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Letter from the Editor-in-Chief

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We hope that this journal will continue to promote understanding of the current status and potential capabilities of Myanmar and South Korea and promote in-depth international exchange and cooperation.

We would like to express our deepest gratitude to the editorial board and YUE and KOMYRA for their valuable support in The Myanmar Journal publication.

February 28, 2021

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A STUDY ON COMPETITIVE FORCES OF PRIVATE HAEMODIALYSIS CENTRES IN MANDALAY BEFORE COVID 19 PERIOD

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ABSTRACT : The study analyzes competitive forces of private haemodialysis centres in mandalay. The objective of the study is to analyze the major competitive forces of private haemodialysis centres at Mandalay. The studied population is 80 doctors and 5 owners five private hospitals at Mandalay. The sample was selected by using simple random sampling method. The primary data was collected by interviewing 40 doctors and 5 owners with the use of structured questionnaires. Descriptive research was employed to assess the competitive advantage of private haemodialysis centres in Mandalay. Among competitive factors, high price for medicine pharmacy is the strongest force in the bargaining power of suppliers. Existing private haemodialysis centres of the competition seems to be weak because of a few number of private haemodialysis centre and private haemodialysis of same quality and same price, less preference of nephrologist, no competitive advantage and difficulty in getting market share. The new entry is the lowest force because of the capital requirement, market size, government regulation, brand royalty and economies of scale. Thus, the study conclude that there are moderate competition among these private haemodialysis centre in Mandalay.

Key words *: Haemodialysis Centres, Buyers, Suppliers, Substitute product, Rivalry among competing firms, Competitors*

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I. Introduction

Competition is found in many fields of human activity such as sports, education, business and politics. There are many goals for which people compete against each other to achieve their desired results. Competition can be good or bad depending on the end of the spectrum. Competition between two companies can benefit society, just as often it hurts society. Business is often associated with competition as most companies are in competition with at least one other firm over the same group of customers. According to Porter (1979), there are five forces which are existing rivalry , potential entrants, bargaining power of buyer, bargaining power suppliers and threat of substitutes.

The competition strategies an organization pursues have a major impact on its performance relative to its peers. The strategy is an action a company takes to attain one or more of its goals. For most of all organizations, an overriding goal is to achieve superior performance. It is important to pursue the most appropriate strategies to become the successful business organization. If an organization is to survive, it must choose the best strategy, which will be pursued. Before choosing and formulating strategy, it is needed to consider the influences of the industry environment in which the organization compete on its performance.

After adopting market-orientated policy, the Government of Myanmar encourages the role of private sector in all industries including health sector to achieve the economic and social objective. In 1990s, Myanmar has experienced momentous change in health care service: especially the emergence of private hospitals. In Myanmar, the private health care service like private hospitals have been legally allowed to be registered according to the law relating to private health care services adopted in 2007. This law aims to strengthen Myanmar health care system by promoting the role of private health sector to fulfill the public health needs. The private sector of health care in Myanmar includes private hospitals and private clinics including haemodialysis centres for patient with long term kidney damage.

II. Rationale of the Study

Myanmar has to face many health problems nowadays. One of the most important and common problem is long term kidney damage due to various cause including diabetes and hypertension. Most of the people with long term kidney damage need haemodialysis. Haemodialysis is the process by which the toxic Materials are removed from the body. Therefore, most of the kidney damage patients survive by mean of

haemodialysis. Myanmar patients have good medical knowledge and now they enjoyed good quality of life by mean of haemodialysis. Most of the patient accepted dialysis treatment in the health centres in Mandalay.

Mandalay is the second largest city in Myanmar with good communication with neighbouring countries like India and China and it has many developmental potentials. Its population is about one million according to Mandalay City Development Committee, 2014. Mandalay has many health institutions such as Mandalay General Hospital, Mandalay Workers' Hospital, 300 Bedded Teaching Hospital and many private hospitals. Among these health institutions haemodialysis procedure is available only in Mandalay General Hospital (MGH) and some private hospitals. In MGH, haemodialysis procedure was established in 1997 and later it was available in a few private centres. Nowadays there are five private haemodialysis centres in Mandalay, including City Hospital, Mandalar Hospital, Nyein Hospital, Palace Hospital and Royal Hospital. These centres are now competing among each other by providing unique dialysis care service to their patients to achieve their business objectives such as margin and large market share in dialysis health care sector of Mandalay.

III. Objectives of the study

The objective of the study is

(i) to analyze the major competitive forces of private haemodialysis centres at Mandalay

IV. Scope and Method of the Study

This study only focuses on competitive forces of private haemodialysis centres in Mandalay by using Michael Porter's Five-force Model. The population of Mandalay is about one million according to Mandalay City Development Committee 2014. There are five private haemodialysis centres in Mandalay including City Hospital, Mandalar Hospital, Nyein Hospital, Palace Hospital and Royal Hospital.

The method of this paper is mainly descriptive research and it use both primary data as well as secondary data. Primary data is collected by asking perception on the competition in dialysis care service sector to the owner or manager of present five private haemodialysis centres in Mandalay. For secondary data, these centres and relevant web pages were studied and prepared for this

paper. The interviews with the owner of the hospitals were conducted by using structured questionnaires. Their perception on competition in the industry measured using five-point Likart scale ranging from 1 to 5: 1 represents strongly disagree , disagreed for 2, uncertain for 3, agree for 4 and strongly agree for 5 respectively.

V. Literature Review

1. Rivalry among Competiting Firms

This force describes the intensity of competition between existing players (private haemodialysis centres) in an industry. High competitive pressure can result in pressure on prices, margins, and hence, on profitability for every single company in the industry.

2. Threat of Potential Competitors

The easier other companies to enter this industry, the higher will be competition in an industry. In such a situation, new entrants could change major determinants of the market environment (e.g. market shares, prices, customers loyalty) at any time. There is always a latent pressure for reaction and adjustment for existing players in this industry.

3. Bargaining Power of Buyers

The bargaining power of customers determines how much customers can impose pressure on business thus reducing the profit margin. It is called of bargaining power of customer. For this study, the expectation and perception on existing clients (patients) as bargaining power of buyers.

4. Bargaining Power of Suppliers

The term 'suppliers' comprises all sources for inputs that are needed in order to provide goods or services. For this study, the available nephrologist, skilled nurses, pharmacy and haemodialysis machine company as bargaining power of suppliers.

5. Threat of Substitute Products

Substitute products are the products of industries that serve similar consumer needs as the industry being analyzed. The existence of close substitute presents a strong competitive threat, limiting the price the company charge and thus its profitability However, if a company's products have a few close substitutes, then, other things being equally, the company has the opportunity to raise prices and earn additional profits. A threat from substitutes exists if there are alternative products with lower prices of better performance parameters for the same purpose.

VI. Analysis

Table 1. Rivalry among Established Companies

No	Competitive Factors	Mean Score
1	A lot of Private haemodialysis centre	2.80
2	Same Strategies	4.00
3	More better than others cerntre	2.60
4	More success than others cerntre	2.80
5	Nephrologists preference	2.00
6	People more prefer haemodialysis centre than others	3.60
7	Competitive advantages	2.60
8	Difficulty in getting market shares	2.40
9	Price competition	1.20
10	Marketing and promotion program	1.60
11	High barriers for exit (expensive and highly specialized haemodialysis machine	3.40
	Average	2.45

Sources: Survey Data, 2020

Table (1) shows that there are 3 items which average mean is being above normal. They are use of same strategies; centre preference and high barriers of exit for exit industry (expensive and highly specialized haemodialysis machine). The remaining items regarding the other competitive forces of the rivalry have mean sore with lower than 3. Overall the average score is lower than 3 representing that the respondent's disagree the competitive factors from the rivalry among established companies. Thus, it can be concluded that the rivalry among existing private haemodialysis centres in Mandalay is not strong.

Table 2. Threat of Potential Competitors

No	Competitive Factors	Mean Score
1	Economies of scale.	2.40
2	Easy to establish.	2.20
3	Low initial investments and fixed costs.	1.20
4	Little government regulation.	1.40
5	Easy to get permit and license.	1.40
6	Abundant space land and building for new private haemodialysis centre.	2.60
7	Low building cost.	1.80
8	Abundant of important resources (haemodialysis machine)	3.60
9	Abundant of important resources (human Resource)	2.40
10	Abundant of important resources (physicians and nephrologist)	2.60
11	Low brand royalty.	2.00
12	Market size large.	3.00
	Average	2.21

Sources: Survey Data,2020

According to the Table, there is only one item, abundant of important resources haemodialysis machine of which mean score is 3.60 being above score point 3. The haemodialysis machine used in private haemodialysis centre can be bought freely and easily now as they needed and then they agree that there are abundant of important resources like haemodialysis machine. Total mean is, however, about 2.21 representing that they disagree the competitive factors as regards the threat of potential competitors. Thus, it can conclude that the threat of potential competitors is not strong to enter into private haemodialysis industry of Mandalay.

Table 3. Bargaining Power of Buyers

No	Competitive Factors	Mean Score
1	Few people who can charge in private haemodidalysis centre priory.	1.20
2	Too much substitute (other haemodialysis center).	3.20
3	Patients want only the best health care service	4.00
4	Patiens prefer cheap prices.	3.60
5	Patients prefer only famous nephrologist.	4.00
6	Shift to another for dissatisfaction.	2.60
7	Too much requests and bargaining with respect to private haemodialysis care and service.	5.00
8	Hard in relationships with patients and clients.	3.60
9	Requseting for services which are not provided by private haemodialysis centre.	3.20

10	Patients not follow the rules and regulations of provide haemodialysis cente.	4.00
11	Often misunderstanding between patients and employees.	2.60
12	Patients' Families and guests may disturb other patients.	2.40
	Average	3.28

Source: Survey Data, 2020

The survey indicates that there are eight items which average mean is being above normal level: this item are too much substitutes, demand of the patients with the best health care service and cheap price, patients preference on' famous nephrologist and request for bargaining on the treatment, hard relationships both patients and clients, requests unique services and to avoiding rules and regulations of private haemodialysis centre.

Other competitive factors such as low number of patients, customer shift for other hospital, having misunderstanding and etc get lower than normal score.

Thus, total mean is about 3.28 which describe the completive factor form the bargaining power of buyers is more than average score. Thus, it can be concluded that the bargaining power of buyers at private haemodialysis centres in the private health care industry of Mandalay is strong.

Table 4. Bargaining Power of Suppliers

No	Competitive Factors	Mean Score
1	Scarcity of nephrologist	4.00
2	Difficult to get trained doctors.	3.60
3	Difficult to get skilled nurses.	3.80
4	Difficult to get skilled labours and general workers.	4.00
5	High cost for salaries and wages.	4.20
6	Difficult to get high quality pharmacy	2.60
7	High price for pharmacy.	4.60
8	High value hemodialysis machine.	4.00
9	Difficult to buy hemodialysis machine.	2.00
10	A few numbers of companies which distribute quality pharmacy and hemodialysis machine.	2.60
11	High switching cost in purchasing pharmacy and hemodialysis machine from alternative suppliers.	4.00
	Average	3.58

Source: Survey Data, 2020

The bargaining power of supplier is with high average score 3.58. It is because of there are eight items which average mean is being above normal level: there are scarcity of nephrologist, difficult in getting trained doctor, difficult in getting skilled nurses and skilled labours and general workers, high cost for salaries and wages,

high price for pharmacy and hemodialysis machine, Nephrologist are the business partner with the private hemodialysis centres. Salary is usually not paid to nephrologist. Salaries and wages are only for trained doctor, skilled nurses, labour and general worker. Other competitive factors such as difficult in getting high quality pharmacy, difficulty to buy the hemodialysis machine, a few numbers of companies which distribute quality pharmacy and hemodialysis machine and etc. get lower than normal score. Thus, it can be concluded that the bargaining power of suppliers at private hemodialysis centres in Mandalay are the strongest among others.

Table 5. Threat of Substitute Products

No	Competitive Factors	Mean Score
1	People prefer public haemodialysis centre rather than private	2.60
2	High standard and effective health care service in public haemodialysis centre.	3.20
3	A lot of clinics and private doctors.	4.20
4	People prefer traditional medicine.	2.20
5	Public health care network is effective and coverage.	2.00
6	A lot of private and informal clinics.	4.00
7	People take medical care in other regions.	4.20
8	No much difference in effectiveness.	2.00
9	High cost in private haemodialysis centre than in others.	4.00
10	Easy to switch to others.	2.00
11	Same relations and care of doctors/nurse.	2.20
	Average	2.96

Source: Survey Data, 2020.

For the item (1), if the public haemodialysis centres in Mandalay have the high standard and effective health care services; people may go there rather than to private ones. For item (2), People are more prefer other clinics and private home doctors than private haemodialysis centres. For item (3) , some people may not rely on the private haemodialysis centres for their health care. Rather, they use to the private, other and informal practitioners. For item (4), the health care's services in Yangon or abroad are more complete and higher quality than in Mandalay. For item (5), they are established the haemodialysis centre business with the very expensive and highly specialized haemodialysis machine as well as highly specialized personnel or professional, and provide superior service. Thus, the patients must incur significant costs for taking treatment at private haemodialysis centres, and then, they may substitute with others.

On average, overall score is about 2.96 representing the disagreement on the competitive factors from the threat of substitutes. Thus, it can be concluded that the

threat of substitutes for private haemodidalysis centres in the private health care industry of Mandalay are not strong expected.

Table 6. Analysis of Overall Mean Value on Competitive Forces of Private Haemodialysis Centres in Mandalay

No	Competitive Factors	Mean Value	Strong/Weak
1	Rivalry among Established Companies	2.45	Weak
2	Threat of Potential Competitors	2.21	Weak
3	Bargaining Power of Buyers	3.28	Strong
4	Bargaining Power of Suppliers	3.58	Strong
5	Threat of Substitute Products	2.96	Weak
	Average	2.89	Weak

Source: Survey Data, 2020

According to Table (6);it can be seen that among the competitive forces, the bargaining power of buyers (clients)and bargaining power of suppliers (nephrologist, nurses and medicine suppliers) are with the strong factors upon the existing competitive forces for private haemodialysis centers in Mandalay. The bargaining power of supplier is the most strongest factor upon the existing competitions forces for private haemodialysis centres in Mandalay. It is also found that the rivalry among established companies. The threat of potential competitors and threat of substitute as weak forces in private haemodialysis centres in Mandalay.

Thus, the existing private haemodialysis centres are facing with the bargaining power of buyer that they demand on price reduction and better service which increase operating cost. From the point of supplier power, the suppliers force up the price that centre must pay high price for its input, reduce the quality of the inputs they supply, thereby depressing the company's profitability.

VII. Findings amd Suggestions

1. Findings

This study found that bargaining power of buyers and suppliers are strong forces and the threat of potential entry, rivalry among established companies and substitute health care center are weak forces.

The bargaining power of suppliers is the strongest forces among others. It is because these are scarcity of nephrologist, difficulty to get trained doctor, difficult to get skilled nurse, difficulty to get skilled labour and general workers, high salaries

and wages and high price for medicines pharmacy and high value of haemodialysis machine. Among competitive factors, high price for medicines pharmacy is the most strongest force in the bargaining power of supplier.

The bargaining power of buyers in Mandalay is also high. As regard of the treat of substitute of private haemodialysis centres, the agree responds are likely to be less slightly than the disagree responds. The study found that the forces is weak because of people prefer public haemodialysis centres rather private, less preference for traditional medicine, lack of effective public health care network and coverage, weakness in customer relation of public hospital, difficulty in switching to other haemodialysis centres, different relations and care of doctor and nurse.

According to the study existing private haemodialysis centres of the competition seems to be weak because of a few number of private haemodialysis centres and private haemodialysis of same quality and same price, less preference nephrologist, no competitive advantage and difficulty in getting market share.

The study on the last force, new entry is the lowest forces which are because of the capital requirement, market size, government regulation, brand royalty and economies of scale.

2. Suggestions

Based on the results of this study, the bargaining power of suppliers and buyers are the most strongest forces in this industry. Thus, the existing private haemodialysis centres should consider how to retain the existing supplier and customer and how to motivate new supplier and customers.

The existing private haemodialysis centres could reduce the bargaining power of supplier by using good relationship or alliances, increasing incentives and services. The private haemodialysis centres could avoid the competition among existing private haemodialysis centres providing differentiate services by communicating and collaborating with their competitor.

The industry of the private haemodialysis centers should try to expand the market share and distribution channels other regions and cities.

Finally, the private haemodialysis centers should try to understand the effect of each industry forces and then take suitable position against the pressures exerted by their industry forces. These application will provide suitable competitive advantages for private haemodialysis centers in Mandalay.

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Adaptation of Online Learning with Zoom Application during COVID-19 Pandemic : A Case Study of MBF, MMM and MHTM Programmes of Yangon University of Economics

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ABSTRACT: In the context of the COVID-19 pandemic, the Ministry of Education has adapted a prevention policy to incorporate the closure of educational institutions as a prevention strategy. The e Yangon University of Economics were considered to be continuous learning for postgraduate students by using zoom apps for professional master degrees. Therefore, this study investigated mainly the factors influencing adaptation online learning via using zoom application even during the Covid-19 pandemic through TAM Model. The study used the sample (292) students who studied in three programmes offered by Department of Commerce. The findings is that all three quality variables which were instructor characteristics, teaching materials, and learning content design are related to perceived usefulness by the students. The ease of use and usefulness of zoom apps is the influencing factor on students' attitudes towards zoom use. The attitude toward using zoom is the most influence factor on intention to use zoom apps. The findings correspond with the TAM model and provide a practical reference for universities and decision-makers involved in designing online learning platform for implementation.

Key words *: service quality of e-learning, perceived usefulness, perceived ease of use, attitude towards the use of technology, behavioral intention to use Zoom application*

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I. Introduction

Technology has become a vital part of 'human's daily activities. Moreover, it has been incorporated into teaching, learning, and sharing for knowledge and education for everyone nowadays. Many international colleges and universities have been offering online courses as an effective way instead of traditional face-to-face instruction in the recent technology- enhanced learning platform. Using computers and the internet has become an essential role of many daily tasks and transactions in business concerns. Particularly in education, modern technology has offered innovative ways for people to interact, communicate, share information and learn with online education. Online education may be a new domain of learning that combines education with the practice of face-to-face instruction with computer- mediated communication, according to Harasim (1989).

The first COVID-19 case was confirmed in Myanmar on March 23, which led to the closure of schools, colleges and universities. In tertiary education, university examinations have been suspended due to Covid-19 cases officially announced in Myanmar. The State Counselor of Myanmar encouraged that the education of a country should not be stopped and children could lose their passion and motivation for education when they are away from classrooms for a long time. Universities Rector Committees have supported online teaching and digital platforms for the coming academic semester. This has contributed to drastic changes in education, closer to e-learning and digital platforms. Some studies on the perception of students towards online learning and face to face learning have been conducted during COVID-19 pandemic period. Although e-learning continues to immediately take effect, it remains at a challenging stage of growth. On the other hand, developers and providers of online learning platforms need to know the perception and reaction of students on e-learning transformation.

The developers and deliverers of online learning need more understanding of how students perceive and react to elements of online learning, since student perception and attitude is critical to motivation and learning, along with how to apply these approaches most effectively to enhance learning. Therefore, the study focus on factors influencing students' perception toward online learning using zoom application at the Yangon University of Economics (YUEco).

II. Rationale of the Study

COVID 19 is expected to have a long-lasting effect on the education sector during the pandemic period. Owing to the ongoing lockdown across the country and the social distancing standards, the higher education sector has faced its unique challenges. Closures of universities can hamper the provision of economic and social benefits of communities and made stress due to economic uncertainty. The ' 'pandemic's impact on higher education could be much more enduring than currently treated.

The development of Information Technology (IT) has influenced how teaching and learning are becoming effectively and increasingly complex. In order to improve the education system, the teaching and learning approach should be changed with the help of technologies. The learning opportunities can be got for every learner with the help of technology regardless of social distancing. In order to ensure that the education system will build back better and transform the strengthening of the education sector. Long-term challenges and interventions exist to improve the education system's longer-term resilience, although the pandemic presents many threats. The impact of COVID-19 will in the future change education explicitly and indefinitely, with higher education needing to be able to adjust for professional degrees to offer online.

