expressed in different ways in relation to exercise type (Hackney & Lane, 2015).

Rates of overweight and obesity tends to increase over time. This fact has encouraged the emergence of understanding that structured exercise impacts on body weight regulation through energy balance. The assumption is that exercise will lead to increased energy expenditure in additive manner. This has been challenged since much evidence has demonstrated the compensatory mechanism which partly or completely mitigates the intended effects of exercise implementation on energy expenditure (Melanson, 2017). However, both intensity and duration (timing) of exercise do affect the energy consumption (Kim, *et. al.*, 2016) in acute response and in maximal and supramaximal exercise (Hackney & Lane, 2015). To gain the optimal benefit from exercise, it is known that knowledge and strategy are required. Development of intended

effects of exercise depends on how the exercise is performed. That is why the two fundamental components of exercise (intensity and timing) in relation to physiological responses need to be discussed to reach the optimal strategy of physical exercise. This literature review is intended to discuss the physiological responses to physical exercise in relation to exercise intensity and timing.

2.0 METHODS

The PubMed database was used to search for physical exercise, the physiological response, and exercise timing. Only articles with full-paper access were included. The candidate references were limited by year of publication, which is within recent 6 years. All the gathered information were inferred from 10 references comprising 4 review articles and 6 original articles, with some data regarding definitions and epidemiology were obtained from 2 textbook references.

3.0 RESULTS AND DISCUSSION

3.1 Physical Exercise Intensity and Physiological Responses

Broadly classified, physical exercise falls into cardiovascular-aerobic type (endurance based) and muscular power-anaerobic type (resistance-strength based). Cardiovascular-aerobic type highly relies on the cardiovascular response and aerobic energy metabolism hence its intensity is usually expressed as a percentage of maximal heart rate (HR_{max}) or maximal oxygen uptake (VO_{2max}) (Hackney & Lane, 2015). The other methods for describing the relative intensity of exercise include percentage of oxygen uptake reserve, heart rate reserve, and metabolic equivalents (METs) (Riebe, 2018). Oppositely, resistance-strength based exercise mainly depends on the output of muscular force and power, making its performance correlates much with anaerobic energy metabolism. Therefore, the intensity of this type of exercise is expressed in percentage of maximal performance relative to a resistant task with 1 repetition maximum (1RM) as a reference criterion. The classification of endurance and resistance-based exercise based on intensity is represented in Table 1.

Table 1. Endurance and Resistance-Based Exercises Classified by Different Levels of Intensity (adopted from Hackney and Lane, 2015)

Category Term	Effort Perception	Relative Intensity	Energy Pathway Predominating	Representative Duration (min)	Other Terminology
Endurance exercise activities					
Light exercise	Easy	<35% VO_{2max}	Aerobic	>30	Short-term, submaximal
Moderate exercise	Modest difficulty	35%–<70% VO_{2max}	Aerobic	30–180	Submaximal, prolonged
Heavy exercise	Difficult	70%–<100% VO_{2max}	Aerobic-anaerobic	≤120	Submaximal, prolonged, high intensity
Maximal exercise	Strenuous	100% VO_{2max}	Aerobic-anaerobic	<15	Maximal or max, high intensity
Supramaximal exercise	Extremely strenuous	>100% VO_{2max}	Anaerobic	<1	All-out, power
Resistance exercise activities					
Submaximal exercise	Modest difficulty	35%–<70% 1RM	Aerobic-anaerobic	<1	Submaximal
Maximal exercise	Extremely strenuous	±100% 1RM	Anaerobic	<0.1	All-out, power
Supramaximal exercise	Extremely strenuous	>100% 1RM	Anaerobic	≤0.1	Negatives