Schools and universities were closed due to the COVID-19 pandemic, and all didactic resources were pushed into the online environment, in an unprecedented attempt to ensure the continuity of education. It may result in a great big difficulty for students to face the barriers of applying jobs to alleviate the economic burden on families. This pandemic will also have negative effects on learning opportunities for students. In the context of the COVID-19 pandemic, of the evidence of person-to-person transmission and the high incidence of infection, the department of Higher Education has adapted a prevention policy to incorporate the closure of educational institutions as a prevention strategy.

The academic board of the Yangon University of Economics was considered to be a relatively cheaper way of education in terms of the lower costs of service and the overall e- learning facility costs. The combination of face-to-face interactive lectures with technology produces a blended learning system and virtual classrooms; this type of learning environment will improve the 'students' learning potential. In a short period of time, Programme Directors of YUEco decide to update and organize an online teaching schedule for the current semester using zoom apps for professional master degrees such as Master of Business Administration, Master of Banking and Finance, Master of Marketing Management, Master of Hospitality and Tourism

Management, Master of Development Studies, Master of Public Administration and Master of Applied Statistics so that students could continuously learn their lesson with online and provide learning opportunities while also engaged in full-time or part-time jobs in their respective fields. Zoom application offers video interactive communication and online chat services through a cloud-based peer-to-peer internet-based platform and is used for teleconferencing, telecommuting, distance learning, and social relations. By signing up and installing the app for free, users can use the Zoom for online courses.

Students believe that the main obstacles to online learning are lack of community, technical challenges and difficulties in understanding instructional tools. . Therefore, it is necessary to understand 'students' perception on online learning using zoom apps and to consider how to provide safe and healthy online environments which are appropriate for academic master programmes and also benchmark undergraduate programmes for learning in COVID-19 pandemic. Effective online learning platforms can be designed to promote 'learner's input on current uses of zoom apps and to introduce a broader education 4.0 in the 21st century. The research question is to how students perceive zoom application in their online learning, and what factors affect their attitude to use zoom apps through e-learning and to explore the intention of students to use e-learning in the future.

III. Literature Review

Davis (1989) introduced the Technology Acceptance Model (TAM). In this study, TAM theory implies to investigate 'students' perception of online learning using Zoom apps. TAM model was an empirically established theory and generally proved to help understand and predict the actions of users towards acceptance and use of information technology (Legris, etal., 2003). It also helped to understand why information technology can be embraced or rejected as the user (Davis, 1989). The model provided the basis for influencing variables on belief, attitude, and intention to use technology.

TAM proposed variables as the basis for proving the influence factors on two key internal beliefs, perceived usefulness (PU) and perceived ease of use (PEU). The model further suggested that these two values influenced the 'user's attitude (AT) towards the technology directly or indirectly and impacts the 'user's behavioral intention to use (IU) the technology, which also influences the final decision to use or not to use. The Technology Acceptance Model (TAM) has been generally applied in explaining IT adoption and usage.

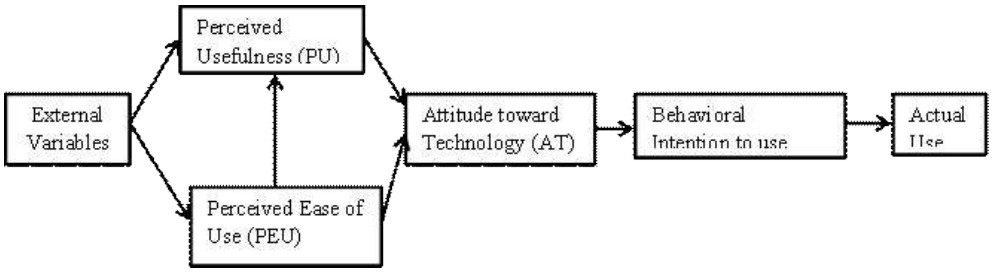

Figure 1. Original Technology Acceptance Model (TAM)

Source: Davis (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology.

Kaynama and Black (2000 created seven dimensions of quality measure in e application: content, access, navigation, design, response, context and personalization for an e-service. Aladwani and Palvia (2002) have also developed an instrument capturing website quality features from the user's perspective, that is, the 25-item instrument tests web quality efficiency in four dimensions namely specific content, content quality, appearance and technical adequacy. In e-learning, Dillon & Gunawardena, (1995) and Webster & Hackley (1997) pointed out that the 'instructors' engagement and capacity are essential factors that influence the 'learners' level of confidence and trust. According to Sun et al., (2008), for e learning, only instructional materials quality mainly impacted on the learners' satisfaction. In the United Kingdom, A conceptual e-learning assessment model was introduced by Ozkan and Koseler (2009) in which there are six variables, namely, supportive issues, instructor attitudes, learner perspective, content quality, service quality, and system quality. Their findings can prove that the proposed model was sufficient for the students' satisfaction on e-learning quality assessment. Moreover, Flow theory was pioneered by Csikszentimihalyi (1975). He explored the role of a specific context rather than individual differences in explaining human motivated behaviors. The scholar academically mentioned that 'flow' as the holistic sensation that people experience when acting with their involvement'.

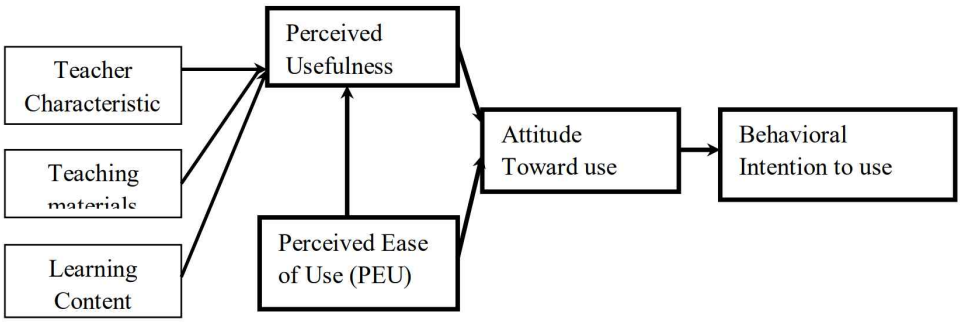

Figure 2. Analytical Frameworks of the Study based on TAM model

Based on the literature reviews, this study defined the conceptual framework required to determine the intention of current learners to use e-learning. The three independent variables, two belief variables, and one dependent variable are the main parts of the proposed model in this study. The indicator used for service quality is composed of three parts; teacher characteristics, teaching materials, and design of learning contents. The characteristics of the instructor were defined as the degree to which teachers are caring, supportive and attentive to students. Teaching materials are defined as the degree to which teaching materials are appropriate for online learning. Design of learning contents is defined as the degree to which learning contents are designed and created to meet the needs of students. Perceived usefulness is the adaptation by the attendant as the e-learning can provide him or her well for improving learning outcomes. Perceived ease of use is the availability of e-learning service for the user with specific online learning service. The dependent variable is the intention to use online learning using zoom. As mentioned above, Figure (2) shows the analytical framework of this study to study the factors influencing the students' attitude toward using zoom apps and to behavior intention to use.

IV. Hypothesis of the Study

According to the analytical framework of the study, the following hypotheses could be tested the factors influencing the students' attitude toward using zoom apps and to behavior intention to use for analysis of the study.

H1: Zoom online learning quality (LQ) affects 'learners' perceived usefulness (PU).

H2: Learners' perceived ease of use (PEU) affects 'learners' perceived usefulness (PU).
H3: Perceived ease of use (PEU) significantly influences the 'students' attitude towards use (AT).
H4: Perceived usefulness (PU) significantly influences the 'students' attitude towards use (AT).
H5: Attitude towards uses (AT) significantly influences the 'students' intention to use (IU)

V. Method and Scope of the Study

The survey was conducted in Yangon University of Economics during June of COVID-19 pandemic 2020. Although YUEco offered eight professional master programmes, the study focused only on the three programmes offered by the Department of Commerce, namely MBF, MMM and MHTM. Three hundred postgraduate students who have been attending the online-learning class participated in this study through a questionnaire survey. Four hundred forty-four questionnaires were distributed to all populations, of these (292) were returned, representing 65% of response rate as sample. The total population was totally (444) students who currently attended in these three programmes, comprised (72) students in MBF 7th Batch, (93) students in MBF 8th Batch, (90) students in MBF Day 3rd Batch, (90) students in MMM 1st Batch, (60) students in MHTM 1st Batch respectively. In order to prove proposed hypotheses and the particular relationship between the variables, the regression method was applied. The questions were divided into five (7) parts: online learning quality, teaching material, learning content, perceived usefulness, perceived ease of use, attitude toward uses of zoom and behavior intention to use. All variables are measured using the five point likert scale with 5 being " strongly agree" and 1 being " strongly disagree".

VI. Analysis and Discussion

Respondents in this study (n=292) were postgraduate students pursuing a professional master degree offered by Yangon University of Economics, which consisted of three major namely Banking and Finance (7th Batch, 8th Batch and Day 2nd, 3rd Batch), Marketing Management (1st Batch), Hospitality and Tourism Management (1st Batch). They were studying blended education learning with Zoom apps for some courses during COVID-19 pandemic period.

1. Reliability Test

According to Cuieford (1965), a value greater than 0.7 of a Cronbach implies high reliability and a value less than 0.35 represents unacceptable reliability. The value between 0.35 and 0.7 of the Cronbach has an acceptable level of reliability. In this analysis, all variables can be considered reliable as their reliability values are within the range of 0.790– 0.927, indicating high acceptable reliability (See in Table 1). The regression model is used for testing the hypotheses.

Table 1. Reliability Analysis

Variable	' 'Cronbach's value	Items
Teacher Characteristic	0.881	6
Teaching Material	0.790	3
Learning Content	0.800	5
Perceived Usefulness	0.891	6
Perceived Ease of Use	0.924	6
Attitude towards Use	0.794	6
Intention to Use	0.854	5

Source: SPSS output, 2020 Survey Data

2. Hypothesis Testing

H1: Zoom online learning quality (LQ) affects 'learners' perceived usefulness (PU).

The relationship between the three application qualities of online learning (instructor characteristics, teaching materials, and learning content design) and perceived usefulness is analyzed with regression coefficient.

Table 2. Reliability Analysis for the relationship between the three application qualities of online learning and perceived usefulness.

Dependent variable (Perceived Usefulness)	Unstandardized Coefficients		Standardized Coefficients	t-test	Sig	VIF
	B	Std. Error	Beta			
Constant	0.244	0.151		1.611	0.108	
Teacher Characteristic	0.267	0.067	0.256***	3.983	0.000	3.719
Teaching Material	0.285	0.054	0.318***	5.314	0.000	3.210

Learning Content	0.383	0.062	0.326***	6.188	0.000	2.497
R2	0.680					
Adj R2	0.676					
F-value	203.707***					
Durbin-Watson	1.955					

Source: SPSS output, 2020 Survey Data
Statistical Significance Indicate *** at the 1% level, ** at the 5% level and * at the 10% level

Reference to Table (2) shown above, the adjusted R square value of the result is 0.676, which suggested that the model explained 67.6% of the variance in perceived usefulness of learners. In addition, the value of Durbin Watson in the Table is 1.955, which suggested that there is evidence of positive correlation and no singularity or multi-collinearity problem as VIF <10. Table (3) provided results from the regression analysis for Hypothesis (1).

The online learning quality of Zoom apps had a significant influence on perceived usefulness at 1% significance level. All predictors are significant in describing the relationships. Instructor characteristics (β = 0.256, $p < 0.001$), teaching materials. (β = 0.318, $p < 0.001$), and learning content (β = 0.326, $p < 0.001$) are positively related to perceived usefulness as hypothesized. Thus, Hypothesis 1 (H1) was supported. Among these qualities, the design of learning content is most important to satisfy perceived usefulness of learners.

H2: Learners' perceived ease of use (PEU) affects 'learners' perceived usefulness (PU).

Hypothesis (2) is tested by analyzing perceived ease of use on perceived usefulness using the zoom apps in online-learning with regression. Table (3) provided results from the regression analysis for H2. The effect of perceived ease of use explains 64.2% of the variance of perceived usefulness by students. As shown in Table (4), perceived ease of use has a significant influence on perceived usefulness using the zoom apps in online-learning. Accordingly, H2 is supported. Perceived ease of use (β = 0.802, $p < 0.001$) is positively related to perceived usefulness as hypothesized.

Table 3. Reliability Analysis for the relationship between 'learners' perceived ease of use (PEU) and their perceived usefulness (PU).

Dependent variable (Perceived Usefulness)	Unstandardized Coefficients		Unstandardized Coefficients	t-test	Sig	VIF
			Beta			

	B	Std. Error				
Constant	0.609	0.140		4.350	0.000	
Perceived Ease of Use	0.803	0.035	0.802***	22.864	0.000	1
R^2	0.643					
Adj R^2	0.642					
F-value	522.742***					
Durbin-Watson	1.914					

Source: SPSS output, 2020 Survey Data

Statistical Significance Indicate *** at the 1% level, ** at the 5% level and * at the 10% level

H3: Perceived ease of use (PEU) significantly influences the 'students' attitude towards use (AT).

H4: Perceived usefulness (PU) significantly influences the 'students' attitude towards use (AT).

H3 and H4 were simultaneously evaluated by regressing both perceived ease of use and perceived usefulness in relation to attitude towards using zoom apps in the e-learning during COVID-19 pandemic. The adjusted R-squared of 0.609 showed that 60.9% of the data match the regression model. Table (4) shows the findings of the regression analysis for both hypotheses.

Table 4. Reliability Analysis for the relationship between perceived ease of use (PEU) and perceived usefulness (PU) with the 'students' attitude towards use (AT).

Dependent variable (Attitude towards Use of Technology)	Unstandardized Coefficients		Unstandardized Coefficients	t-test	Sig	VIF
	B	Std. Error	Beta			
Constant	1.015	.134		7.557	.000	
Perceived Usefulness	0.344	.055	0.387***	6.298	.000	2.803
Perceived Ease of Use	0.389	.055	0.437***	7.115	.000	2.803
R2	0.611					
Adj R2	0.609					
F-value	227.225***					
Durbin-Watson	1.866					

Source: SPSS output, 2020 Survey Data

Statistical Significance Indicate *** at the 1% level, ** at the 5% level and * at the 10% level

Perceived ease of use ($\beta = 0.437$, $p < 0.001$) is related to attitude toward using

zoom apps in online learning at a significance level of 0.05, providing support for hypothesis 3. Perceived usefulness (β = 0.387 p < 0.001) is proved to have a positive influence on attitude towards use of zoom apps, confirming hypothesis 4.Both perceived ease of use and perceived usefulness have a significant relationship on attitude toward using zoom apps.

H5: Attitude towards uses (AT) significantly influences intention to use (IU)

In order to test H5, a regression analysis was carried out, with an attitude towards uses of technology as an independent variable and intention to use as the dependent variable. Table (5) describes the regression results used for testing H5. Adjusted R^2 0.643 expressed that attitude towards uses technology explained 64.3%of variances on the intention to use zoom apps. In the above Table, attitude towards the uses of technology had a significant impact on the intention to use zoom apps in their learning (β = .733; p < 0.001). Thus, H5 was also supported.

Table 5. Reliability Analysis for the relationship Attitude towards Uses (AT) and intention to use (IU) of Learners on Zoom apps

Dependent variable (Intentionto Use (IU))	Unstandardized Coefficients		Unstandardized Coefficients	t test	Sig	VI F
	B	Std. Error	Beta			
Constant	.584	.175		3.336	.001	
Attitude Towards Uses (AT)	.827	.045	0.733***	18.33 5	.000	1
R2	0.537					
Adj R2	0.643					
F-value	336.167***					
Durbin-Watson	1.831					

Source: SPSS output, 2020 Survey Data
Statistical Significance Indicate *** at the 1% level, ** at the 5% level and * at the 10% level

Confirming to TAM model researched by Davis, 1989, perceived usefulness had a significant effect on the intention to use, with p < 0.001. And also, both perceived usefulness and perceived ease of use had a significant effect on attitude toward using. Attitude towards uses of technology is related to intention to use zoom apps in their learning during COVID-19 pandemic period.

VII. Findings and Discussion of the Study

Based on data surveyed from 292 students, the use of TAM to clarify 'students' acceptance of online learning technology by students has been evaluated. This research examined the relationship between the three quality constructs of online learning apps (instructor characteristics, teaching materials, and design of learning contents) and the two belief constructs (perceived usefulness and perceived ease of use). And then, this research also examined the relationship between the belief constructs (perceived usefulness and perceived ease of use) and attitude towards the use of technology as zoom apps. Finally, it studied the relationship attitude towards uses of technology and intention to use zoom apps in their learning.

The results demonstrated that the characteristics of the instructor, the teaching materials and the design of the learning contents are positively related to perceived usefulness. They have a positive relationship with the indicator of perceived usefulness, especially with the design of contents with a strong relationship. Based on these results, the usefulness of e-learning was mainly derived from the service quality of e-learning. These results showed that the learners tend to seem more useful towards e-learning as the service quality of e-learning improves. In order to draw more interest from the learner, the provider can design the learning content to attract more attention. Online learning platforms should integrate the use of attractive content design and virtual learning environments. Information can be disseminated to multiple learners at the same time via the internet. The attention of learners is drawn to application quality so that 'instructor's characteristics, teaching material and content of learning can be supported to attain use via usefulness of the application. The academic board needs to provide sufficient resources to instructors; the innovative use of the educational methodology in different ways is required. As the another finding, the more positive the perceived ease of use and perceived usefulness of the system, the higher the probability of actually using the zoom apps. The student will accept the usefulness of zoom when the apps are easy to understand and use. Developing a "guide for the application user" for students and the benefits from using/reading information on zoom should be published and communicated by information center of YUEco. As technology improves, the university should provide the information online about the usefulness in their learning with efficient costs by taking advantage of advanced technologies, resulting in greater 'learners' adoption.

Perceived usefulness and ease of use on zoom apps have a positive effect on the attitude towards using Zoom apps. The behavioral intention is found to be influenced by the attitude towards zoom use. The higher behavioral intention can be influenced

by attitude among student. The findings of this results indicated that TAM can be used to explain the students' adoption of e-learning using the zoom app.

VIII. Conclusion of the Study

According to results of testing hypotheses, the findings implied that the characteristics of the teacher (instructor), teaching materials and learning content are the indicators of the perceived usefulness of online learning using zoom, and perceived usefulness and ease of use in zoom app are the predictors of the attitude towards uses of zoom app in e-learning. The attitude towards using the technology and application determines the learner intention to use zoom apps in their learning process. These findings also have strong references in earlier studies reported in other countries about the TAM model of the 'learners' perceptions and behaviors to e-learning. Therefore, this study contributes to the use of a preeminent intention-based model in an educational context, which differs considerably from the business organizations ordinarily studied in previous research.

In the side of the managerial standing point, the results of this study confirmed that positive perception of the 'technology's usefulness is crucial in order to promote individual intention to use technology, while the 'students' attitude toward using the technology may be equally significant. The YUEco's information center, needs to educate mainly about how technology can help enhance the efficiency and effectiveness of 'students' learning process rather than on the procedures of the actual use of the technology. Zoom application has the favor of application in an e-learning system. The agreement about learning applications should have for providing quality inconsistency. That systematic use of application enhanced better achievement in e-learning services. Firstly, the YUEco should educate and explain the quality of online application to students to perceive that Zoom apps or online apps is the ease of use and point out usefulness for getting learning outcomes. The introduction of applications in the education sector has led to the introduction of new learning methods. In conclusion, the TAM model can serve the purpose of evaluating and predicting technology acceptability.

Students are more inspired to use a mobile phone for any reason in this changing world. The student can access any information from anywhere with fingertips on screen in a second. This eliminates the chance of social contact of learning in the classroom, visiting a library and searching for the data. On the other hand, learning is a continuous process, and the emphasis has moved to eLearning. Students may learn at their convenient time and take their time with growing

technological skills because of the mobile phones and the various feature-oriented applications, In conclusion, the adoption of online learning will continue to be necessary for post-pandemic, and a shift of learning style from traditional to virtual would impact the worldwide education sector. The students prefer IT tools for virtual learning very intuitively, and are typically comfortable with the use of computers and the internet; they also expect to use distance learning often during the semester. Therefore, the students would like to adopt education. If they assume, the online application seems to be easy and useful for their learning. In the event of COVID-19 situation, higher education institutions and universities should continue online learning as this research is a valuable contribution to policy making.

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Volunteer Management, Volunteer Motivation and Volunteer Retention in Myanmar: Case Study on "We Love Yangon" Volunteer Group

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ABSTRACT : This research is about the linkage of volunteer management and volunteer motivation. Analysis focuses on the effect of volunteer management on volunteer motivation to enhance volunteer retention in Yangon. This is the case study on "We Love Yangon" volunteer group. Data from 199 members of this volunteer group are analysed. From analysis, it can be concluded that volunteer management consisting planning, recruiting, and recognition are effective for volunteers' motivation. Their motivation is also positively significantly affecting on their retention at this volunteer group. The volunteers believed that the executive committee members of "We Love Yangon" are managing the donation in-cash and in-kind systematically without fraud and error. They are good at planning the volunteering assignments at the right places at the right time with necessary resources, also good at recruiting volunteers from various sources through effective information sharing, and also good at appraising the performance and recognizing the outstanding contribution of volunteers. Due to such believes and trust on management, volunteers are motivating at this group. Even though they are facing many constraints, threats and difficulties to sustain their effort to volunteering; their desire is strong to continue their volunteering till their city (Yangon) is free from the COVID 19 pandemic. Thus, to solve the social issues of country effectively, and to upgrade the cities' performance in various aspects (e.g., esthetic quality, drainage system); the volunteering associations like "We Love Yangon" should be organized systematically and legally with proper volunteer management of executive committee members.se.

Key words *: Volunteer management, Volunteer motivation, Volunteer retention*

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I. Introduction

Myanmar has been suffering from COVID 19 pandemic effect since March 2020. Its capital city, Yangon has also been suffering from this horrible effect. Thus, many Yangon people need the support for their health and social wellbeing. Although the government has been providing many support, planning many projects and implementing various plans; its capability is limited. Thus, the support from volunteer groups and associations are necessary.

Not only for this health issue but also for other issues such as natural disaster and safety issue, various volunteer teams and groups are formed. To support to government and to help Yangon people, many volunteers have been trying hard. They have been contributing from many aspects. They sacrifice their personal benefits such as income and businesses. Even they neglect the adverse effect on their health and their families' safety.

Although the volunteers are active, they will not be motivated without proper management of volunteer committee management. If the management of the volunteer committees has been practicing proper and systematic practices, volunteers will be motivated within many difficulties and constraints. Their motivation will lead to their retention at the volunteer tasks.

1. Rationale of the Study

In Myanmar, recently, volunteer teams and associations have been playing at the crucial role for Myanmar people's safety and security due to health and economic matters. Since the commencement of COVID 19 in Myanmar, various volunteer teams have been formed. Among those teams, "We Love Yangon" is the largest and strongest team supporting not only to people's wellbeing and city's development.

We Love Yangon team was formed on 5 March 2020 in Yangon. It has now 4000 volunteer members. Although its major objective is to collaborate with Yangon City Development Committee (YCDC) for Yangon City's development, since the COVID 19 pandemic effect has been rising terribly in Yangon, currently, its contribution is largely to help Yangon people who are suffering from the COVID 19 effect.

Since it is not sure when the COVID 19 effect will stop, the motivation of volunteers must be emphasized, and their retention is necessary for Yangon. The major driving force for volunteer motivation would be the volunteer management practices of leaders of volunteer associations. In "We Love Yangon", its volunteer management will be crucial for volunteer motivation. This motivation will be required for volunteer retention. This paper analyse on the effect of volunteer management on

volunteer motivation to enhance volunteer retention by focusing on the case of "We Love Yangon" Group.

2. Research Questions

(1) How does the volunteer management affect on volunteer motivation in "We Love Yangon"?

(2) How does volunteer motivation affect on volunteer retention "We Love Yangon"?

3. Research Objectives

(1) To analyse the effect of volunteer management practices on volunteer motivation at "We Love Yangon" volunteer group.

(2) To analyse the effect of volunteer motivation on volunteer retention at "We Love Yangon" volunteer group.

4. Research Design

(a) Sampling Procedure

There are 30 members of management teams and 4000 volunteers at "We Love Yangon" volunteer group. This study focuses only on the perception of volunteer members. Thus, the population of this study is 4000. To identify the sample size, the formula of (Yamane, 1967) is used.

$$\text{Formula: } \frac{N}{1+N \times e^2} = \frac{4000}{1+4000 \times .01^2} = 363 \sim 360$$ (Here; Margin of error is 0.05)

In this study, as the sample, the 360 members are randomly selected from 4000 volunteer members of "We Love Yangon" volunteer group.

(b) Data Collection

Data from 360 sampled volunteers are gathered during 19th September 2020 and 24th September 2020. Copied questionnaires are distributed to them through one of the executive committee members of We Love Yangon group. Complete responses are received from only 199 respondents. Thus, the response rate is 55.28%. The demographic factors of respondents are shown in the Appendix.

(c) Questionnaire Design

The questionnaire is with structured form. It includes three main sections: section (I) includes question statements for volunteer management, section (II) is to collect data about volunteer motivation, and section (III) is about volunteer retention. Volunteer management is approached with 4 elements: planning, recruiting, training and support, and recognition. Section (II) is volunteer motivation, which is only variable consisting 13 question statements. Section (III) is to measure the volunteer retention with 5 question statements. All question statements are in scale type: from totally disagree, through disagree, neutral, and agree to totally agree.

(d) Data Analysis

The volunteer management, volunteer motivation and volunteer retention variables are individually descriptively analysed with calculation of mean values. Analytical approach is applied to test the effect of volunteer management on volunteer motivation, and the influence of volunteer motivation on volunteer retention.

II. Literature Review

Literature review consists of two parts: the first part focuses on concepts of the variables: volunteer management, volunteer motivation and volunteer retention; the second part is review on previous research papers related to volunteer management.

1. Volunteer Management

Volunteer management is the prcatice of managing the volunteer work for effective contribution of volunteer to volunteer group's mission. There are four elements of volunteer management: planning, recruitment, training and support, and recognition.

(a) Planning

Planning is the management's practice to set goals and to show ways to reach these goals. According to Tedrick & Henderson (1989) the planning practice of volunteer management is setting strategies, objectives, and guiding the volunteers to walk on the right ways for effective contribution to community. With proper planning, volunteers can follow the standards of the volunteer team and their actions will be compliance with the team's values and objectives (Tedrick & Henderson, 1989).

(b) Recruiting

Recruitment of volunteers in volunteer team is very important for achievement of the team's mission. Literature shows that volunteer teams may face the various problems when recruiting (Sozanska, Tosner, & Fric, 2004). The volunteer work is for community, not for personal interest. In general, it seems that management should accept every volunteer. However, management needs to set the rules and criteria for recruiting volunteers. If they accept every volunteer, they may do negligent recruiting which is hiring the volunteers who have personal objectives and who have intentions to take advantage over volunteering for their personal goals.

Volunteers must have required skills, knowledge, and experience to contribute effectively; at least they must have willingness to learn for effective contribution (McBride & Lough, 2010). Recruiting weak volunteers with bad attitude will lead to the large variance from team's mission (Smith, 1998).

Thus, good management must screen the applicants to recruit competent, able and committed volunteers (Brewis, Hill, & Stevens, 2010) and also must build network to find good sources to raise the awareness and application rate from interesting applicants (Handy & Cnan, 2007). Information sharing is very effective to get the awareness from people to involve in volunteering work. Thus, management should also be hood at information management for recruitment.

(c) Training and Support

Volunteer team management's responsibility is to provide required training to their members (Hager & Brudney, 2004). They also need to try for volunteer cooperation of outsiders to provide relevant training to volunteers (Boyd, 2003). If the management of volunteer organization provide relevant training and support to do volunteering tasks without troublesome, volunteers will decide to put more effort and to devote more time for volunteering work (Taylor & AcGraw, 2006).

(d) Recognition

Performance appraisal (follow up to the performance of volunteers) and recognizing the outstanding volunteers are also crucial tasks of management of volunteer team (Hager & Brudney, 2004). If management of volunteer team conduct the appraisal on performance of individual volunteers, they can find the outstanding volunteers and they can also find the unethical or incapable volunteers. Through this appraising process, they can observe the best practices and standards for improvement of team performance (Sozanska et al. 2004). Volunteer motivation can be upgraded with proper and right recognition of management (Millette & Gagne, 2008). Although the volunteers originally are not expecting the returns from their

volunteer work, the recognition at public may be very encouraging on them to continue good deeds.

2. Volunteer Motivation

Motivation is doing actively at work, and volunteer motivation is volunteer's feeling of enthusiasm and passion at their work to contribute to community (Finkelstein, 2008). Thus, for effective contribution, effective cooperation and good manner of volunteers, their motivation is very important. This motivation will lead to the retention at volunteer work (Galindo-Kuhn & Guzley, 2002).

If the volunteer are motivating at their volunteer organization, they will be feeling that they are receiving effective support from management, their peers are supporting to them, getting relevant information in time, getting empowerment, and they will be devoting more time for volunteering work.

3. Volunteer Retention

Many researchers conducted the research work on volunteer retention (Mesch, Tschirhart, Perry, & Lee, 1998). In many countries, especially in developing and less developed countries, volunteer retention must be focused due to the need of their contribution for community during this turbulent time. In many countries, citizens are facing various social and economic problems. These problems cannot be cured with government's provision alone. The support from volunteer organizations is necessary (Hoye, Cuskelly, Taylor, & Darcy, 2008; Hager & Brudney, 2004; Cuskelly, 2004).

Many research found that the problem of high turnover rate of volunteer (high drop out rate of volunteer) at volunteer teams (Skoglund, 2006). There may be many barriers to volunteer retention: over workload, insufficient support from management, ineffective recruiting practices, lack of information sharing, motivation by themselves and so on (Perry, 2000). However, since volunteers decided by themselves freely to come to volunteer organizations, other factors except management practices (planning, recruiting, training and support and recognition) would be minor factors (Cuskelly, Taylor, Hoye, & Darcy, 2006). .

The impact of volunteer management on volunteer satisfaction and motivation to enhance volunteer retention is presented by (Mutawa, 2015). The previous research model is shown in Figure (1).

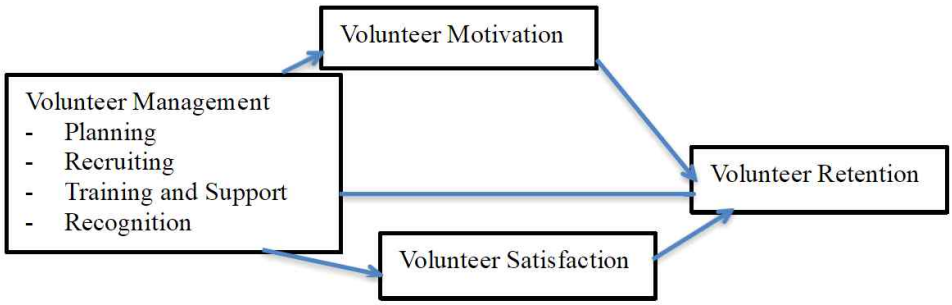

Figure 1. Previous Research Model

Source: Mutawa (2015)

The previous researcher presented that there is no direct effect of volunteer management on volunteer retention. Volunteer motivation has the mediating effect on relationship between volunteer management and volunteer retention. However, volunteer satisfaction has no mediating effect on this relationship.

5. Conceptual Framework

The conceptual framework of the study is shown in Figure (2).

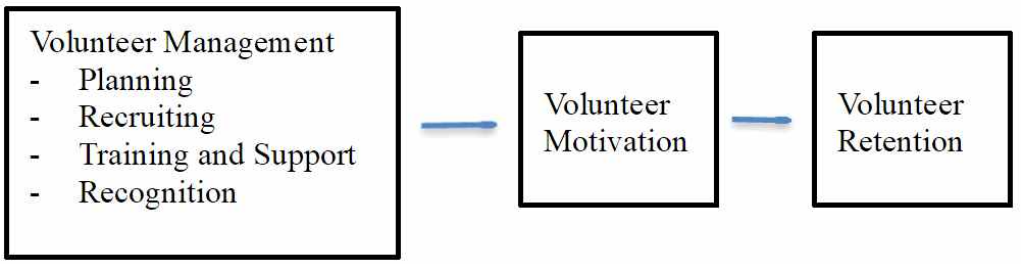

Figure 2. Conceptual Framework of the Study

Source: Adapted to the Model of Mutawa (2015)

This research analyses on the impact of volunteer management practices (planning, recruiting, training and support, and recognition) on volunteer motivation. The research also tests the relationship between volunteer motivation and volunteer retention. This conceptual framework is developed by referring the previous research "Impact of volunteer management practice on volunteer motivation and satisfaction to

enhance volunteer retention" by Omar Al Mutawa (2015) which is the graduation thesis for Degree of Doctor of Philosophy of Brunel Business School, Brunel University.

In this research, the satisfaction of volunteers is excluded because during this pandemic time, it is rare for volunteers to be satisfied with their work. They may be motivated with their feeling of meaningfulness and firsthand effect on needy people. However, this motivation may be largely rely on volunteer management practices of group founders and leaders. They may decide not to give up their volunteering due to their motivation.

III. Findings and Discussions

Before conducting the descriptive analysis and multiple linear regression analysis, the data consistency is checked with reliability test. According to the reliability test results, all variables of this research have no data consistency problem: all Cronbach's Alpha values are greater than 0.7.

1. Findings from Descriptive Analysis

The We Love Yangon members' perception on the volunteer management practices of their leaders is shown in Table (1).

Table 1. Volunteer Management of We Love Yangon

Sr. No.	Factors	Mean Value
1	Planning	4.5
2	Recruiting	5.0
3	Training and Support	4.7
4	Recognition	4.7

Source: Survey Data, September 2020

From descriptive analysis, most of the volunteers perceived that effective leaders who are practicing effective planning, recruiting, training and support and recognition over them lead the We Love Yangon group. All mean values are near to 5.0. Data are collected with 5 point scale. Thus, the level of goodness of volunteer management is high at all functions: planning, recruiting, training and support and recognition.

From in-depth personal interview with one of the executive committee (EC) members, the EC members set the job description and assign tasks to volunteers

regarding their background experience and skills, they encourage and motivate the volunteers to put regular effort, they develop the volunteer database, they provide full delegation to volunteers, they advertise the recruitment information at various effective sources (e.g., face book pages), they instructed the volunteers to follow the code of conducts of the team, they usually do good orientation when the new volunteer incoming, they provide relevant training for elimination of error and for effective support to community, they praise committed volunteers and they present the outstanding volunteers at the public, and they provide special recognition awards. However, they appraise the performance and behavior of volunteers. They immediately take actions over unethical volunteers.

Table 2. Volunteer Motivation and Volunteer Retention

Sr. No.	Factors	Mean Value
1	Volunteer motivation	4.02
2	Volunteer retention	4.19

Source: Survey Data, September 2020

From mean value calculated for volunteer motivation, volunteers are highly motivated at working for We Love Yangon volunteer group. According to mean value of volunteer retention, they also have high willingness to continue the volunteer work even though it is very difficult for them to do tasks regularly for a long time.

The volunteers of "We Love Yangon" volunteer group are really hesitate to give up the volunteering work (e.g., volunteering for COVID 19 pandemic affected patients and their families) even though they know that they have high probability to get the adverse effect on their health, they have to sacrifice their quality of life with their families, they have to neglect their business opportunities, they have to give up their responsibilities for their family members. They value more their volunteering work, they are sure that they are doing meaningful work, they love their city and their country, they are happy with receiving new experience and new friends, they are proud of their contribution, and they understand that their contributions are really needed by many people.

2. Findings from Multiple Linear Regression Analysis

To explore the influence of volunteer management on volunteer motivation, the multiple linear regression analysis is conducted with volunteer motivation, as dependent variable and volunteer management practices as independent variables.

Table 3. Effect of Volunteer Management on Volunteer Motivation

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	VIF
	B	Std. Error				
Constant	1.136	1.072		1.060	0.095	
Planning	0.535**	0.206	0.373	2.597	0.013	1.009
Recruiting	0.233***	0.112	0.101	2.080	0.001	1.009
Training and Support	0.421	0.237	0.303	1.776	0.153	1.109
Recognition	0.037**	0.182	0.030	0.206	0.038	1.009
R						0.577
R Square						0.442
F Value						23.473**

Source: Survey Data, 2020
*** Significant at 1% Level
** Significant at 5% level

From statistical analysis, it can be seen that the volunteer management practices such as planning, recruiting and recognition are positively significantly affecting on volunteer motivation at We Love Yangon.

Volunteers are motivating at "We Love Yangon" because they believe that the EC members are managing the donations in cash and in-kind systematically. The EC members organized six teams: donation management team, hospital support management team, accounting and finance management team, volunteering tasks management team, general management team, and material management team.

The EC members' strict rule is to avoid the conflict of interest (Example, the materials needed for community must not be bought from EC members' businesses, and donation cash and materials must not be used for food and other things required for volunteers. Moreover, EC members and volunteers must not do directly or indirectly the political matters by taking advantage over volunteering.

For recruiting, EC members accept the application of volunteers from various backgrounds. Since, at recent time, Yangon city needs many volunteers; the management's effective network, their background experiences, their commitment and their effective information sharing are crucial for supplying sufficient number of volunteers at every needy centers (quarantine centers and hospitals).

For training and support, at present, there is no time for arrangements of training to volunteers. Volunteers can get necessary support for eating, living, and doing volunteering tasks although they cannot get the training support during this COVID 19 second wave period.

EC members are cooperating with other associations such as Association of Youths' Affairs and Yangon City Development Council. Government also recognized the contribution of "We Love Yangon" group. Thus, EC members can recognize the outstanding volunteers at the public. Various organizations and companies appreciate the recommendations of "We Love Yangon" EC members for volunteering work of volunteers. Thus, the recognition of management teams is the motivating factor for the volunteers. To test the effect of volunteer motivation on volunteer retention at "We Love Yangon" group, the simple linear regression method is applied. The results are shown in Table (4).

Table 4. Effect of Volunteer Motivation on Volunteer Retention

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	VIF
	B	Std. Error				
Constant	1.336	1.172		1.140	0.055	
Volunteer Motivation	0.335**	0.106	0.373	3.160	0.013	1.000
R						0.611
R Square						0.542
F Value						3.493**

Source: Survey Data, 2020 **
Significant at 5% level

As shown in Table (4), most of the volunteers will continue their volunteer work due to their motivation at We Love Yangon group. According to the in-depth personal interview with one of the EC members of "We Love Yangon" group, about 70 % of volunteers and EC members have strong intention to devote their time for volunteering work as the life long contribution. Basically, they are thinking about the probability of adverse effect on their health and quality of life. However, they understand about the country, particularly their city – Yangon's needs on their contribution. They know that, without their contribution, government may be difficult to rescue the city from this COVID 19 pandemic. They are also motivating at this volunteering work, and because of this motivation, they will stay at "We Love Yangon" till this pandemic is over.

IV. Conclusion

From this research, it is found that the management practices of We Love

Yangon group's top-level management are effective. The volunteers are motivating at their work due to effective planning, recruiting and recognition practices of management. The volunteers' retention at We Love Yangon is depending on the volunteers' motivation. Within the short period of time (7 months from March 2020 to September 2020), "We Love Yangon" volunteering group's momentum of contribution to Yangon City's people, particularly to needy people due to economic issue and health issue, become very obvious. Even the government recognized the role of this group in implementing the project of fighting to COVID 19 pandemic effect on Yangon City. Findings from analysis on data collected from 199 volunteers of this group pointed out that the volunteer management of EC members of "We Love Yangon" group is effective to motivate the volunteers. Volunteers appreciate management's practices of planning, recruiting, and recognition; and due to such appreciation they are motivating at this group. They will be continuing the volunteering work till the Yangon City people do not need their support.

V. Suggestions

To solve the social issues of country effectively, and to upgrade the cities' performance in various aspects such as esthetic quality, drainage system, waste water and sold waste management, and so on; the volunteering associations like "We Love Yangon" should be organized systematically and legally not only in Yangon but also in other cities. If executive committee members with proper volunteer management practices manage each volunteering association, volunteers will be motivated to contribute effectively to improvement of city performance and to well-being of city people. Government organizations like Yangon City Development Committee (YCDC) also need to collaborate with such volunteer associations to implement development projects jointly.