The acute physiological responses following a single bout exercise happen in favor of neurohormonal mechanism. Cardiovascular adjustment, energy production pathways activation, energy substrate mobilization, and maintenance of adequate hydration involve in the occurring responses (Hackney & Lane, 2015). The impact of acute exercise involves many hormonal interactions. These interactions are complex and act together with other factors including macronutrient and total caloric intake, environmental factors (such as humidity, temperature), and subject's factors (age, gender, ethnicity, body mass index, etc.) to produce the physiological effects (Hansen, *et. al.*, 2012). There is one model which can explain the hormonal responses to exercise. This model, which is called Hormonal Exercise Response Model (HERM), consists of a series of 3 interactive phases (Hackney & Lane, 2015). Immediate response is covered in the first phase which occurs within seconds around the onset of exercise. The activation of sympathetic nervous system is increased as the body starts to move or even before the onset as the anticipation to exercise ensues. This in turn leads to increase catecholamines release, particularly

norepinephrine. The connection of sympathetic nervous with the adrenal glands thus amplifies this effect by releasing epinephrine from the medullary to the circulation. Concurrently, inhibition to pancreatic insulin secretion starts and glucagon secretion is stimulated. This process is dominated by feed-forward mechanism of the central nervous system with only little influence from peripheral input which is skeletal muscle in particular.

In less than a minute from the onset of exercise, intermediate or secondary phase takes place as the hypothalamus starts to release its hormones (thyrotropin-releasing hormone, corticotropin-releasing hormone, and growth hormone-releasing hormone). Those hormones then stimulate the pituitary gland to release specific trophic hormones. As they enter the circulation, they begin to act upon their specific peripheral target glands and stimulate to release the effector hormones. The most apparent cascade of this event is the hypothalamic-pituitary-adrenal gland axis which brings about the cortisol release.

A transition occurs when the duration of exercise continues (prolonged state). Other hormones enhance the effect of sympathetic-adrenal axis in the third phase. Renin-angiotensin-aldosterone system is activated in response to fluid shift from vascular space and diminished total body water stores causing vasoconstriction and water resorption. Skeletal muscle also releases some cytokines such as interleukin (IL)-6 which acts as hormonal-like agents that may affect the release of other hormones. IL-6 will signal the energy substrate mobilization.

Stimuli that occur in the 1st and 2nd phase are neural in origin and considered as the primary regulator of the hormonal responses. The following processes in the third phase represent the combination effect of humoral and hormonal factors which provide changes in the internal *milieu*. The modulation effects by humoral and hormonal factors are augmented in accordance to extended duration of exercise. This ensues as energy substrate availability issues cause shifting in energy utilization (decreased carbohydrate usage and increased lipid metabolism) or hydration issues such as hemoconcentration and/or dehydration compromise the thermoregulatory mechanism leading to increased heat body storage and further stimulation of hormonal responses. The environment also has a role in this process where amplification of the responses occur when greater thermal load gives rise to the core body temperature. Further dehydration resulting from low consumption of water during exercise also contributes to this rise in body temperature. In this case, norepinephrine and epinephrine levels are increased in response to greater heat storage within the body.

During recovery from the exercise, rebound effect tends to develop when fluids are consumed in ample amount. Moving of fluids into vascular space lead to hemodilution and decreased concentration of certain substances including hormones. Hormonal responses to exercise are primarily exhibited by metabolic hormones. These comprise catecholamines (epinephrine and norepinephrine), growth hormone (GH), cortisol, insulin, and atrial natriuretic peptide (ANP). Hormones such as insulin-like growth factor (IGF)-1, triiodothyronine, and testosterone are also believed to be involved in acute responses to exercise but the evidence are still conflicting thus more studies are needed for further evaluation (Hansen, *et. al.*, 2012).

Hansen, *et. al.* (2012) also stated that the physiological effects of catecholamines depend on specific binding to its receptors (α_1 , α_2 , β_1 , β_2 , β_3). Norepinephrine mainly binds to α -receptors while epinephrine mainly binds to β -receptors and at higher concentrations it may also activate α -receptors. Activation of α -receptors lead to stimulation of hepatic and skeletal muscle glycogenolysis and skeletal muscle glycolysis as well as inhibition of pancreatic insulin secretion, lipolysis, and gastrointestinal vasodilatation. Activation of β -receptors stimulates pancreatic insulin and pituitary gland adrenocorticotrophic hormone secretion, increases cardiomyocyte contractility, dilates skeletal muscle arteries, relaxes bronchial smooth muscle, and stimulates lipolysis. Lipolysis is mediated by activation of lipolysis stimulating enzymes. Selective binding of catecholamines to α_2 receptors inhibits lipolysis. Visceral adipocytes are typically dominated by β -receptors while subcutaneous adipocytes are predominated by α_2 -receptors. Acute exercise significantly increases catecholamines secretion. At the initiation of exercise or even before initiating exercise as the mental preparation towards exercise ensues, the rapid increase of catecholamines level results from direct stimulation of central order in the brain to the adrenal glands.

Primary effects exerted by GH in response to exercise are elevation of blood glucose, stimulation of skeletal muscle protein synthesis, and lipolysis. Blood glucose is increased through inhibition of skeletal muscle and adipocyte glucose uptake and stimulation of hepatic gluconeogenesis. Protein synthesis in the skeletal muscle is indirectly stimulated via the release of IGF-1 and/or local hormonal factors which facilitates amino acids transport and availability. GH stimulates lipolysis by increasing the adipocyte β -receptors sensitivity for catecholamines, stimulating lipolytic enzymes, and/or inhibiting triglyceride storing enzymes. GH functions as mediator of physiological adaptations during acute exercise. Its concentration starts to increase immediately following the onset of exercise and declines straightaway

after the cessation of exercise. The greater magnitude of GH release during acute exercise is seen at younger subjects with greater physical fitness, in different environmental conditions, greater intensity exercise, longer duration, and/or with greater repetition. It is also affected by nutrition, amount of sleep, gender, and prior exercise. Apart from individual variations, GH levels can be varied when performing endurance or resistance exercise with different modalities and/or under various conditions.

Physical exercise serves as physiological stress in healthy individuals which activates the hypothalamic-pituitary-adrenal axis. During acute endurance and resistance exercise, especially in vigorous intensity, hypercortisolism may occur and promotes gluconeogenesis, peripheral lipolysis, and muscle protein breakdown. Muscle mass loss caused by cortisol results from a combination of protein synthesis suppression and proteolysis amplification through lowered transport of amino acids into the muscle, inhibition of insulin and IGF-1 action, inhibition of phosphorylation involved in protein synthesis, and activation of cellular proteolytic enzymes. Greater increase of cortisol release in response to acute endurance exercise can be expected in sedentary subjects, higher exercise intensities, prolonged exercise, and/or anxiety or psychological stress. During acute resistance training, cortisol release is influenced by the type of resistance training (hypertrophic vs maximal strength), physical activity level (sedentary vs highly active), previous longterm sports participation, and neuromuscular performance.

Insulin controls the glucoregulation during exercise. To prevent hypoglycemia, insulin release is lowered slowly during acute endurance exercise to allow greater hepatic glucose synthesis and release due to greater glucose uptake by both insulin dependent and independent pathway. Insulin also exhibits anti-lipolysis properties because it stimulates the activity of phosphodiesterase-3B which subsequently degrades cAMP, an important messenger in lipolysis pathway, and suppresses the expression of adipose triglyceride lipase. This effect is different in various adipose tissue depots. In visceral adipocytes, this effect is blunted compared to subcutaneous adipocytes.

ANP is known to exert control of lipolysis. Beside its main effect in diuresis and natriuresis, it binds to the type A-NP receptor on adipocyte membrane and stimulates the protein kinase-dependent phosphorylation of hormone-sensitive lipase and perilipin to promote lipolysis. After initiation of exercise, distension of atrial cardiomyocytes lead to secretion of ANP and rapid increase of its level in the blood. Since it has a short half-life, which is around 2–5 minutes, its level reduces rapidly as the exercise stops.