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Appendix

Table 5. Demographic Characteristics of Respondents

Particular		No. of Respondents	Percentage
Gender	Male	120	60
	Female	79	40
Marital Status	Single	105	53
	Married	94	47
Age	< 20	22	11
	20 - 30	41	21
	30 - 40	85	43
	40 - 50	37	18
	> 50	14	7

Source: Survey Data, 2020

Analyzing the Process of Urbanization in Myanmar

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ABSTRACT : This study explores the urbanization process in Myanmar by applying two approaches: demographic analysis and spatial analysis. According to demographic analysis the role of rural-urban migration has been a main contributor to urbanization in Myanmar since the time when the urbanization process is initiated. According to the spatial analysis, the spatially referenced variables of urbanization indexes in Myanmar have positive spatial autocorrelation. Therefore this study suggests that there is positive relationship between the urbanization index at one district and the urbanization indexes at its neighboring districts and this relationship attracts further investigation in order to understand the reasons behind the observed spatial variation. Moreover, the area of Yangon has the high-density cluster of urban share per the NTL index.

Key words *: Urbanization, migration, population growth, economic growth*

I. Introduction

Urbanization is the process in which settlement of people, firms and other activities grow in the area named urban during a particular period of time. Globally urban population has grown rapidly from 764 million in 1950 to 3.9 billion in 2014 and it is expected to grow 6 billion by 2045. The most urbanized regions of the world can be found in the most developed regions. In contrast, the least urbanized regions of the world are found in the least developed regions (United Nations, 2014) [1)]. Rapid urbanization in Asia can be considered as a key driver of dynamic economic

1) United Nations, Department of Economic and Social Affairs, "2014 revision of the world urbanization prospects".

growth and poverty reduction because East Asia's urban population has contributed 92 percent to its wealth, with South East Asia at 77 per cent and South Asia at 75 per cent (ADB, 2008). Similarly, ASEAN countries experience economic growth, as their urbanization levels increase.

Generally, in ASEAN the main driving forces of urbanization are foreign direct investment and participation in global value chains. Because of these forces the economy has shifted from an agriculture based economy to an industry-based and service-based economy. Besides, these forces favor coastal cities of the region. If urbanization is caused by migration from rural to urban areas then it can increase income of rural households with migrants through remittances (Stark and Taylor, 1991).

Myanmar has several interesting cases to examine the effect of urbanization. First of all, together with structural transformation, Myanmar has great potential for growth due to its strategic location and its rich natural resources. Over the past decade economic performance in Myanmar improved steadily. Although both rural and urban experienced declining in poverty, the more rapid poverty decline was in urban relative to that in rural (World Bank, 2019). These differences in rates of poverty decline among rural and urban is reflected in differences in sectoral growth rates, implying that there is a more rapid rate of growth in urban activities than that in the rural activities during the same time. Second is that Myanmar is still considered as an agrarian society and as being at an early stage of urbanization with approximately 30 percent of its population residing in cities in 2017. Although its level of urbanization is higher than that of Cambodia (20 percent), it is below that of Lao PDR (38 percent) and Vietnam (33 percent)[2]. Although its annual urban population growth rate (1.7 percent in 2017) is lower than that of other countries in the region, it is expected to continue to urbanize together with economic growth.[3] In these contexts, a study on urbanization will be important for Myanmar. Therefore this study tries to understand the dynamics of urbanization focusing on how rural and urban population change in order to prove that migration is an important factor in urbanization in Myanmar. After that this study tries to answer whether the degree of urbanization in one district is related to the degree of urbanization in its neighboring districts. In order to analyze dynamics of urbanization, the key data sets used in this study are Myanmar Population and Housing Census in 2014, Nighttime

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https://www.un.org/en/development/desa/publications/2014-revision-world-urbanization-prospects.html , accessed on 6 January 2018

2) United Nations Department of Economic and Social Affairs/Population Division (2015). World Urbanization Prospects : The 2014 Revision

3) The World Bank (June 6, 2019), Myamar's Urbanization: Creating Opportunities for All, Full Report.

Lights and Open Street Map data files.

This paper organized five sections. The next section overviews the related literature. The third section presents the data set applied in this study. Urbanization process in Myanmar is discussed in fourth section. Finally, this paper is concluded in fifth section.

II. Literature Review

According to demographers, urbanization is defined as the increasing share of population residing in urban areas (Poston and Bouvier, 2010). Generally the total population is growing in most urbanizing countries and the share of urban population is able to distinguish between the result of urbanization and the result of total population growth. If urban growth is not due to natural population growth, then rural-urban migration becomes a key factor in urbanization (Tacoli, C. et al., 2015). If fertility is decline and motility reaches at lowest level, migration becomes an important factor to determine population change.

In recent decade, economic benefits of urbanization are widely recognized through a strong and persistent relationship between urbanization and economic growth (Martinez-V, J. et al 2009; Glaeser, 2011; Krugman, 2011; Tacoli, C., 2015). In urban economics it has been explained why urbanization would be expected to have economic benefits. Even though urbanization can cause both costs and benefits, economic growth is difficult to sustain without urbanization (World Bank 2009). Comparing the evidences between in high-income countries and low-income countries, Turok and McGranahan (2013) propose that larger urban settlements can support more to productivity than the smaller ones in both high and low income countries but the stronger evidence is in high-income countries. Mostly, cities which have been already engines of economic growth of a country are connected in order to be economically efficient (Srivastava, 2011).

III. Date

Studies on urbanization have a common problem of insufficient data to get disaggregated urban level. Recently, for Myanmar a number of good data sets can be available to utilize for the studies of urbanization process. Among these data sets, this study relies on the data from Myanmar Population and Housing Census in 2014, Nighttime lights (DMSP 1992-2013)[4] and Open Street Map (OSM)[5] data. In order to

understand the dynamics of urbanization, historical demographic data are applied from Myanmar Statistical Yearbook prepared by Central Statistical Organization of Myanmar and data from World Bank Group.

The indicators of urbanization used in this study are urban share, nighttime light index per squared kilometer and building index per squared kilometer. The first indicator of urbanization, share of urban population, can be obtained from Myanmar Population and Housing Census in 2014. This census provides key demographic and housing indicators and fully represent down to the ward level. According to 2014 census, total population in Myanmar is 50.1 million, among them 14.9 million (30 percent of total population) reside in urban area. Applying these data, urban population share at district level can be seen in Figure 3.1. As seen in figure, among all districts Yangon East and Yangon West have the largest urban population share followed by Mandalay.

In order to complement census-based urbanization measure, this study applies two types of digital satellite imagery data obtained from nighttime lights (NTL) dataset and the Open Street Map (OSM) dataset. Historically, NTL, which measures the amount of human light activity captured by satellites, has been used to measure the distribution of human settlements and the urban growth by mapping night time sky brightness. Firstly, raster data type of NTL for the study area is extracted from annual DMSP/OLS images. After that the computed original value of minimum, mean, maximum, sum, and etc. of annual DMSP/OLS images from 1993 to 2013 are obtained according to the attribute table and zonal statistic operation. Averaging sum of night light brightness from 2004 to 2013, NTL index of urbanization applied in this paper is calculated as follow.

$$NTL \in dex = avg(NTl_{04-13}) / Area_d$$

Where, $\mathrm{avg(NTl_{04-13})}$ is average value of sum of night light brightness from 2004 to 2013 and is district area in squared kilometer.

Figure 2 shows that the original average value of sum of night light brightness from 2004 to 2013 and computed night light index for urbanization at district level. It can be seen that while original values of average night light brightness contradict the census-based urbanization index, the calculated NTL index is consistent with the value of urban share. And also the largest NTL indexes are found in West Yangon, East Yangon and Mandalay as in census-based urbanization index.

The second free data of high resolution and accuracy used in this study can be

4) Dataset freely obtained from Defense Meteorological Satellite Program-Operational Linescan System (DMSP/OLS) nighttime imageries

5) Open Street Map dataset can be freely downloaded from different websites and the data model can be converted into popular data formats like shapefiles.

obtained from Open Street Map (OSM) dataset. This dataset is also global and up-to-date and contains both vector and raster format. Moreover, the resolution and accuracy are sufficient for most applications. Many studies have proposed that the OSM dataset can be applied for deriving land use and land cover information on regional scale (Talen, 2003; Bhatti & Tripathi, 2014; Brinkhoff, T., 2016). Although there are many sources for built-up areas in the OSM dataset, this study applies only OSM Buildings[6] because buildings can be considered for deriving built-up and urban areas (Brinkhoff, T., 2016). Applying Geographic Information System, QGIS and GeoDa, free and open-source spatial software and shapefiles data format of OSM Buildings data, building index for urbanization at district level is calculated as below.

$$Building \in dex = Buildings / Area_d$$

Where means total number of buildings in each district, and is area of representative district in squared-kilometer.

Figure 1. Urban Population Share by District

6) Custom data acquired via website : https://download.geofabrik.de/asia/myanmar.html?fbclid=IwAR2bvcj_hVsLwh4Cw4FVYFGoymK7TusFpq0Z6FuEODYgVcML39qJJJ3d_aQ

Figure 3 shows that the original OSM Buildings data and computed building index for urbanization at district level. As in NTL index, original values from OSM-Buildings data contradict the census-based urbanization index and the calculated building index is consistent with the value of urban share. The three largest value of building index are found in West Yangon, East Yangon and Mandalay as in census-based urban share of population.

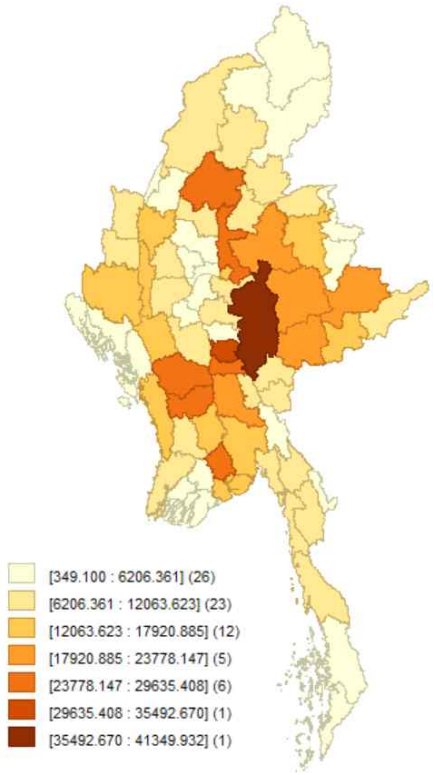


Figure 2a
Original Average Value of Sum of NTL Index (2004-2013)

Figure 2b
Calculated NTL Index per Squared Kilometer

Figure 3a
Original Value of Building Index from OSM Buildings Data

Figure 3b
Calculated Value of Building Index per squared kilometer

Table 1. Correlation Matrix for Urban Share, Building Index and NTL index

	Urban share	Building index	NTL index
Urban share	1.0000	0.8127	0.7455
Building index	0.8127	1.0000	0.9217
NTL index	0.7455	0.9217	1.0000

Source: Owned calculation

Since there are similar features of observations for urban share, building index and NTL index, it can be suggested that building and NTL index can be applied as a proxy for urbanization in Myanmar. Moreover, the results in Table 3.1 show high correlation between urban share and NTL index with the correlation coefficient of 0.7455 and high correlation of urban share and building index with 0.8127. According to these results, it can also be suggested that Building and NTL indexes can be used as the proxies of the degree urbanization.

IV. Analysis of Urbanization process in Myanmar

1. Demographic Analysis

Taking the meaning of urbanization as the process of transition from a rural to a more urban society, and an increasing proportion of total population residing in a town or city, it can be said that urbanization in Myanmar has been increased. As discuss in previous section, urbanization is a rise in the proportion of total population living in urban area. Therefore urbanization depends on both urban growth and rural growth. The simplest way to analyze the urbanization in Myanmar is to apply a single demographic indicator that is the percentage of total population in urban. Therefore, dynamic urbanization process can be evolved by two main factors, (1) rural-urban differentials in natural increases levels, and (2) net outmigration from rural to urban areas through internal migration.

The first factor is derived from the mortality and fertility which are generally lower in urban areas than in rural area. Table 2 shows urban and rural crude birth rates and death rates in Myanmar, estimated by Central Statistical Organization from 1990 to 2015. Mostly, in Myanmar rural death rate exceeds the urban death rate except in 2014 and 2015. According to the urban and rural crude birth rates in Table 2, the fertility of urban women is lower than that of rural women in all years. Natural increases for both urban and rural are derived by subtraction the death rates from the birth rates of each. The positive values of rural-urban natural increase differentials reveal that rural natural increase exceeds urban natural increase in all the years. However, the urban population is growing more than rural population over time. In Table 3, urban growth rate exceeds its rural counterparts in Myanmar.

Table 2. Component rates (per thousand) of rural and urban population change in Myanmar: Death, Birth and Natural Increase, (1990, 1995, 2000, 2005-2015)

	Crude Death Rate			Crude Birth Rate			Natural Increase Rate		
Year	Rural	Urban	Rural-Urban Differential	Rural	Urban	Rural-Urban Differential	Rural	Urban	Rural-Urban Differential
1990	9.70	8.80	0.90	30.20	28.40	1.80	20.50	19.60	0.90
1995	9.90	8.60	1.30	30.10	28.00	2.10	20.20	19.40	0.80
2000	7.30	6.30	1.00	26.40	24.20	2.20	19.10	17.90	1.20
2005	6.40	5.50	0.90	21.90	19.00	2.90	15.50	13.50	2.00
2006	6.30	5.30	1.00	21.50	19.00	2.50	15.20	13.70	1.50
2007	5.90	5.30	0.60	21.20	18.40	2.80	15.30	13.10	2.20

2008	8.70	7.60	1.10	16.10	14.00	2.10	7.40	6.40	1.00
2009	5.80	5.10	0.70	16.60	15.30	1.30	10.80	10.20	0.60
2010	6.10	5.20	0.90	16.60	15.40	1.20	10.50	10.20	0.30
2011	8.00	7.00	1.00	20.00	16.00	4.00	12.00	9.00	3.00
2012	8.00	6.90	1.10	19.80	15.70	4.10	11.80	8.80	3.00
2013	8.00	6.90	1.10	19.60	15.50	4.10	11.60	8.60	3.00
2014	9.40	9.70	-0.30	22.20	16.80	5.40	12.80	7.10	5.70
2015	9.20	9.50	-0.30	21.90	16.80	5.10	12.70	7.30	5.40

Source: Statistical Year Book 2011, 2015, 2016 and 2017

Table 3. Total Growth Rate, Natural Increase and Net Migration Rates (Per Thousand) in Myanmar: 1990,1995,2000,2005-2015

	Total Growth Rate			Natural Increase Rate			Net Migration Rate		
Year	Rural*	Urban*	Urban-Rural Differential	Rural	Urban	Rural-Urban Differential	Rural	Urban	Urban-Rural Differential
1990	-0.23	0.69	0.93	20.50	19.60	0.90	-20.73	18.91	39.64
1995	-0.24	0.69	0.93	20.20	19.40	0.80	-20.44	18.71	39.15
2000	-0.25	0.68	0.93	19.10	17.90	1.20	-19.35	17.22	36.57
2005	-0.26	0.67	0.93	15.50	13.50	2.00	-15.76	12.83	28.59
2006	-0.26	0.67	0.92	15.20	13.70	1.50	-15.46	13.03	28.49
2007	-0.26	0.66	0.92	15.30	13.10	2.20	-15.56	12.44	28.00
2008	-0.26	0.66	0.93	7.40	6.40	1.00	-7.66	5.74	13.40
2009	-0.26	0.66	0.92	10.80	10.20	0.60	-11.06	9.54	20.60
2010	-0.27	0.66	0.93	10.50	10.20	0.30	-10.77	9.54	20.30
2011	-0.27	0.66	0.92	12.00	9.00	3.00	-12.27	8.34	20.61
2012	-0.27	0.66	0.93	11.80	8.80	3.00	-12.07	8.14	20.21
2013	-0.27	0.65	0.92	11.60	8.60	3.00	-11.87	7.95	19.82
2014	-0.27	0.66	0.93	12.80	7.10	5.70	-13.07	6.44	19.52
2015	-0.30	0.70	1.00	12.70	7.30	5.40	-13.00	6.60	19.59

Source: Statistical Year Book 2011, 2015, 2016 and 2017,
(*) World Bank Group

According to the figures in both tables, the growing share of urban population is not because of natural increase and it can be concluded that the net migration of population from rural to urban attributes encouraging to urbanization more than rural-urban differential in natural increases. Therefore, the role of rural-urban migration can be considered as a main contributor to urbanization in Myanmar over time and this role can be likely to hold across the regions with different levels of development within Myanmar. Assuming that rural-urban differentials in natural

increases are small or negligible, there is a simple analytical relationship between the rural net outmigration rate and the percentage of total population living in urban. And the existence of such relationship is sufficient to provide a linkage between the level of urbanization and economic development (Ledent, 1978). After launching the series of political and economic reforms in 2011, Myanmar has slightly moved away from the primary sector towards industry and services, trying to make a structural conversion from rural, agriculture-based economy towards a more urban, industry and service-based economy (IOM 2016).

2. Spatial Analysis

Spatial analysis is the analysis of spatially referenced data, beyond mapping. When location changes, the information content of the data changes. If location does not matter, spatial analysis is impossible. Tobler's first law of geography states that "everything depends on everything else, but near things are more related than distant things"[7]. Spatial analysis allows to find answers where things are or where events occurs, to measure sizes, shapes and distributions of things by location, to analyze relationships and interacts between locations, to optimize locations for facilities or routes for transportation, to detect and quantify patterns and relationships between things and to make predictions based on existing or theoretical patterns and relationships. Spatial autocorrelation determines how similar one data point is to other data points its surrounding. In order to explore whether the degree of urbanization in one district interacts that in its neighboring district, this study conduct the analysis of global spatial autocorrelation measures applying the test of spatial randomness. Although it is not very interesting, it is important because it can explain whether observed spatial pattern of value at one location does not depend on values at neighboring locations or not. In order to reject the spatial randomness, it is required two type of the structure. One type of structure is that when like values in neighboring locations occur more frequently than that would be expected under spatial random. And these similar values are not necessary high or low. Bringing both similarity of the value of the attribute and similarity of the location, it can be said that there is positive spatial autocorrelation among the spatial data.

1) Spatial Autocorrelation Statistics (Moran's I)

Moran's I statistics, suggested by Patrick Alfred Pierce Moran (1948), measures spatial autocorrelation based on both locations and attribute values simultaneously. It

7) Waters, N. 2017. Tobler's first law of geography. The International Encyclopedia of Geography. Edited by Richardson, D., Castree, N., Goodchild, M. F., Kobayashi, A., Liu, W., and Marston, R.A. Published 2017 by John Wiley & Sons, Ltd.

is well known through the classic work on spatial autocorrelation by Cliff and Ord (1973). Given a set of locations and distribution of values over these location, Moran's I statistics evaluates whether the spatial pattern is clustered, dispersed or random. The significance of Moran's I index is evaluated by calculated both z-score and p-value. The mathematical representation of Moran's I index and its z-score are presented as below.

$$I = \frac{n\sum_{i=1}^{n}\sum_{j=1}^{n} w_{i,j}z_i z_j}{S_0\sum_{i=1}^{n} z_i^2} \qquad (1)$$

$$S_0 = \sum_{i=1}^{n}\sum_{j=1}^{n} w_{i,j} \qquad (2)$$

where is the deviation of an attribute for location *i* from its mean, is the deviation of an attribute for location *j*, is the spatial weight between feature *i* and *j*, *n* is equal to the total number of locations and is the aggregate of all the spatial weights. The z-score for the statistics can be calculated as below.

$$z_I = \frac{I - E[I]}{\sqrt{V[I]}} \qquad (3)$$

$$E[I] = -\frac{1}{n-1} \qquad (4)$$

where is the theoretical expected value.

Global Moran's I tool computes the mean and variance for the attribute. After that it creates a deviation from the mean by subtracting the mean from the each feature value. Deviation for all neighboring features are multiplied together to create a cross-product , which are included in numerator of Moran's I index. Although the significance of index values can be evaluated with z-score and p-value, they cannot be interpreted directly. The results of the analysis are interpreted within the context of its null hypothesis which states that the analyzed spatial values are spatial randomness or not have any pattern. Under spatial randomness, the location of values may be altered without affecting the information content of the data. Thus, the null hypothesis should be rejected.