Following acute endurance exercise, there is marked increase of blood IGF-1 level in healthy subject. IGF-1 is an important hormone involved in the regulation of musculoskeletal growth and development. It is synthesized and released from the liver under stimulation of growth hormone also is produced by skeletal muscle and/or bone cells. IGF-1 stimulates skeletal muscle growth by activation of protein synthesis pathway and maintains its mass by inhibiting skeletal muscle atrophy pathways. Some evidences have demonstrated this finding but this remains controversial because there still are some studies which fail to reproduce. Some factors affecting result of a study such as gender and training modalities still need to be explored in detail.

Stimulation of lipolysis is facilitated by triiodothyronine which activates lipolytic enzymes such as hormone-sensitive lipase. It may also be mediated by other hormones such as GH and catecholamines. However, evidence about effect of acute endurance exercise on blood triiodothyronine level remains elusive.

In response to exercise, skeletal muscle synthesis is stimulated and protein degradation is inhibited by testosterone. It seems to be attributable to increased amino acid uptake into the cell, specific genes transcription caused by binding of testosterone to intracellular androgen receptors, increased IGF-1 production, and cortisol signaling inhibition. Acute endurance exercise testosterone level significantly in healthy subjects. However, this increase is still unclear in healthy women. Change in blood testosterone level following acute endurance exercise is affected by intensity and volume of the exercise, choice and/or order of the exercise, rest period duration, training status, nutrition, and/or age.

The general physiologic responses to an exercise session after chronic exposure happen to be similar to the responses occur before chronic progressive exercise training. An acute bout of exercise still serves as a stimulus to the physiologic response as long as it is performed in maximal intensity or more. The physiologic responses seem to adapt as the training goes on and the attenuation of these responses becomes greater as the greater training adaption incurs. However, a greater physiological stimulus can be made by performing greater level of workload at maximal or supramaximal intensity. In this situation, the attenuation of physiologic responses in chronic adaptation can be blunted. Target tissues begin to develop greater sensitivity to the hormonal stimulus because the level of neural, humoral, and hormonal stimuli disturbances in the blood is greatly diminished in response to chronic adaption of exercise. The mitigated responses occur as many target tissues increase the expression of functional hormone receptors, enhance the receptor affinity for hormones, and amplify the postreceptor mechanisms. These changes

result in lesser amount of hormone required by target tissues to bring about a physiological outcome (Hackney & Lane, 2015).

The effect of exercise intensity is mediated by its stimulation toward the secretion of energy substrate oxidation related hormones. Catecholamines promote lipolysis and its secretion greatly increases with higher relative exercise intensity. However, lipid oxidation does not rely on catecholamines level because it only increases blood lipid content and does not oxidized it (Kim, *et. al.*, 2016).

There are thresholds for energy substrate utilization because more energy is consumed when exercise is performed at higher intensity. At high intensity, the main substrate energy is carbohydrate while lipid is mostly utilized in relatively low to moderate intensity. It is believed that at certain level of intensity exercise may influence lipid oxidation related enzyme activity thus possibly affect fat utilization.

Lipid metabolism in response to exercise is expressed as MFO (maximum value of fat oxidation) and the exercise intensity where fat oxidation is maximized is represented by Fat_{max} (workload or exercise intensity with greatest percentage of fat oxidized). Fat_{max} is achieved in relatively low intensity. At Fat_{max} , lipid utilization as the energy substrate reaches its peak. During moderate intensity exercise, lipid utilization decreases and is significantly seen at above 60% VO_{2max} . At Fat_{max} before the percentage of carbohydrate increases, the exercise intensity is thought to be most useful for weight loss and lipid metabolism. However, not all studies supported this statement.