Based on Moran's I statistic, Anselin (1995) introduced Local Indicator of Spatial Association (LISA) method in order to examine the local clusters and local spatial outliers. LISA method mainly focuses on the heterogeneity of correlation over the

geographical dimension with the computational outcome of location-specific statistics. The mathematical representations of the Local Moran's I statistic of spatial association is presented as follow.

$$I_i = \frac{x_i - \bar{X}}{S_i^2} \sum_{j=1, j \neq i}^{n} w_{i,j}(x_j - \bar{X}) \qquad (5)$$

$$S_i^2 = \frac{\sum_{j=1, j \neq i}^{n} (x_j - \bar{X})^2}{n-1} \qquad (6)$$

where is an attribute for location *i*, is the mean of the corresponding attribute, is the spatial weight between feature *i* and *j*, and *n* equals the total number of locations and is the aggregate of all the spatial weights. The z-score for the Local Moran's I statistics can be calculated as follow.

$$z_{I_i} = \frac{I_i - E[I_i]}{\sqrt{V[I_i]}} \qquad (7)$$

$$E[I_i] = -\frac{\sum_{j=1, j \neq i}^{n} w_{ij}}{n-1} \qquad (4)$$

$$V[I_i] = E[I_i^2] - E[I_i]^2 \qquad (5)$$

If the Local Moran's I statistics is positive then the feature of location is similar to its neighboring features. According to this statistics, the significant spatial clustering of high-value areas are defined as "Hot Spot" and the areas of the significant spatial clustering of low-value are defined as "Cold Spot" in the case of positive correlation.

2) Result discussion

Applying the Moran scatter plot and the non-parametric spatial correlogram, this study tries to visualize the magnitude and the range of spatial autocorrelation for spatially reference variables urbanization indexes in Myanmar. In order to examine the correlation between the features of location *i* and that of its neighbors, firstly the Local Indicators of Spatial Association (LISA) method is conducted. Figure 4, 5 and 6 show the clustering pattern of urbanization indexes obtained from the LISA method. In each figure, the cluster maps present the significant locations of urban indexes

based on the location of attribute and its neighbors. There are four high-high clusters for urban share and Building index and three high-high clusters in NTL index, with dark red. And low-low clusters with dark blue are five, thirteen and six locations in urban share, Building index and NTL index respectively. Light blue and light red categories in cluster maps denote the spatial outlier.

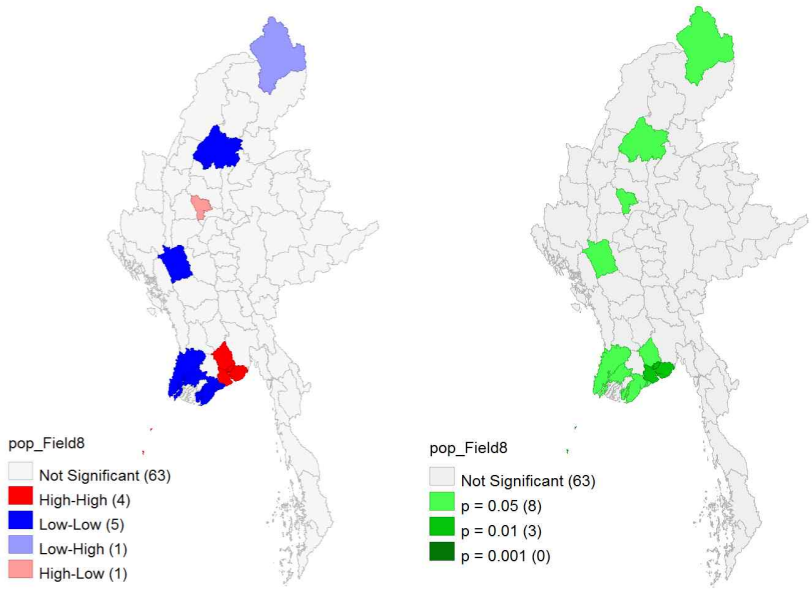


Figure 4. The Cluster and Significant Map Obtained from LISA (Urban Share)
Source: Owned calculation

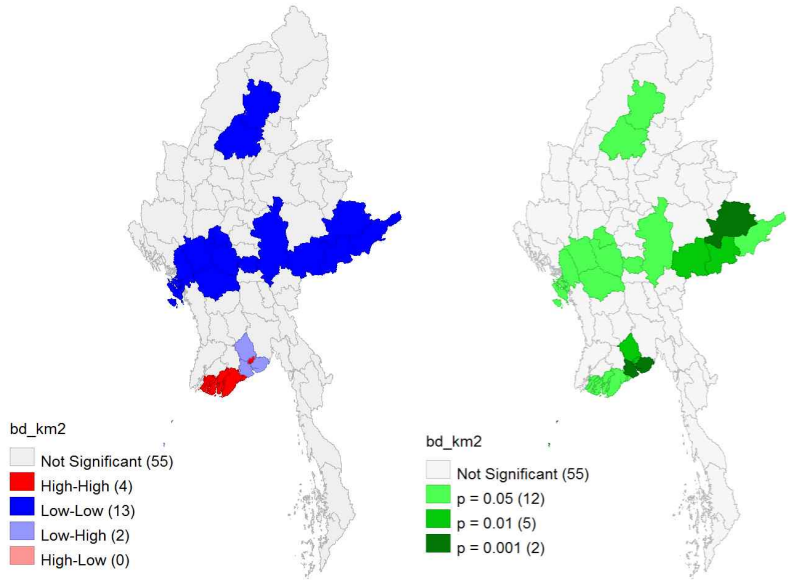


Figure 5. The Cluster and Significant Map Obtained from LISA (Building Index)
Source: Owned calculation

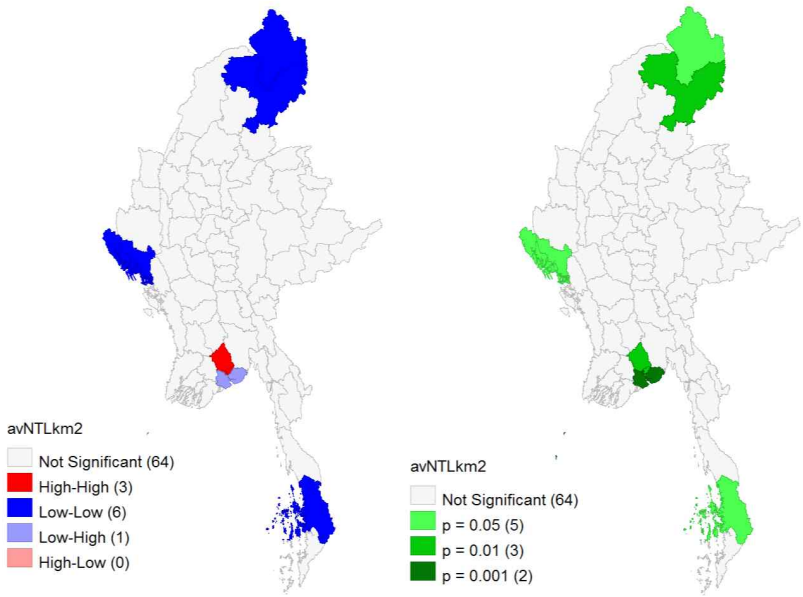


Figure 6. The Cluster and Significant Map Obtained from LISA (NTL Index)
Source: Owned calculation

As seen in figures, the existence of spatial outlier among the areas is relatively low compare to the existence of cluster among the areas. The significance maps present increasingly the degree of significances of local statistic with increasingly darker shades of green. According to the results, it can be suggested that the area of Yangon has high-high cluster of urban share and NTL index. In terms of Building index, beside the area of Yangon, there is the cluster of high density in the area of Ayeyarwaddy region. Although the existences of the cluster of "Hot-spot" are almost the same among urban indexes, the occurrences of the cluster of "Cold-spot" are different among urban share, Building index and NTL index.

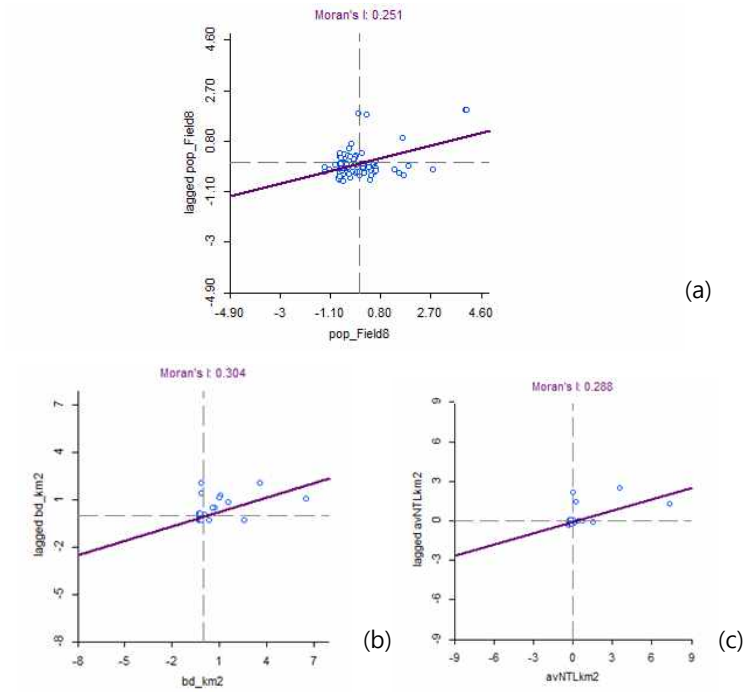
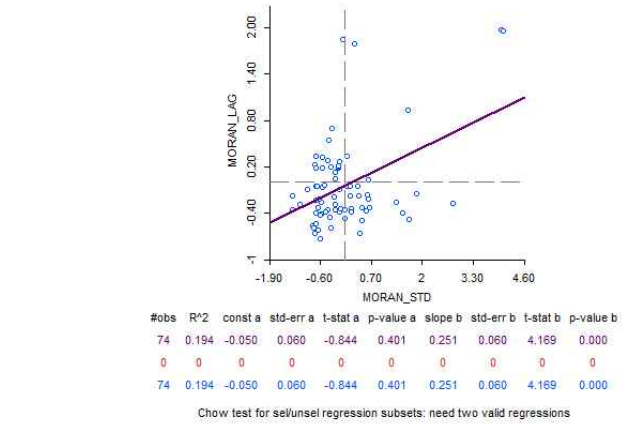


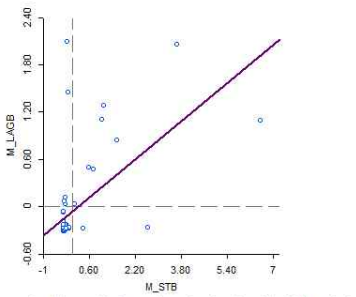
Figure 7. Moran Scatter Plot for (a) Urban Share (b) NTL index (c) Building Index
Source: Owned calculation



#obs	R^2	const a	std-err a	t-stat a	p-value a	slope b	std-err b	t-stat b	p-value b
74	0.194	-0.050	0.060	-0.844	0.401	0.251	0.060	4.169	0.000
0	0	0	0	0	0	0	0	0	0
74	0.194	-0.050	0.060	-0.844	0.401	0.251	0.060	4.169	0.000

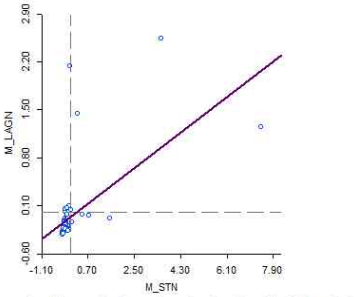
Chow test for sel/unsel regression subsets: need two valid regressions

(a)



#obs	R^2	const a	std-err a	t-stat a	p-value a	slope b	std-err b	t-stat b	p-value b
74	0.330	-0.069	0.051	-1.361	0.178	0.304	0.051	5.960	0.000
0	0	0	0	0	0	0	0	0	0
74	0.330	-0.069	0.051	-1.361	0.178	0.304	0.051	5.960	0.000

Chow test for sel/unsel regression subsets: can't compute



#obs	R^2	const a	std-err a	t-stat a	p-value a	slope b	std-err b	t-stat b	p-value b
74	0.355	-0.062	0.045	-1.354	0.180	0.288	0.046	6.299	0.000
0	0	0	0	0	0	0	0	0	0
74	0.355	-0.062	0.045	-1.354	0.180	0.288	0.046	6.299	0.000

Chow test for sel/unsel regression subsets: can't compute

(b) (c)

Figure 8. Standard Scatter Plot for Urban Share (b) NTL index (c) Building Index
Source: Owned calculation

There is a connection between the cluster map and the Moran scatter plot which also presents four kinds of spatial association categories. Corresponding to the location of the points in the four quadrants of the plot, these categories are high-high, low-low, low-high and high-low relative to the mean which is the center of the graph. Figure 7 presents the Moran scatter plots of urban share, NTL index and building index in Myanmar which consist the original variable of urbanization index are on the horizontal axes and their spatially lagged counterparts on the vertical axes. The slopes of linear fits represent Moran's I values for each spatially distributed value of urbanization index in Myanmar and the values are listed at the top of the graphs (0.251), (0.304) and (0.288) respectively. It can be seen that on the lower end of the quadrant there is less spread in urban share than spreads on other quadrants. However it cannot be concluded that there is the presence of systematic spatial variation in a variable.

Therefore both original values and the spatial lag values are standardized by the deviations from the mean of original values and the spatial lag values to construct the Moran as a standard scatter plot. The obtained standard scatter plots are presented in Figure 8. In contrast to the Moran scatter plot, the statistics are presented below the plots. With the statistically significant p-value, the slopes of the linear fits are presented by the values of (0.251), (0.304) and (0.288), the same as Moran's I provided by the Moran scatter plot. In order to make strong inference for the Moran's I statistic, this study continue to apply a "randomization or permutation approach"[8] which builds a reference distribution for the statistics under the null hypothesis of spatial randomness by randomly reshuffling the values over locations and computing the statistic again.

The results of reference distribution for the statistics are depicted as histograms as in Figure 9. In each histogram the green lines represent the value of the statistic for the actual data, placed at 0.251, 0.304 and 0.288. Locating well to the right of the reference distribution suggests a strong rejection of the null hypothesis.

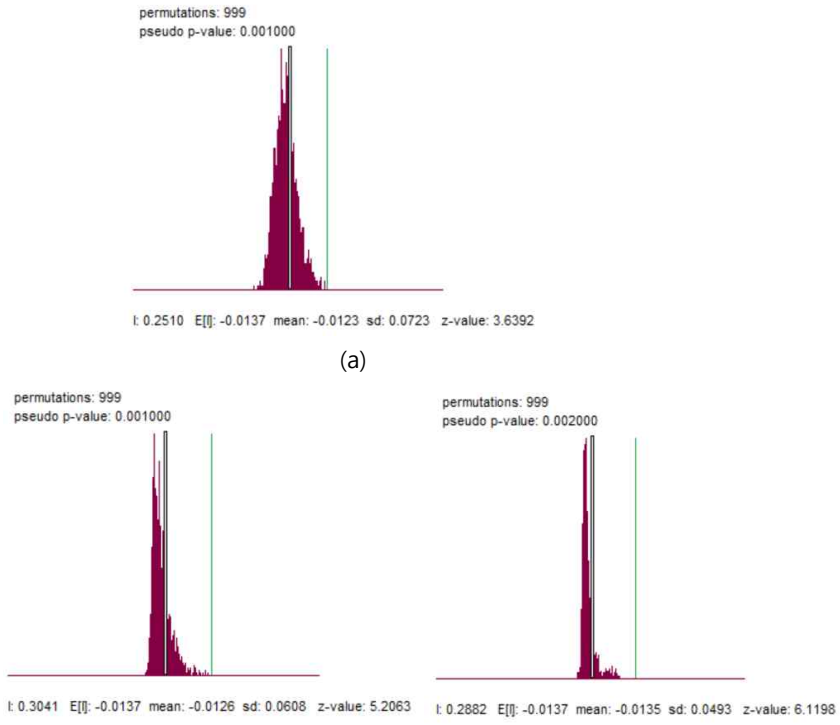


Figure 9. Reference Distribution for Moran's I for (a) Urban Share (b) NTL index (c) Building Index

Source: Owned calculation

8) GeoDa implements a randomization or permutation approach.

According to the statistically significant p-value and the positive z-value, the null hypothesis of spatial randomness is strongly rejected and thus the spatial distribution of high values and/or low values in the dataset is more spatially clustered than that would be expected if underlying spatial process were random. Therefore the presence of positive spatial autocorrelation can be occurred in spatially referenced variables of urban share, NTL index and building index in Myanmar which means that there is tendency for areas that are close to one another to have similar values of the variable. In other words, there is positive relationship between the urban index at one district and the urban index at its neighboring districts. Spatially referenced variables with the presence of spatial autocorrelation have often revealed that there is something of interest in these spatially referenced variables that attracts further investigation in order to understand the reasons behind the observed spatial variation (Cliff and Ord, 1981).

V. Conclusion

This study explores urbanization process in Myanmar applying two different approaches demographic analysis and spatial analysis. According to demographic analysis increase in share of urban population is mainly due to the net migration of population from rural to urban because the rural to urban migration attributes more enhancements to urbanization than rural-urban differential in natural increases. Therefore, the role of rural-urban migration has been a main contributor to urbanization in Myanmar since the time when the urbanization process is initiated. And urbanization in Myanmar is predictable to rise rapidly in the context of recent socio-economic and political transformations. Mostly urbanization in Myanmar is resulted from internal migration flows. The main purpose of these migrants in Myanmar to move to cities is to find job. On the other hand development of industrial zones in cities attracts the people to work within the zones and if the workers are able to live near the place they work, the population of these areas would be increased. Therefore, keeping on industrialization creates non-agricultural jobs and incentives for non-urban people to move to urban centers which in turn rising in urban population.

According to the spatial analysis it is found that spatially referenced variables of urban share, NTL index and building index, used for urbanization index, in Myanmar have positive spatial autocorrelation. It can be concluded that the area of Yangon has the cluster of high density of urban share, NTL index. In terms of Building index, beside the area of Yangon, there is the cluster of high density in the area of

Ayeyarwaddy region. And the results suggest that there is positive relationship between the urbanization index at one district and the urbanization index at its neighboring districts. In order to understand the reasons behind the observed spatial variation, future investigations are necessary. Moreover this study find that besides urban share which is the traditional measure of urbanization, NTL index and building index can be utilized as a proxy for urbanization index because these satellite sourced digital index are highly correlate with census based data, urban share.

Myanmar has favorable demographic profile with a large share of population engaged in productive work and a smaller share of older and non-working people. On the other hand, it has unfavorable labor market structure with a large share of underemployed workers, under-educated and low-skilled workers. Moreover most workers engaged in informal work. And wages in Myanmar are the lowest among the ASEAN countries (Japan External Trade Organization, 2013). Inadequate wages and lack of occupational safety are considerable concerns for poverty in Myanmar. In order to reduce poverty, the process of urbanization in Myanmar should evolve with better living and working conditions, wider access to public services, job opportunities, higher wages and stabilized political situation, providing the favorable economic conditions for the migrants.

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AN ANALYSIS OF CAUSALITY BETWEEN TOURISM AND NATIONAL INCOME OF MYANMAR

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ABSTRACT: This study attempts to investigate the direction of causality between tourism industry and national income of Myanmar. Since 1992, the Myanmar government encouraged tourism and designated 1996 as a visit Myanmar year. Thus, it is interesting to investigate whether there is the causal relationship between tourism and national income of Myanmar. To calculate real gross domestic product, the base period is shifted into (1985/86) constant price. Annual figures of real gross domestic product and number of tourist's arrival are derived in to quarterly figure by using Boot, Feibes and Lisman (1967) method. From the result of test of seasonal variation, seasonal effect are found in quarterly real value of gross domestic product and these effect are removed using ratio to moving average method. The cointegration test revealed that the existence of long run and equilibrium relationship between quarterly number of tourists arrival and national income of Myanmar. The error correction mechanism adjusted the short term disequilibrium relationship between the two variables. Granger causality test stated the evidence of feedback relationship between quarterly number of tourist's arrival and national income of Myanmar. Therefore, it can be considered that tourism played a key role in Myanmar economy.

Key words *: ADF test, Cointegration, Error Correction Model, and Granger-causality test*

I. Introduction

Tourism industry is one of the sources of high income as well as growing sectors in over the world. The role of tourism becomes a common awareness to the economic growth and the progress of modern societies around the world. Tourism sector plays significance role in economic growth such as personal income, taxes revenues and employment opportunities, foreign exchange earnings, human capital and technology (Munir, MoriKogid and Mazlan Myfli).

Myanmar has great attractions in the form of scenic beauty place such as Bagan, Inle-lake, Kengtung, Kyaiktiyo, Mount Popa, Mrauk U, Ngapali, Ngwe Saung, Chaung tha and Pyay. In addition Myanmar has great potential for the tourism due to its diverse topography culture and traditions such as religion, literature, dress, architecture, painting wood carving, martial art, handicraft, weaving, and fine arts.

In May 06, 2019, Myanmar Tourism Bank was opened in Yangon and is running with investment of 22 Billion kyats. The main objective of the bank is to provide financial for tourism industry and to encourage the use of local currency in cross border tourism sector and to help tourism companies, organizations and hotels. The interest rate will be fixed by Central Bank of Myanmar. Five percent of the profit will be used for the development of the tourism industry annually.

Furthermore, the Ministry of Hotels and Tourism (MOHT) is launched tourism as an important economic feature with its activities significantly contributed to any country's development goal, generating income and employment for its people. In addition Myanmar Tourism Marketing (MTM) set goals to promote Myanmar as a sustainable tourism destination that can be visited the whole year round. Nowadays, Myanmar has the top ten destinations for year 2019. They are Wale Island, Dawei, Pindaya, Yangon, Mainmahla Island, Bagan, Inle lake, Mandalay, Kalaw and Loikaw.

This paper is an attempt to investigate the direction of causality between tourism and national income of Myanmar. The empirical relationship between number of tourist arrival and national income are tested for the year (1988/89 to 2017/18) using Augmented Dickey and Fuller test, Angle Granger two steps cointegration test and Granger causality test. The remainder of the paper is organized as follows: Section II includes the literature review of various studies concerning the tourism growth relationship and data description. The methodology used in this study is explained in section III. Section IV discusses the finding results and last section explains conclusion and discussion for the analysis.

II. REVIEW OF VARIOUS STUDIES

Various studies investigated the relationship between tourism and economic growth for different countries. Some studies are as follows:

Shahnawaz Malik, Imran Sharif Chaudhry, Muhammad Ramzan Sheikh and Fareed Shareef Farooqi (2010) investigated cointegration and causal analysis between tourism, economic growth and current account deficit in Pakistan. They found that a long run relationship between number of tourists and GDP growth through the channel of reduction in current account deficit. In addition unidirectional causality from current account deficit to GDP, number of tourists to GDP and tourists to current account deficit were found.

Qaiser Munir, Mori Kogid, and Mazlan Mifli (2014) investigated tourism and economic growth in Malaysia. The result pointed out a long run relationship between tourist arrivals and GDP and between tourism receipts and GDP. Maryam Lashkarizadeh, Zahra Keshmir, Hadi Parhize Gashti and Rafat Beigpoor Shahrivar (2012) evaluated the relationship between tourism industry and economic growth in Iran. Their findings indicate that there is a mutual causality relationship between tourism industry and economic growth in Iran.

Similarly, Vikas Gautam and Suresh KG (2012) examine the causal relationship between tourist arrivals and bilateral trade of India with Germany, Netherland, Switzerland, France, Italy, USA, UK and Canada for the period 1996 January to 2008 December. The Granger causality test results indicate two way causal relationships between the trade and tourism in case of USA, Italy and Canada.

Wang Liangju, Zhang Huihui and Li Wanlian (2012) analyzed the causal relationship between tourism and economic growth for China economy. The results demonstrated bidirectional Granger causality between China's domestic tourism and economic growth.

1 DEFINITIONS OF THE VARIABLES

1) Tourism

Tourism is the number of people traveling to and staying in places outside their usual environment for leisure, business or other purposes for not more than one consecutive year.

2) Gross Domestic Product (GDP)

The monetary value of all the finished goods and services produced within a country's borders in a specific time period. Through GDP is usually calculated on a quarterly basis as well. GDP includes all private and public consumption, government outlays, investment minus imports that occur within a defined territory. GDP is a broad economic activity.

2 DATA DESCRIPTION

1) Sources of Data

Annual values of Gross Domestic Product (GDP) and number of tourist's arrival for the year (1988/89 to 2017/18) are attained from Statistical Yearbook. The based period of GDP is shifted into 1985/86 constant price.

2) Descriptive Statistics

Descriptive statistics describes the characteristics of the data used while inferential statistics is used to make decision about the population which the sample data is collected.

Table 1 Results of Descriptive Statistics

	RGDP	NTA
Mean	192154.0	1004120.0
Median	133734.2	613538.0
Maximum	501069.7	4681020.0
Minimum	47141.00	15144.0
Std. Dev.	146386.2	1246071.0
Skewness	0.734959	1.621916
Kurtosis	2.162025	4.445150
Jarque-Bera	3.578579	15.76363
Probability	0.167079	0.000378
Observations	30	30

Table (1) represents the results of descriptive statistics of the data used. The mean value of real gross domestic product and number of tourist arrival is 192154 and 1004120 respectively. The standard deviation or measure of dispersion of variables real gross domestic product and number of tourist arrival is 146386.2 and 1246071 respectively. The value of zero skewness indicates that the sample data follows

symmetrical distribution. If the mean value is greater than median value and median is greater than mode, the skewness indicates the sample data has positive skewed distribution. By comparing the values of skewness of the variables under consideration, it can be seen that the skewness value of number of tourist arrival is highly positive skewed as compare to the value of real gross domestic product. The kurtosis normal distribution is 3. The kurtosis value of real gross domestic product is close to 3 whereas the kurtosis value of real value of number of tourist arrival is more than 3. In addition, the probability value of Jarque-Bera statistic for real gross domestic product is greater than 0.01 means that the null hypothesis of normality cannot be rejected at 99 percent confidence level. However, the probability value of Jarque-Bera statistic for number of tourist arrival is less than 0.01 means that the null hypothesis of normality can be rejected at 99 percent confidence level. Thus, in this study the series of real gross domestic product is close to normally distribution under the period of study.

Figure (1) shows annual growth rate of real gross domestic product. In Myanmar, negative annual growth rate of real gross domestic product occurred in 1988, 1989 and1992. This is because during that period the government initiated a series of reform measures in various sectors. Similarly, annual growth rate of number of tourists arrival are shown in Figure (2). As shown in Figure (2), negative growth rate of annual number of tourists arrival in Myanmar are found in 1988, 1989, 2000, 2004, 2008, 2009 and 2017 respectively.

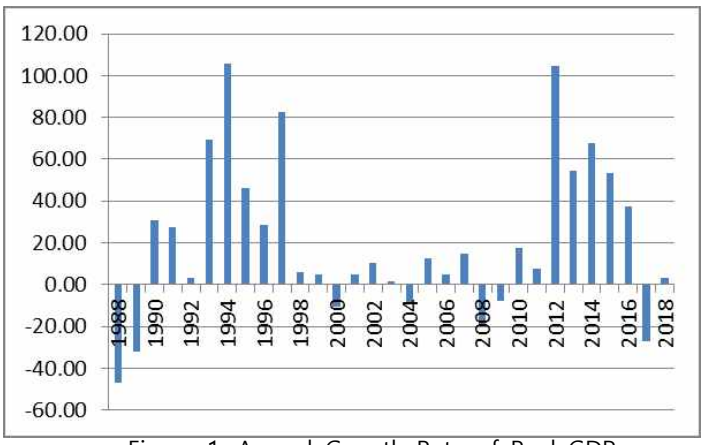

Figure 1. Annual Growth Rate of Real GDP

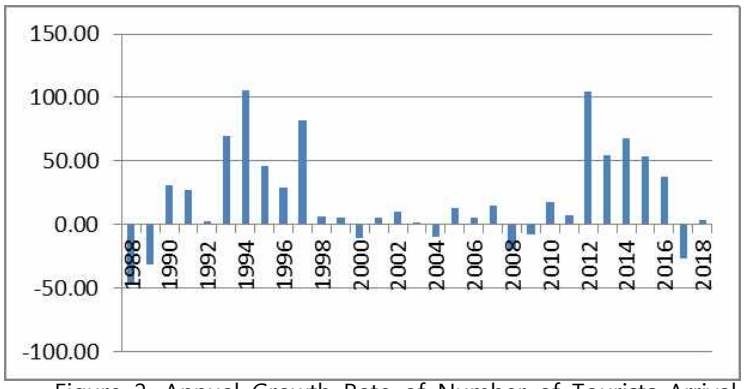

Figure 2. Annual Growth Rate of Number of Tourists Arrival

III. METHODOLOGY

In this study GDP and number of tourist's arrival are the proxy of national income and tourism of Myanmar. To eliminate the problem of money inflation, real value of GDP is calculated based on 1985/86 constant price. Annual value of real GDP and number of tourist arrival are derived into quarterly figures by using by using Boot, Feibes and Lisman (1967) method. To remove the effect of seasonal variation, test of seasonality is conducted. After that the order of integration is checked by using Augmented Dickey test. Thereafter, long run and equilibrium relationship between the series is checked by using Angel and Granger (1987) two step procedure. Finally, the direction of causality between number of tourist arrival and national income of Myanmar is calculated based on Granger causality test.

1. Augmented Dickey Fuller (ADF)Unit Root Test

Augmented Dickey Fuller unit root test is estimated in three different forms.
Pure random walk

$$Y_t = \beta Y_{t-1} + u_t \quad (1)$$

Random walk with drift

$$Y_t = \theta_0 + \beta Y_{t-1} + u_t \quad (2)$$

Random walk with drift and stochastic trend

$$Y_t = \theta_0 + \theta_1 t + \beta Y_{t-1} + u_t \quad (3)$$

$$Y_t = \theta_0 + \theta_1 t + \beta Y_{t-1} + \alpha \sum_{i=1}^{m} Y_{t-1} + \varepsilon_t \quad (4)$$

The null hypothesis of Augmented Dickey Fuller (ADF) test is that β = 0 with alternative hypothesis β < 0. If β is rejected then Yt is stationary. The difference between Dickey Fuller and Augmented Dickey Fuller is that in ADF test, the lagged values of dependent variables Yt is also added as independent variable just to make error terms pure white noise. So that error term in Equation (4) is serially un-correlated. If the series are found non stationary, their first difference series is tested for stationarity. If the first difference series is stationary, it is called integrated of first order i.e., I(1). If the series is difference "d" time to make stationary, it is called I(d).

Suppose series xt and yt are both d-order integration series, if there is a vector θ = (θ1, θ2) makes zt =θ1yt + θ2xt be (d – b) order integration, that is zt ~ I(d-b), where d ³ b ³ 0. Then series xt and yt can be called (d, b) co-integration, denoted by xt, yt ~ CI (d, b), θ is the co-integration vector. Two variables can be co-integration when they have same order of integration.

If the level value of series xt and yt are nonstationary, but they are d- order integration, then it can judge whether xt and yt are co-integration through examining the residual series μt from the simple linear regression equation yt = β0 + β1xt. If μt is stationary, then it can be consider that there is a co-integration relationship between xt and yt. The meaning of co-integration is that it can examine whether there is a long run and equilibrium relationship between variables. If two variables are co-integrated, in the long run they will not separate far from each other and they will resume equilibrium automatically. Engel Granger two-step test (1987) can be used to verify whether variables are co-integration.

Co-integration test can be used to investigate whether there exists a long term equilibrium relationship between variables but it cannot reveal whether there is causality between the variables. The presence of co-integration implies the existence of Granger causality at least in one direction (Granger, 1988) between variables. Granger causality test provides a good technique to deal with such tricky.

2. Engle and Granger (1987) Two –Step Procedure for Cointegration Analysis

(a) Estimate the Long-run (equilibrium) Equation:

Yt = δ0 +δ1 Xt + ut (5)

The OLS residuals from Equation (5) are a measure of disequilibrium:

$$\hat{u}_t = y_t - \hat{\delta}_0 - \hat{\delta}_1 X_t \quad (6)$$

A test of cointegration is a test of whether $\hat{u}_t$ is stationary. This is determined by ADF tests on the residuals, with the Mackinnon (1991) critical values adjusted for the number of variables (which Mackinnon denotes as n). If co-integration holds, the OLS estimator of Equation (5) is said to be super-consistent.

(b) Estimate the Error Correction Model

$$\Delta Y_t = \emptyset_0 + \sum_{j=1} \emptyset_j \Delta Y_{t-j} + \sum_{h=0} \theta_h \Delta X_{t-h} + \alpha \hat{u}_{t-1} + \varepsilon_t \quad (7)$$

By OLS as this equation has only I(0) variables, standard hypothesis testing using t-ratios and diagnostic testing of the error term is appropriate. The adjustment coefficient a must be negative.

3. Granger Causality Test

The causal directions of the variables in hypothesis are explored by a causal model which consists of two equations, based on the Granger's Axiom A (1980) that the past and the present may cause the future but the future cannot cause the past.

(i) Unidirectional Causality

$$X_t = \alpha_0 + \sum_{i=1}^{m} \alpha_i X_{t-i} + \sum_{j=1}^{n} \beta_j Y_{t-j} + \varepsilon_t \quad (8)$$

$$Y_t = \theta_0 + \sum_{i=1}^{m} \theta_i X_{t-i} + \sum_{i=1}^{n} \gamma_j Y_{t-j} + u_t \quad (9)$$

The hypotheses for testing causal directions are:

H0: $\theta_i \alpha_i = 0$

H1: $\theta_i \alpha_i \neq 0$ (X causes Y: X->Y)

H0: $\beta_j \beta_j = 0$

H1: $\beta_j \beta_j \neq 0$ (Y causes X: Y->X)

(ii) Bidirectional Causality (Feedback)

$$X_t = \lambda_0 + \lambda_1 Y_t + \sum_{i=1}^{m} \alpha_i X_{t-i} + \sum_{j=1}^{n} \beta_j Y_{t-j} + \varepsilon_t \quad (10)$$

$$Y_t = \emptyset_0 + \emptyset_1 X_t + \sum_{i=1}^{m} \theta_i X_{t-i} + \sum_{j=1}^{n} \gamma_j Y_{t-j} + u_t \quad (11)$$

The hypotheses for testing feedback are:

H0: $\emptyset_1 \varnothing_1 = 0$

H1: $\emptyset_1 \varnothing_1 \neq 0$ (X causes Y: X <-> Y)
H0: I1 = 0

H1: I1 ≠ 0 (Y causes X: Y <-> X)

The most common way to test the causal relationships between two variables is the Granger causality proposed by Granger (1969). Granger causality means that the lagged Y influence X significantly in Equation (8) and the lagged X influence Y significantly in Equation (9). In other words, joint test (F-test) can be performed if the estimated lagged coefficients $\sum \theta_i$ and $\sum \beta_j$ are different from zero. When the joint test rejects the null hypotheses of H0: θ_i = 0 and H0: β_j = 0, causal relationships between X and Y are confirmed.

The test can be performed on the following hypotheses:

(a) H0: βj =0, j=1,...,n

If H0 is rejected it can be said that Y causes X.

(b) H0: θi =0, i=1,...,m

If H0 is rejected it can be said that X causes Y.

For the causality, the test statistic is

$$F_{(q,n-q)} = \frac{(ESS_R - ESS_{UR})/(q-p)}{(ESS_{UR}/(n-q))} \sim \text{follows F- distribution} \quad (12)$$

where

ESS_R = Error sum of square from restricted equation,

ESS_{UR} = Error sum of square from unrestricted equation,

q = Number of parameters from the unrestricted equation and

p = Number of parameters from the restricted equation.

IV. RESULTS AND FINDINGS

1. Testing for Stationarity and Integrated Order

To examine the order of integration, the variables under study are checked for unit root with equation of constant or drift term and trend included on the basis of ADF. As shown in Table (2), ADF test pointed out that level values with constant term of the data series are nonstationary. However, their first different series with constant included are stationary. Based on the automatic lag length selection, the ADF statistics are greater than Mackinnon critical value at 5 % level for real gross domestic product and number of tourist's arrival. Thus, the variables under study are first order stationary I(1). Next step is to check whether there exist cointegration relationship between tourist arrival and real gross domestic product.

Table 2. Results of Unit Root (ADF) Test on Variables / H0: Non stationary test.

Variable	ADF statistic	Critical Value at 5%	Decision Rule
RGDP	-1.67	-2.88	Do not reject H0.
NTA	-1.15	-2.88	Do not reject H0.
DRGDP	-12.57	-2.88	Reject H0.
DNTA	-6.05	-2.88	Reject H0.

Note: (i) RGDP represents real gross domestic product
(ii) NTA stands for number of tourist arrival
(iii)D denotes the first difference operator

2. Results of Co-integration Test

Cointegration analysis can be used to solve spurious problem in the regression model. If the linear combination of two non-stationary series becomes stationary, it can be called cointegrated. The cointegration relationship between the variable is checked using Engle and Granger two step procedure. The first step is to perform simple linear regression equation of RGDP on NTA.

$$RGDP = 30971.05 + 0.1032\ NTA \qquad (13)$$

t-ratio (10.17) (11.73)

$R^2 = 0.55$, DW = 0.97

From Equation (13), the results of Durbin Watson statistic indicates that there is first order autocorrelation among the residual series. However, as shown in Equation (14), the residual series from Equation (13) is stationary.

$$\Delta\hat{u}_t = -0.486585u_{t-1} \quad (14)$$
t-ratio (- 5.85)
$R^2 = 0.24$, DW = 2.27

The Engle-Granger 1 percent critical t value is – 2.5899. Since the computed τ (=t) value is much more negative than this critical value. On the other hand, in absolute term the computed τ (=t) value is greater than Engle-Granger 1 percent critical value. The residual series from the regression of real gross domestic product on number of tourists arrival are I(0) and that is they are stationary. Thus, Equation (14) is a cointegration regression and this regression is not spurious, even though the two individual series are nonstationary.

3. Results of Error Correction Mechanism

Error correction mechanism (ECM) developed by Engle and Granger (1987) is used to valid the long-run behavior by incorporation of the short-run behavior of an economic variables.

$$\Delta RGDP = 725.43 + 0.05\Delta NTA_t - 0.47\ ECT_{t-1} \quad (15)$$
t-ratio (0.33) (0.90) (-5.51)
$R^2 = 0.22$, DW = 2.31

As shown in Equation (15), the coefficient of error correction term (ECT) on number of tourist arrival brings about negative sign and statistically significant. As the theory of error mechanism implied that the positive coefficient of the error term will reduce its equilibrium value in the next period whereas the negative coefficient is expected to raise its equilibrium value in the next period. The speed of adjustment is approximately 47 percent quarterly.

4. Results of Granger Causality Test

Prior to conduct Granger causality test on VAR model, the optimal lag length is

decided by using (AIC) Akaike Information Criterion, (SC) Schwarz Information Criterion, and (HQ) Hannan-Quinn information criterion. All criterions suggested a lag length of two as optimal lag length [see in Table 4]. Thus, in this study maximum lag length two is used as optimal lag length for Granger causality test.

Table 4. Lag Length Criteria for Granger Causality Test

Lag	AIC	SC	HQ
0	23.25493	23.30403	23.27485
1	22.96509	23.03874	22.99476
2	22.83150*	22.92970*	22.87133*

* indicates lag order selected by criterion

Table 5. Results of Granger Causality Test

Lag	Null Hypothesis	F-Statistic	Probability
1	NTA does not Granger Cause RGDP	17.6773	0.0001
1	RGDP does not Granger Cause NTA	4.60042	0.0342
	NTA does not Granger Cause RGDP	3.0502	0.0516
	RGDP does not Granger Cause NTA	4.36775	0.0151

As shown in Table (5), unidirectional causality runs from real value of gross domestic products to number of tourists arrival and vice versa. Therefore, bi-directional causality between real value of gross domestic product and number of tourist's arrival is found in Myanmar during the study period.

V. CONCLUSION

The purpose of this study is to investigate the direction of causality between tourism and national income of Myanmar. Annual real value of gross domestic product followed approximately normal distribution. However, number of tourist's arrival is found to be positively skewed distribution. As shown in Figure (1) and (2), Myanmar has suffered negative annual growth rate of gross domestic product in 1992. This is because during that period the government initiated a series of reform measures in various sectors. Similarly, negative annual growth rate of number of tourists arrival are observed in 2000, 2006, 6and 2016 respectively. For the period

(1988/89 t0 2017/18) by using Boot, Feibes and Lisman (1967) method quarterly figures are derived from annual value of real GDP and number of tourists arrival. When test of seasonality is conducted to the quarterly figures of real GDP and number of tourist's arrival, the seasonal effect is found in quarterly real values of GDP. These effects are eliminated using seasonal indices computed by ratio to moving average method. There is no evidence of seasonality in quarterly real value of number of tourist arrival.