A study carried out by Kim *et al.* (2016) demonstrated that exercise at Fat_{max} exert significantly higher lipid oxidation than 60% VO_{2max} . This finding suggests that during prolonged exercise, Fat_{max} serves as intensity which promotes optimized exercise-associated lipid oxidation. Conversely, higher carbohydrate oxidation was noted to be significant at 60% VO_{2max} .

3.2 Timing of Physical Exercise and Exercise Effectiveness

Timing of exercise comprises duration of single exercise session and specific time at which the physical exercise is performed irrespective of continuity. The resulting effects from the exercise timing are attributable to the physiologic responses towards prolonged changes causing by exercise in longer duration and diurnal rhythm of some physiologic functions.

Prolonged duration of exercise may add up to body dehydration status as hemoconcentration results from shifting of fluids from intravascular compartment as well as diminished fluid balance during exercise. Typically, 10–15% hemoconcentrations effect is apparent in 30–90 minutes duration of exercise³. Free

fatty acid has an essential role as source of energy in prolonged exercise. It again still depends on exercise intensity where at 60% $\text{VO}_{2\text{max}}$ or higher the mobilization of free fatty acid to the muscle cells is inhibited to some extents that make a decrease in lipid oxidation. Lactate accumulation at that intensity lowers the muscle pH so that activity reduction of an enzyme responsible for mitochondrial uptake of free fatty acid, called carnitine palmitoyltransferase-1, occurs and lipid oxidation is decreased. This is supported by findings from a study by Kim *et al.* (2016) suggesting that exercise-associated lipid oxidation is optimized during prolonged exercise at Fat_{max} . Time of day has impact on exercise performance (Hill, 2014 and Chtourou & Souissi, 2012). Energy expenditure is thought to be greater and performance is improved during evening exercise compared to morning exercise. Although the underlying mechanism has not been fully understood, slight increase in core temperature has a role in it. Increase of nerve conduction velocity and vasodilatation are the consequences of the elevated temperature, thus in turn may improve muscular supply and substrate elimination followed by increased glycogenolysis and glycolysis (Fernandes, *et al.*, 2014).

The diurnal pattern of some metabolic hormones also contributes in this energy system distribution and pacing. The catecholamines are known to have 12 hours circadian rhythm of peak level at 7:00–10:30 am and 8:00–10:00 pm. Exercise-induced increase of epinephrine occurs at around 8:30 am. They upregulate some physiological parameters such as heart rate, blood pressure, metabolic rate, glycogenolysis, and glycolysis to prepare the body for an immediate response. Cortisol and testosterone also appear to reach its peak at around 8:00 am. Cortisol continues to decrease linearly throughout the day and falls into its nadir at about 8:30 pm. In other reference it is mentioned that highest cortisol level is established in the early morning and it reaches its lowest level around midnight or 3–5 hours after the onset of sleep (Hansen, *et al.*, 2012). The lowest level of testosterone occurs at around 8:00 pm. While cortisol does not seem to show response to exercise, an acute response of testosterone toward exercise is similar at different times of the day. GH oppositely shows slight reduction in the morning with no alteration in response to exercise. It reaches its peak concentration during the first two hours of sleep in the night. Even though the diurnal pattern does not correlate much with the following two hormones strongly regulating the metabolic *milieu*, glucagon seems to be reduced while insulin is increased in the morning (Fernandes, *et al.*, 2014).

An experimental trial performed by Fernandes *et al.* (2014) involving 9 male recreational cyclists demonstrated that 1) a better performance represented by shorter time trial in the evening compared to morning trial did not go with significant alteration of aerobic and anaerobic contribution, 2) concentration of insulin, cortisol,

free and total testosterone were lower in the evening while concentration of GH and plasma glucose were higher in the evening, but higher norepinephrine and glucose responses to exercise was in the morning⁹. This time-specific response of norepinephrine is little contradictory with the findings of a study performed by Kim *et al.* (2015) which showed that plasma norepinephrine concentrations did not seem to be increased in response to acute endurance exercise in the morning. From the trial, Fernandes *et al.* (2014) hypothesized that the improved performance in the evening might be related to concomitant changes of pacing and energy system distribution. Increased aerobic and anaerobic contribution during the trial was parallel and maintained so that the better performance in the evening was not caused by an alteration of a single energy system nor a rise of a single energy supply at some time points during the trials.

Performance at different times of day is influenced by inter-coordination of the above mentioned hormones that influences metabolism both at rest and during exercise. Elevated cortisol level indicates an increased level of general physiological stress and this may lead to elevated blood glucose. Since insulin lowers morning blood glucose, the effect of cortisol is occasionally counterbalanced. The reduced concentration of plasma GH in the morning also contributes to the failure of blood glucose to elevate. Fernandes *et al.* (2014) had hypothesized that the elevated level of insulin along with reduced GH concentration in the morning may not serve as an optimal metabolic *milieu* to support the best exercise performance. Norepinephrine has a role in increasing plasma glucose by its direct effect on hepatic glycogenolysis or its indirect effect on free fatty acids mobilization. The enhanced responses of norepinephrine and blood glucose toward exercise in the morning seem to counteract the reduced morning plasma glucose. Testosterone enhances neuromuscular efficiency and force output by improving Ca^{2+} handling mechanism in the fast-twitch muscle fibers. Also, there is a positive correlation between basal testosterone level and sprinting and explosive power performances. Therefore, the higher level of free and total testosterone in the morning combined with its response to exercise might partially compensate the negative metabolic *milieu* for exercise.

The reason behind why performance is impaired more in the morning than evening is not because of the alteration in pacing nor aerobic and anaerobic supply distribution. The less supportive metabolic *milieu* in the morning, indicated by elevated insulin and cortisol level and reduced plasma glucose level, in addition to exacerbated response of norepinephrine and plasma glucose level to exercise is thought to be the more acceptable explanation.

Inflammatory cytokines, such as tumor necrosis factor (TNF)- α , interleukin (IL)-6, and IL-1 β also show diurnal variation contributing to acute responses to exercise.

Increase level of IL-6 in the blood may promote substrate metabolism specifically lipolysis and lipid oxidation through autocrine and paracrine effect (Kim *et al.*, 2015).

Acute endurance exercise raises catecholamines level. Respective to specific time of day, catecholamines have stimulatory or inhibitory effect to IL-6. Epinephrine stimulates IL-6 release while norepinephrine affects IL-6 level in both stimulatory and inhibitory action. In response to acute endurance exercise, secretion of IL-6 from adipose tissue and muscle cells is mediated by contraction of skeletal muscles and independent to inflammatory cascade of TNF- α . In their study, Kim *et al.* (2015) showed significantly higher concentration of plasma IL-6 and epinephrine immediately after acute endurance exercise in the evening than in the morning. The study also demonstrated that free fatty acids level, which was correlated with IL-6, was higher in the evening. These results indicated that response of some inflammatory cytokines and hormones following an acute bout of exercise was more enhanced in the evening. The contribution of IL-6 to substrate metabolism is enhanced in the evening along with greater response of epinephrine towards exercise.

Regarding fat metabolism, morning exercise is beneficial when performed in an energy deficits condition. A study carried out by Iwayama *et al.* (2015) concluded that exercise increased the 24-h fat oxidation only when implemented before breakfast under energy-balanced conditions. This is because the carbohydrate balance acts as an autoregulator for carbohydrate and fat oxidation. A positive balance leads to increase of carbohydrate oxidation and suppression of fat oxidation and *vice versa*. Exercise in the carbohydrate-depleted state with known good glucose tolerance, insulin sensitivity, endurance capacity, and adequate expression of skeletal muscle genes responsible for fat oxidation showed beneficial long term effects. This effect of increased fat oxidation also appears when exercise is accompanied by caloric restriction because an increase caloric intake to meet energy balance will show only little effect of exercise to 24-h fat oxidation. Therefore, for body fat burning purpose, exercise is better performed before breakfast or along with food consumption restriction.