The unit root test clarified that the two series of variables used are non stationary at their levels but found stationarity at their first differences with constant term included. Therefore, quarterly real values of GDP, and number of tourists arrival are found to be integrated of order one, I(1). The cointegration test confirmed that quarterly real values of GDP and number of tourists arrival are cointegrated, indicating an existence of long run and stable equilibrium relationship between them. From the ECM model, it is found out that there is an adjustment mechanism from short term to long term in the relationship between numbers of tourist's arrival and national income of Myanmar. The Granger causality test suggested that unidirectional causality run from quarterly number of tourist's arrival to national income of Myanmar at one period lag. Similarly, bi-directional causality is observed between quarterly number of tourist's arrival and national income of Myanmar.

To summing up both the series of variables used, it is observed that tourism industry played the major role in Myanmar economy because there found positive impact from tourism industry to national income of Myanmar. As a recommendation, the government should encourage tourism industry in order to improve Myanmar economy.

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Determinants of Human Development Index: An Empirical Analysis of the ASEAN Plus Two

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ABSTRACT: The Human Development Index (HDI) is used to measure the country's overall achievements in its social and economic dimensions. The study tries to find which factor significant impact on the HDI of ASEAN 10 countries, Japan, and South Korea based on the panel data. The result pointed out the panel regression with a fixed-effect model was better to find the determinant factor affecting the HDI. The unemployment rate and GDP have an impact on the human development index directly, but inflation does not have an impact on the HDI. The result showed that countries with higher GDP can have a high human development index. The population is a directly effect on HDI of ASEAN plus Two (ASEAN+2). This means that the country has an increased population; its HDI will lead to being prevented to reach a high-HDI category. This study highlights the importance of the government to control the population and acceleration of economic growth and should more create job opportunities for the unemployed population.

Key words *: Human development index, panel regression analysis, Fixed-effect model, ASEAN+2*

I. Introduction

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Human development index (HDI) had been introduced by the United Nations Development Program (UNDP) since 1990. Unidirectional, development policy will create an aspect that may influence each other to maximize the benefits for both. One approach to determine the success of human development is the Human Development Index (HDI) (UNDP, 1990). It explains how residents can access development results in obtaining income, health, and education. The HDI was created to worry that people and their capabilities should be the last word criteria for assessing the event of a country, not process alone. The HDI can also be used to question national policy choices, asking how two countries with the same level of Gross value (GNI) per capita can end up with different human development outcomes [1)].

The outcome differences can stimulate the discussion about government program priorities. At that first time (1990), the HDI was formed from four indicators. These four indicators reflect an extended and healthy life, knowledge, and an honest standard of living. The HDI is the geometric mean of normalizing indices for each of the three dimensions (Arisman 2018). The three dimensions are health dimension, education dimension, and standard of living dimension[2)].

The U.N. (2016) states that:

Health dimension is measured by anticipation at birth. Education dimension is assessed using years of schooling for adults aged 25 years and more, and, expected years of schooling for teenagers of school entering the age. The Standard of the living dimension is measured by gross national income per capita. HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI.

Inequalities in human development hurt societies and weaken social cohesion and people's trust in government, institutions, and each other. They hurt economies, wastefully preventing people from reaching their full potential at work and in life. Inequalities in human development are not just about disparities in income and wealth. The 2019 Human Development Report (HDR) explores inequalities in human development by going beyond income, beyond averages, and beyond today. The proposed approach sets policies to redress these inequalities within a framework that links the formation of capabilities with the broader context in which markets and governments function[3)].

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1) Arisman. (2018) Determinant of Human Development Index in ASEAN Countries. Signifikan: Jurnal Ilmu Ekonomi. Vol. 7 (1): 113 – 122. doi: http//dx.doi.org/10.15408/sjie.v7i1.6756
2) Determinant of Human Development Index in ASEAN Countries–Neliti. https://mafiadoc.com/determinant-of-human-development-index-in-asean-countriesneliti_5b946c19097c47960a8b468b.html
3) Human Development Report 2019 Inequalities in Human Development in the 21st Century Briefing note for countries on the 2019 Human Development Report.

Theoretically, one factor which can accelerate the HDI is that the rise in per capita income. Hasan (2013) and Eren et al. (2014) show that GDP per capita affects the level of development. This improvement will increase the purchasing power of individuals and in the end, will improve the quality of education and health. However, the high growth sector within the region doesn't necessarily reflect equitable prosperity for all people of the region. Moreover, the rapid rate of economic growth by itself won't follow by the increase or improve the distribution of profits for the entire population. The increasing performance of human development indicators can accelerate the transformation of the country from developing the country into a developed country (Arisman 2018).

HDI can be classified into four categories, namely Very high HDI, High HDI, Medium HDI, and Low HDI. HDI fixed cutoff points are computed from the quartiles of distributions of component indicators and based on these points HDI classifications are made. The cutoff points are HDI of less than 0.550 for low human development, 0.550–0.699 for medium human development, 0.700–0.799 for high human development, and 0.800 or greater for very high human development[4].

The UNDP (2012) report reveals that,

Myanmar's HDI ranking in 2013 was ranked 108 out of 187 countries. Meanwhile, Myanmar's economic growth is high enough to average above 6% during the period 2010 to 2012 and quite high compared to other ASEAN countries. Based on the above condition, there is a positive relationship between economic growth and HDI. Meanwhile, according to UNDP (2009), economic growth with HDI has a relation to one another human development can be sustained if it is supported by economic growth. The most effective way in sustainable human development is the achievement of economic growth improved, with equitable distribution of income.

The Association of Southeast Asian Nations (ASEAN) could also be a regional intergovernmental organization comprising ten Southeast Asian states. ASEAN promotes Pan-Asianism and intergovernmental cooperation and facilitates economic, political, security, military, educational, and socio-cultural integration amongst its members and ASIAN nations[5]. Despite the study of factors affecting the HDI is important for the development of the nation, a few studies have been conducted. For this reason, this study examines the HDI of ASEAN plus Two (Japan and South Korea) (ASEAN+2) over the period between 2008 to 2018 years. The main aims of the study are (i) to investigate the overall situation of the human development index and its growth over the period (2008 -2018), and (ii) to determine the factors affecting the HDI of ASEAN+2.

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ttp://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/CHN.pdf

4) The United Nations Development Programme: Human Development Report (2014): A Brief Introduction. Retrieved from http://tzec.com/hdi/

5) https://quizlet.com/468495053/supranational-organization-flash-cards/

II. Related Literature Review

There is a limited number of literature reviews related to this study and some studies were extracted and were shown in the following.

Sangaji (2016) examined the determinant factors affecting the human development index in the eight countries where the majority of these countries are Buddhists. The explanatory variables such as the gross domestic product per capita, inflation, life expectancy at birth, and fertility rates were used. The panel regression of a random-effect model was used with the study period was from 2010 to 2014. The variables of life expectancy at birth and gross domestic per capita had positive signs, while the variables of inflation and the fertility rate had negative signs. The study implied that it is important to take into account all explanatory variables in improving the human development index in these countries.

Arisman (2018) studied the factors that affect the human development index in nations in ASEAN member countries. The panel data regression with fixed-effect model was used. The results of processing with the fixed- effect model show that population and per capita income growth rate affects the human development index in ASEAN member countries, while the variable rate of inflation and unemployment rate does not have an impact on the human development index.

Humaira and Nugraha (2018) studied factors affecting the human development index in West Kalimantan Province by using regression analysis based on time series data from 2012 until 2015. It was found that the fixed-effect Model is the best regression model with an R^2 of 99.85 %. The influencing variables are Life Expectancy, Adjusted Per Capita expenditure, School Average, School Expectation, and Gross Regional Domestic Product at Constant Price.

Aravind (2019) analyzed the impact of the economic performance of South Asian Association for Regional Cooperation (SAARC) nations in its human development. The study covers the macroeconomic data and the human development index (HDI) of the SAARC nations from 1990 to 2015. The random-effects model of panel regression analysis confirmed that GDP and GDP per capita can influence the human development of these nations, whereas the economic growth does not have any significant impact on human development at 1% and 5% levels of significance. The study is also intended to suggest numerous policy measures for enhancing the human development of this region.

III. Material & Methods

The data used in this study are a combination of time series data with

cross-section and thus, the panel regression method with a fixed-effect model was used. The required data were retrieved from the World Bank and UNDP (various issues). The study period was 2008 to 2018 and the total observation was 132 observations. In this study, the explanatory variables are the population, Gross Domestic Product (GDP), inflation rate, and unemployment rate, and the explained variable is HDI of ASEAN +2.

IV. Result and Discussion

As shown in the following Figure 1, Singapore, Japan, South Korea, and Brunei Darussalam include within the category of very high human development. These countries achieved a high level of economic development. Thailand includes within the high human development and Vietnam has included within the medium human development over the period 2008 to 2018. But, Malaysia's HDI has changed from high to very high in 2016; the Philippines and Indonesia have changed from medium to high human development in 2015 and 2016. Cambodia, Laos, and Myanmar include within the medium human development. Over the period 2008 to 2018, the category from low to medium human development has been changed in Cambodia in 2013, Lao in 2011, and Myanmar in 2013. These HDI differences show that there's a difference in government policy priorities among the ASEAN+ 2.

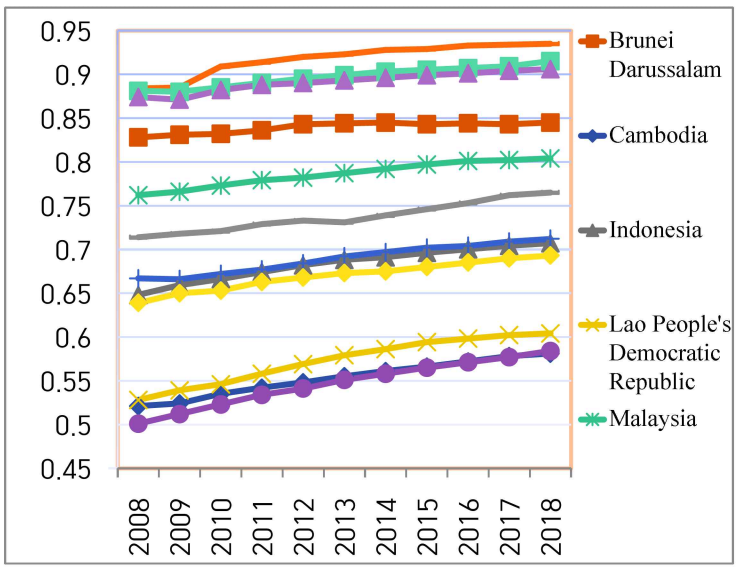

Figure 1. Human Development Index values (2008–2018)
Sources: UNDP (various issues)

Looking back over one decade, HDI has made substantial progress. To analyze it, the growth rates were calculated for three groups such as very high, high, and medium HDI and shown in Table 1. Among the very high development group, Singapore has the highest growth rate of 5.77%. The second-largest growth rate was found in Malaysia with 5.51% and followed by Japan with 3.86% and Korea with 3.66% respectively. For the high development group, Indonesia has the largest growth rate of 9.10%. Thailand is the second-largest growth rate of 7.14% and followed by the Philippines (6.75%). Myanmar has the largest growth rate of 16.57% among the medium development group, followed by Lao with a growth rate of 14.39%, Cambodia with a growth rate of 11.52%, and Viet Nam with the growth rate of 8.45% respectively.

Table 1. HDI Growth Rates by Groups

Very high Group		High Group		Medium Group	
Country	HDI Growth (%)	Country	HDI Growth (%)	Country	HDI Growth (%)
Brunei	2.05	Thailand	7.14	Viet Nam	8.45
Singapore	5.77	Philippines	6.75	Cambodia	11.52
Japan	3.86	Indonesia	9.10	Lao	14.39
Korea	3.66			Myanmar	16.57
Malaysia	5.51				

Source: Based on Calculations (Human Development Index (2008 -2018))

1. Research Hypotheses

This study hypothesized that population, inflation, and unemployment rate are inversely related to HDI. Meanwhile, the GDP is positively related to HDI. Regarding the selection of the panel model, a series of tests were done in this analysis.

2. Testing Procedures

Firstly, the fixed-effect model is estimated. Then, the Chow test is done to choose whether the model is a pooled least squares or fixed-effect. It tests the stability of the parameters (stability test). In this test, the null hypothesis is stated as "pooled least square model (restricted)" and the alternative is the "fixed-effect model (unrestricted)".

The final stage is done the Hausman test to choose which approach is in

accordance with to estimate the parameters stated in Equations 1. It uses the Chi-square value so that a decision of this panel data method selection can be determined statistically. Assume that the errors are not correlated with each other. In this test, the null hypothesis is the "random-effect model" compares with the alternative the" fixed-effect model". In the Hausman test, if the *P*-value of Chi-square is smaller than 0.05 then a fixed-effect is a better method for estimating the panel data in this study.

3. Data Analysis

The model used in this study was shown as follows:

$$HDI_t = \beta_0 + \beta_1 LnPop_{it} + \beta_2 Inf_{it} + \beta_3 Lngdp_{it} + \beta_4 unemp_{it} + e_{it} \quad (1)$$

where:

HDI	is human development of country *i* at period *t*
Ln_Pop	is logarithm of population of country *i* at period *t*
Inf	is inflation rate of country *i* at period *t*
unemp	is unemployment rate of country *i* at period *t*
Lngdp	is logarithm of GDP of country *i* at period *t*

To find out the determinant factor that affects the human development index in ASEAN+2, the panel regression analysis was used. For the first step, a fixed-effect model was estimated and the results were displayed in Appendix Table 2. The result displayed that unemployment and GDP had an impact on the human development index in ASEAN+2. The significant value of constants in this table pointed out that if all explanatory variables do not exist, the value of the human development index will be negative. This result is entirely rational, because if all explanatory variables do not exist, then it indicates the absence of economic development in the country.

The result showed that the population was a direct effect, but insignificant impact on the HDI. It means that the higher people will increase the quality of human development in the selected countries. Nevertheless, this result can't represent Singapore and Brunei Darussalam because those two countries have a population lower than in other countries. They are in the high HDI category. Although the result does not support the hypothesis stated in this study, the finding can suggest the importance of the population control program.

The study pointed out the inflation rate didn't have a directly insignificant relationship with the HDI. It means that if the country has a high inflation rate, it will reduce the purchasing power of the people and affect HDI. This result also supports the hypothesis stated in this study. The GDP had a positive significant relationship

with HDI. It means that the higher the GDP of the country, it would make the higher human development quality. This result pointed out that an increase in GDP shows an improving economy. Countries with higher GDP will have a high human development index, but the other factors have to consider in it. This result supports the hypothesis stated in this study. The unemployment rate had a positive significant impact on the HDI. Thus, the government of those countries must also have a priority to reduce the unemployment rate. This result does not support the hypothesis stated in this study.

In the second step, the Chow test was done to choose a pooled least squares or fixed-effect model. With regard to the Chow test, the cross-section *F* was 11.12 with a *P*-value of 0.000 indicated that the null hypothesis "pooled least-squared (restricted)" was rejected. Thus, the fixed-effect model was suitable in this study. The adjusted *R*-squared was 0.7311 and *F*-statistic was 49.94 with *P*-value =0.0000. This means that the explanatory variables can explain the model approximately (73%). The summary result of the Chow test was displayed in Appendix Table 3.

After the Chow test, the Haussman test was done to choose the suitable method, namely random or fixed-effect model. The summary result was shown in Appendix Table 4. The Chi-square value was 9.87 with a *P*-value of 0.0426, this result suggested that the null hypothesis "random-effect model" was rejected at the 5% level. The fixed-effect model was more suitable model than the random-effect on this panel data analysis. The results of the fixed-effect model were shown in Appendix Table 4.

The results showed that the population was a negatively related with HDI and it was a statistically significant at the 1% level. The same result was found in inflation and it was statistically significant at the 10 % level. The GDP variable was directly related with HDI and it was also highly significant at the 1 % level, and unemployment was at the 5 % level significant directly related to HDI.

V. Conclusion and Recommendation

The Human Development Index (HDI) is a composite statistic of life expectancy, education, and per capita income indicators, which are used to rank countries into four tiers of human development. A country scores higher HDI when the lifespan is higher, the education level is higher, the GDP is higher, and the inflation rate is lower. In this paper, determinant factors of human development index (HDI) of ASEAN+2 were explored by using the panel regression of the fixed-effect model was developed and it was found the variables: population, unemployment rate, and GDP were a significant influence on the HDI but inflation did not have an impact on it.

The policy recommendations from this study are as follows:

- increase of gross domestic product should continue to be pursued, especially in countries that entered the category of medium development and high development.
- control the population and acceleration of economic growth and should more create job opportunities for the unemployed population.

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Appendix

Table 2. The Summary Result of Fixed Effect Model

Variable	Coefficients	Std. Error	*t*-Statistic	*P*-value
Constant	-1.5258	0.5810	-2.63	0.010
Ln_Pop	0.1818	0.115	1.58	0.117
Inf	-0.0003	0.0004	-0.69	0.492
unemp	0.0075	0.0030	2.48	0.014
lnGDP	0.0804	0.0215	3.74	0.000
Explained Variable: HDI		Adjusted *R*-squared=		0.6598
F-statistic = 64.53		Prob(*F*-statistic)=		0.0000

Source: Based on calculation

Table 3. The Summary Result of Chow Test

Variable	Coefficient	Std.Error	*t*-Statistic	*P*-value
Constant	-0.2923	0.0143	-20.40	0.000
Ln_Pop	-0.0199	0.0033	-5.99	0.000
Inf	-0.0013	0.0009	-1.42	0.158
unemp	0.0147	0.0022	6.55	0.000
lnGDP	0.0437	0.0053	8.19	0.000
Explained Variable :HDI , Cross-section *F* = 11.12			**Prob(Corss- section *F*= 0.000)**	
Adjusted *R*-squared = 0.7311,		*F*-statistic= 49.94 Prob(*F*-statistic)=		0.0000

Source: Based on calculation

Table 4. The Summary Result of Hausman Test

Variable	Fixed	Random	Var(Diff.)	*P*-value
Ln_Pop	0.1818	-0.0365	0.2183	0.0000
Inf	-0.0003	-0.0008	0.0004	0.0162
unemp	0.0075	0.0063	0.0012	0.0000
lnGDP	0.0804	0.0771	0.0034	0.0000
Variable	Coefficient	Std. Error	*t*-Statistic	*P*-value
Constant	-0.3004	0.0386	-7.79	0.000
Ln_Pop	-0.0365	0.0087	-4.19	0.000
Inf	-0.0008	0.0004	-1.76	0.078
unemp	0.0063	0.0027	2.34	0.019
lnGDP	0.0771	0.0123	6.28	0.000

Chi-Sq. Statistic= 9.87 (*P*-value= 0.0426) ,

F-statistic =64.53, (*P*-value=0.0000),
Explained Variable=HDI

Source: Based on calculation

Variable Description

Variable	Definition
Human Development Index (HDI)	Human Development Index is an index used to rank countries by level of "human development". It contains three dimensions: health level, educational level and living standard.
Population(*Ln_Pop*)	The whole number of people or inhabitants in a country or region.
Inflation Rate(annual %) (*inf*)	Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency.
Gross Domestic Product (*Lngdp*)	It is the final value of the goods and services produced within the geographic boundaries of a country during a specified period of time.
Unemployment rate(*unemp*)	The percentage of unemployed workers in the total labour force.

Age at First Marriage of Women in Myanmar: A Statistical Analysis on the Role of Socio-economic and Demographic Factors

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ABSTRACT : The age at first marriage depends on and results in varying socio-economic and demographic features. Utilizing the 2015-2016 Myanmar Demographic and Health Survey Data, this study examined determinants of age at first marriage of women in Myanmar. The analysis was made using the Cox proportional hazard model based on data collected from 8607 ever-married women in the age group 15 to 49. The result shows that higher level of education, higher wealth quintile, and women in urban area significantly elongated age at first marriage but younger birth cohort and lager household size significantly shortened age at first marriage. It reveals that timing of marriage is partly governed by socio-economic and demographic factors and marriage practices of the society although modernization factors have roles to play. The findings indicate the importance of considering the context within which marriage takes place to address reproductive health problems of women and speed-up the achievement of the targets set in the National Population Policy of Myanmar.