Steady-state oxygen uptake seems to be affected by diurnal variations as well. It is higher at a given power output in the evening than in the morning. Hill (2014) reported that exercise performance in the evening was associated with a higher maximal oxygen uptake and higher anaerobic capacity. Oxygen uptake kinetics was also faster in the evening which caused in slower utilization of the anaerobic supplies. The combination of those findings brings about a significantly longer performance in the evening. However, the exercise efficiency is lower in the evening

because the oxygen demand is higher. It means that the diurnal variations do not influence the typical pattern of performance throughout the day in a positive way.

Effect of diurnal variation to exercise performance or physiologic response still seems to be debatable. Although it was stated in Fernandes *et al.* (2016) that cortisol shows almost no response to exercise, Kim *et al.* (2014) in Kim *et al.* (2015) found that acute endurance exercise did increase cortisol level but it was irrespective of specific time of day. Factors affecting the increased level of cortisol following exercise are exercise intensity, duration, and diet. A study carried out by Kim *et al.* (2016) showed no significant differences of epinephrine, norepinephrine, growth hormone, and cortisol level in Fat_{max} or 60% VO_{2max} between the morning and evening exercise. Parameters of energy metabolism demonstrated uneven results. Concentration of free fatty acid did not show significant difference in either intensity or timing. Fat_{max} had markedly higher lipid oxidation than 60% VO_{2max} in both timing. Conversely, higher carbohydrate oxidation was noted to be significant at 60% VO_{2max} for the morning and evening trials. There is no significant difference between both timing of exercise.

Küüismaa *et al.* (2016) reported that strength performance improvement in resistance exercise was unlikely related to training time. Yet, muscle mass gain might be higher when performing endurance and resistance training in combination in the evening¹². A review by Chtourou & Souissi (2012) revealed that the effects of diurnal variations on aerobic performances have not been proven conclusive yet. Despite that fact, it has been established that performances of anaerobic exercise exhibit early morning nadirs and peak in the late afternoon. Hill *et al.* (1989) in Chtourou & Souissi (2012) suggested that specific time of day might function in improvement of the anaerobic threshold in a sustained aerobic exercise. Long-term exercise in the morning may improve morning performances that used to be poor to the level of or higher than peak performances observed in the evening. It may decrease the amplitudes of diurnal performance variations as well. As opposed, evening training in turn may lead to enlarged amplitudes of diurnal variations on neuromuscular performance. Some factors such as sleep deprivation, duration of warming up, and training time of day can affect the diurnal variations on exercise performances.

These equivocal findings indicate that more research with standardized methods and controlled variables need to be performed to gain a conclusion about how different times of day affect physiologic responses to exercise. Therefore, a better strategy for effective exercise performance can be made based on best timing of optimal physiological response.

4.0 CONCLUSION

Physical exercise is considered to be a good physiological stress. Body responds to exercise through metabolic processes (e.g. glycolysis, protein degradation and synthesis, lipolysis, gluconeogenesis, glycogenolysis) regulated by neurohormonal mechanisms to provide adequate energy supply. Optimal benefit from physical exercise can be achieved by concerning the effect of exercise intensity and timing. Physiologic responses including energy balance and utilization are affected by exercise intensity. At relatively low to moderate intensity, fat is shown to be the main fuel for energy while carbohydrate utilization is higher at high intensity exercise. Prolonged duration of exercise may enhance the fat oxidation process. Specific time of day affects exercise with performance generally peaks in the evening. The tendency of evening exercise performance to have better performance is thought to be affected by diurnal variations of some hormones involved in the physiological responses as well as body temperature changes throughout the day, oxygen uptake differences, and metabolic environment. However, endurance exercise seems to be beneficial when performed in the morning under energy-depleted condition. More studies need to be carried out to find a consistent link between specific time of day regarding the diurnal variation and exercise effectiveness.

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