Key words *: Age at first marriage, Socio-economic and demographic factors, Cox proportional hazard model*

I. INTRODUCTION

Marriage is formalized by a wedding or a small ceremony at the community

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or family level (Haviland et. al, 2011). It is a vital family organization for both the individual and the societies at large. Marriage is a remarkable event in one's lifetime and the most essential thing for family foundation or family establishing process (Palamuleni, 2011). Different reasons of marrying of peoples may include emotional, financial, religious, social or legal purposes. The marriage is not only the individual desires but also it might be influenced by the family, perspective marriage rules, societal effects or prejudice by genders.

Age at marriage is a point at which the transition to adulthood, certain opportunities in education, employment, and participation in society are closed out in many communities and the starting of regular experience to the risks of pregnancy and motherhood (United Nations, 1990).

In some parts of the world, forced marriage and early marriage practiced as a culture or tradition, on the other hand, such practice is penalized by law out of women's right, or children (both male and female) rights because of the international law (US Department of State, 2008).

In the developing world, early marriage is commonly connected with early childbearing and the main purpose of marriage in most cases is to have children. Considerable health risks for both the mother and the child could be exposed due to early childbearing. Zabin and Kiragu (1998) claimed that young mothers are more likely to experience pregnancy related problems and unable to deal with them as well as this frequently lead to maternal mortality. Ikamari, 1996; Zabin and Kiragu (1998) also pointed that there are higher risks of morbidity and mortality as a result of children born to young mothers.

Delayed marriage directly affects completed fertility by decreasing the number of years available for childbearing. Women who married later may possibly complete their education, build their capacity and develop their career interests. Amin (1995) and Jensen et. al (2003) discussed that these career interests may, in turn, inspire women to control family size and / or extend the birth spacing. Moreover, late marriage helps women to be matured in conjugal life as well as in decision making particularly when they would take their child and family size.

According to the Thematic Report on Fertility and Nuptiality of Myanmar, the proportion of never married women is an exceptionally high. Twelve percent of the women remain never-married until 50 years of age. This figure is the second highest in Southeast Asia after Singapore which is the highest with 13%. Never married women in Myanmar are more than 4 times as many as Laos, and more than 2 times as many as Cambodia and Vietnam. For ever married women, the mean age at first marriage is 23.6 years which is higher than 21.3 years in 1973. Divorce rates in Myanmar are very low. Only 2% of men and 3% of women are divorced or separated (DOP, 2016).

In Myanmar, 60% of women and 62% of men age at 15-49 are currently married. Nineteen percent of women and 7% of men age at 25-49 were married by age 18. Among women age at 25-49, median age at marriage is 22.1. This means that 50% of them are married by 22.1 years. The median age at married for men is 24.5. Therefore, women get married about two years earlier than men. The median age of marriage of women in urban is 24.5 and rural 21.3. Women in rural areas get married more than three years earlier. The median age at first marriage in Myanmar rises with education and wealth (Ministry of Health and Sport and ICF, 2017).

Previously, several factors that seem to affect the timing of marriage have been recognized by a number of studies (Oppenheimer, 1988; Harwood-Lejune, 2001). Some of the factors are region of residence, place of residence, education, occupation, economic status, religion and ethnicity. United Nations (1987, 1988 and 1990), Lesthaeghe et al. (1989) and Kaufman and Meekers (1998) deliberated that increases in age at marriage are related to major social-structural changes such as increases in educational level, urbanization, and the development of new roles for single women. Jejeebhoy (1995) found that education is a sole factor which is mostly and strongly associated with the delayed marriage, however the association may be subject to threshold effects.

Age at first marriage, one of the most significant issues in population dynamics as it influences fertility, mortality and migration, has a strong impact on the diversity of socio-economic and demographic factors. The age at first marriage, particularly for females, has been considered a crucial element of the development process. It is argued that by late marriage, women may stay in school lengthier, find more appropriate spouse, achieve empowerment and push the childbearing age, better child outcomes, lesser births and slower population growth. Unfortunately, despite the importance of age at marriage in an individual's life history and its role in fertility and mortality transitions, during the past decade, no study has been undertaken to investigate the determinants of age as first marriage of women in Myanmar.

For these reasons, this study scrutinizes the role of socio-economic and demographic factors on women's age at first marriage. In particular, the major aim of this study is to determine the factors which influence the age at first marriage of women in Myanmar so as to manipulate these factors to increase or decrease the age at first marriage of women and thereby control fertility and population growth rates to manageable levels.

II. Data and Method

1. Source of Data

In this study, the secondary data from the 2015-2016 Myanmar Demographic and Health Survey was used. Although MDHS (2015-16) collected data on 12885 women, this study targeted only on 8739 ever married women age between 15 to 49 years. Sampling weight was applied to obtain nationally representative estimates and only 8607 ever married women age between 15 to 49 years are included in the final weighted samples.

2. Key Variables and Measurements

Based on the previous studies, age at marriage is related to a variety of socio-economic and demographic factors. Hence, following explanatory variables which are available from the 2015-16 MDHS were selected in this study. The identification and measurement of explained (Y) and explanatory variables (X_i) considered in this study are as below.

Age at first marriage Y = 1 if below 22 years = 0 if 22 years and above States/ Regions X1 = 1 if Shan State = 2 if Kayah State = 3 if Kachin State = 4 if Kayin State = 5 if Chin State = 6 if Sagaing Region = 7 if Tanintharyi Region = 8 if Bago Region = 9 if Magway Region = 10 if Mandalay Region = 11 if Mon State = 12 if Rakhine State = 13 if Yangon Region = 14 if Ayeyarwady Region = 15 if Nay Pyi Taw	Educational level X2 = 1 if no education = 2 if primary level = 3 if secondary level = 4 if higher level Wealth quintiles X3 = 1 if poorest quintile = 2 if poorer quintile = 3 if middle quintile = 4 if richer quintile = 5 if richest quintile Residence X4 = 1 if rural = 2 if urban Age at first sex X5 = 1 if less than 22 years = 2 if 22 years and above	Birth order X6 = 1 if first = 2 if second = 3 if third = 4 if fourth and above Birth cohort X7 = 1 if 1961-1970 = 2 if 1971-1980 = 3 if 1981-1990 = 4 if 1991-2000 Household size X8 = 1 if less than 5 = 2 if 5 and above Employment status X9 = 1 if employed = 2 if unemployed

According to MDHS findings, median age at marriage is 22.1 among women age 25-49, the cut off point for the explained variable Y was considered as 22 years. On average, women initiate sexual intercourse at a median age of 22.5. Therefore, the cut off point for the age at first sex was considered as 22 years.

3. Cox Proportional Hazard Model

In this study, Cox proportional hazard regression analysis was used to analyze the effect of the explanatory variables on the outcome variable "women's age at first marriage". In assessing the net effects of the selected factors, the multivariate regression analysis was conducted using hazard analyses, specially the Cox proportional hazard model (Cox, 1972; Halli & Rao, 1992). The description of the model has been given in the following subsections.

A parametric model based on the exponential distribution may be written as

$$h_i(t) = \exp(\alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_k X_{ik} + \epsilon_i)$$

Or, equivalently,

$$\log h_i(t) = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_k X_{ik} + \epsilon_i$$

That is, as a linear model for the log-hazard or as a multiplicative model for the hazard. Here, "i" is a subscript for observation, and the X's are the covariates. The constant α in this model represents a kind of log-baseline hazard, since $\log h_i(t) = \alpha$ [or, $h_i(t) = e^{\alpha}$] when all of the X's are zero.

The Cox model, in contrast, leaves the baseline hazard function $\alpha(t) = \log h_0(t)$ unspecified:

$$h_i(t) = h_0(t) \exp(\beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_k X_{ik} + \epsilon_i)$$

Or, equivalently,

$$\log h_i(t) = \alpha(t) + \beta_1 x_{i1} + \beta_2 x_{i2} + \ldots + \beta_k x_{ik} + \epsilon_i$$

Or, equivalently,

$$\log \frac{h_i(t)}{h_0(t)} = \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_k X_{ik} + \epsilon_i$$

This model is semi-parametric because while the baseline hazard can take any form, the covariates enter the model linearly. Consider, now, two observations i and that differ in their X-values, with the corresponding linear predictors

$$\eta_i = \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_k X_{ik} + \epsilon_i$$

and

$$\eta_{i'} = \beta_1 X_{i'1} + \beta_2 X_{i'2} + \ldots + \beta_k X_{i'k} + \epsilon_{i'}$$

The hazard ratio for these two observations,

$$\frac{h_i(t)}{h_i'(t)} = \frac{h_0(t)e^{\eta_i}}{h_0(t)e^{\eta_{i'}}} = \frac{e^{\eta_i}}{e^{\eta_{i'}}}$$

is independent of time "t". Consequently, the Cox model is a proportional-hazards model. Remarkably, even though the baseline hazard is unspecified, the Cox model can still be estimated by the method of partial likelihood, developed by Cox (1972) in the same paper in which he introduced the Cox model.

In the model, the time variable "t" denotes the age at which first marriage takes place. The outcome variable, h(t), is the hazard rate, the rate at which marriage occurs. The term h0 is the baseline hazard function that varies only with t. The variables X1, X2, . . . , Xk are the covariates (explanatory variables), the coefficients β1, β2, ... , βk are the regression-like coefficients showing the effects of the covariates and is a random error term. In essence, the model shows how the covariates representing the characteristics of a sub-group of women influence their risk of entering marriage in comparison to the baseline group. An exponential β-value greater than one means that the covariate has the effect of raising the hazard rate, or the risk of early marriage, compared to the baseline group, while an exponential b-value of less than one has the opposite effect. An exponential β-value of one is neutral and exerts no effect.

In the interpretation of results, a hazard ratio of 0.4, (for example), means the group concern has a 60% lower hazard then the reference category (Lehrer, 2008; Pettifor et al., 2004). Also, a hazard ratio of 1.4 would imply that the group has 40% higher hazard than the reference category. The statistical software used modeling in this study is STATA Version 15.

III. Results and Findings

1. Descriptive Analysis of Women's Background Characteristics

Appendix Table 1 demonstrates the frequency distribution of the ever-married women under study by their background characteristics. The percentage of ever-married women in this study varies from 0.5% (Kayah State) to 13.8% (Ayeywarwady Region). Educational attainment among the ever-married women is found illiterate (15.9%), primary level (47.1%), secondary level (29.2%) and higher level (7.7%). The majority, 20.4% and 20% of ever-married women are from the poorest and poorer wealth index groups respectively. The most of the ever-married women (73.4%) have grown up in rural areas. The 60.3% of ever-married women have their first sex at before 22 years and 39.7% ever-married women have their first sex at 22 years and above. Of the ever-married women, 23.1% are the first child of their parents, 20.1% are the second child, 16.5% are the third child and 40.3% are the fourth child or above. About 13.3% of ever married women were born in 1991-2000, 16.2% of them were born in 1961-1970, 34.4% of them were born in 1981-1990 and 36% of them were born in 1971-1980. The 44.8% of ever-married women have 5 household members and above and 55.2% of ever-married women have less than 5 household members. Among the ever-married women, 65% of them are employed while 35% of them do not have any work. About 26.2% of the women married for the first time before 18 years and 73.8% of those married for the first time at the age of 18 years and above.

2. Relationship between Women's Age at First Marriage and Background Characteristics

The association between women's age at first marriage and their background characteristics are examined using log rank test for equality of survivor functions. Appendix Table 1 shows the association between women's age at first marriage and their background characteristics. Based on the results from log rank test of survivor functions, region, education level, wealth quintile, residence, age at first sex, birth cohort, household size and employment status are found to be significantly associated with women's age at first marriage at 1% level.

3. Determinants of Women's Age at First Marriage

Cox proportional hazards regression model is used to examine the determinants of women's age at first marriage. The results of the Cox proportional hazards regression analysis are presented in Appendix Table 2. The results reveal that region,

education level, wealth quintile, residence, age at first sex, birth cohort and household size are significant factors for marriage timing of women. According to the result of Chi-square statistics 1954.31 (p-value = 0.000), the model is significant at 1% level. Since log likelihood statistics is -19426.1, it can be said that the association between the explained variable and explanatory variables is supported.

Kachin, Kayah, Tanintharyi, Mandalay, Mon and Ayeyarwaddy are 18%, 22%, 19%, 19%, 23% and 18% less likely to marry earlier than Shan, respectively. It shows that the risks of getting early marriage in these states and regions are lower compared with Shan. The women with primary education, secondary education and higher education are 0.26%, 0.53% and 0.89% less likely to marry earlier than those who have no education, respectively. Therefore, it is found that the higher the level of education, the lesser probability of marrying at their early age. Women's middle, richer and richest wealth quintiles are 18%, 19% and 29% less likely to marry earlier than the women's poorest wealth quintile, respectively. It is found that the higher wealth quintile of women is less likely to marry earlier than the lower wealth quintile of women. The women live in urban area have less risk ratio (16% lower) of marrying at younger age compared to those in rural area. The women who have first sex at 22 years old and above have less risk ratio (89% lower) of marrying at younger age compared to women who have first sex before 22 years old. The women born in 1991-2000 are more likely to marry earlier than those born in 1961-1970. The risk of getting early marriage is 12% higher in households with 5 and more family members than households with less than 5 family members.

IV. Discussions

The major purpose of this study is to identify the socio-economic and demographic determinants of age at first marriage in Myanmar. The analyses reveal that the educational level, region, place of residence, age at first sex, birth cohort and family members in the household are statistically significant to age at first marriage of women.

The study found that the risk of getting early marriage is lower among women with primary and above educational level than those with no education. The result of this finding could be the educated women can identify the consequences of early marriage. They may have plans to learn, to strengthen economically, socially and they make themselves strong in different aspects before marriage. This finding is consistent with the findings which show that the higher the level of education of the women, the lower the hazard of early marriage by Adebowale et al. (2012), Aktar et

al. (2017) and Ikamari (2005).

The finding of this study revealed that early marriage is significantly lower in Kachin, Kayah, Tanintharyi, Mandalay, Mon and Ayeyarwaddy than Shan. In different states and regions, there may have diverse socio-economic development levels, culture, tradition and religion, which may show to variations in age at first marriage. Furthermore, the tradition, awareness about the consequences of early marriage, poor implementation of policies and programs, less civilization of the states and regions, infrastructure and others effects can lead the timing of first marriage.

This study discovered that the higher wealth quintile of women is lesser risk of marrying earlier than the lower wealth quintile of women. This finding approves that the results of increase in wealth reduces the propensity to marry early by Amoo (2017).

The finding of this study showed that women who lived in urban area had a lower risk of early marriage than rural area i.e., hazard ratio of women living in urban is lesser than those of rural area. In rural areas, there are institutional and normative structures, for example, the affinity and extended family. Hence, early marriage and childbearing can be promoted. This finding suggests the results of the studies conducted by Adebowale et al. (2012) and Aktar et al. (2017).

This study exposed that the risk of getting first marriage for women who had first sex at less than 22 years was higher than who had first sex at 22 years and older. When women who had first sex at under 22 years, they would expose to unsafe sex, pregnancy and others. Also, they couldn't have the right to decide when they marry, since they depend on their families. Because of these and other reasons, they would have been enforced to marry early, whereas women who had first sex 22 years and older, they can convince when they marry and they can challenge early marriage. This result is similar to the finding of Adedokun (1999) which is women in urban areas who engaged in first sexual intercourse before 15 years were more likely to enter into marriage than those between 15-19 years and 20 years.

This study found that women born in 1991-2000 have significantly higher risk of early marriage than those born in 1961-1970. It could be due to change in the behavior and lifestyle of young generation and effect of social media on the youth. These issues are needed to investigate as further studies. This finding does not support the results of the slight increase in the age at first marriage by Kamal (2011) and Gurmu and Etana (2014).

This study indicated that the risk of getting early marriage was higher among households with high family members than households with low family members. This finding is consistent with Getnet et al. (2019). This result confirms that the households with high family members could be exposed for economic crisis; this would facilitate early marriage of women in the families.

V. Conclusion and Recommendations

This study concludes that women age at early first marriage is increasing in Myanmar, though at a very slow rate. It is highlighted that the relative risk of marrying at younger age is reduced as education increases to higher level and wealth status rises to the richest level. Therefore, assess to higher education and professional jobs which could empower the girls to reject or negotiate marriage offers until maturity ages and thereby delay marriage. Women who had early first sex would have the risk of getting pregnancy and health related problems. Hence, it is fundamental to the formulation of policy to hinder the early marriage of women. Overall the study, the reduction in marriage of teenage girl has potential to reduce health problems such as abortion, HIV and AIDS, and possible delivery of the Sustainable Development Goals. Finally, it is essential to make future investigations on the reasons and implications of early marriage in Myanmar. Since there are more than 135 ethnic groups and some conflict areas in Myanmar, further analysis should more emphasize on these points. Both multidisciplinary and qualitative studies should be conducted as further studies.

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Appendix

Table 1. Percent Distribution and Bivariate Analysis of Age at First Marriage among the Ever-married Women by Selected Background Characteristics

Variables		Number	Percent	Log rank test (χ^2)	P-value
States/ Regions	Shan State	1,004	11.7	81.74***	0.000
	Kachin State	267	3.1		
	Kayah State	44	0.5		
	Kayin State	223	2.6		
	Chin State	74	0.9		
	Sagaing Region	917	10.7		
	Tanintharyi Region	191	2.2		
	Bago Region	846	9.8		
	Magway Region	705	8.2		
	Mandalay Region	934	10.9		
	Mon State	301	3.5		
	Rakhine State	535	6.2		
	Yangon Region	1,160	13.5		
	Ayeywarwady Region	1,190	13.8		
	Nay Pyi Taw	216	2.5		
Education level*	No education	1,368	15.9	466.02***	0.000
	Primary level	4,056	47.1		
	Secondary level	2,516	29.2		
	Higher level	664	7.7		
Wealth quintiles	Poorest quintile	1,807	21.0	258.69***	0.000
	Poorer quintile	1,756	20.4		
	Middle quintile	1,723	20.0		
	Richer quintile	1,675	19.5		
	Richest quintile	1,647	19.1		
Residence	Rural	6,320	73.4	64.51***	0.000
	Urban	2,287	26.6		
Age at first sex	Less than 22 years	5,187	60.3	1359.82***	0.000
	22 years and above	3,420	39.7		
Birth order	First	1,985	23.1	3.16	0.368
	Second	1,727	20.1		
	Third	1,424	16.5		
	Fourth and above	3,471	40.3		
Birth cohort	1961-1970	1,398	16.2	199.30***	0.000
	1971-1980	3,101	36.0		
	1981-1990	2,964	34.4		
	1991-2000	1,144	13.3		
Household size	Less than 5	3,855	44.8	21.97***	0.000
	5 and above	4,752	55.2		
Employment status*	Unemployed	3,009	35.0	10.40***	0.001
	Employed	5,598	65.0		
Age at first marriage	Less than 18 years	2,251	26.2	81.74***	0.000
	18 years and above	6,356	73.8		
Total		8,607			

*Mission data on education level for 3 cases and employment status for 1 case
Note: *, **, *** represents 10%, 5% and 1% significant level
Source: MDHS (2017)

Table 2. Cox Proportional Hazards Regression Results of Age at First Marriage the Married Women in Myanmar

Variables		Coefficient	Hazard Ratio	z	P-valu e	95% CI for HRs	
States/ Regions	Shan State (ref)						
	Kachin State	-0.20*	0.82	-1.69	0.092	0.65	1.03
	Kayah State	-0.25**	0.78	-2.11	0.035	0.61	0.98
	Kayin State	-0.08	0.92	-0.71	0.479	0.74	1.15
	Chin State	-0.15	0.86	-1.33	0.185	0.68	1.08
	Sagaing Region	0.07	1.07	0.67	0.501	0.87	1.32
	Tanintharyi Region	-0.21*	0.81	-1.77	0.076	0.64	1.02
	Bago Region	-0.06	0.94	-0.52	0.600	0.76	1.17
	Magway Region	-0.11	0.89	-1.00	0.316	0.72	1.11
	Mandalay Region	-0.21*	0.81	-1.74	0.081	0.65	1.03
	Mon State	-0.26**	0.77	-2.15	0.032	0.61	0.98
	Rakhine State	-0.05	0.95	-0.45	0.651	0.78	1.17
	Yangon Region	0.07	1.07	0.64	0.521	0.86	1.34
	Ayeywarwady Region	-0.19*	0.82	-1.77	0.076	0.66	1.02
	Nay Pyi Taw	0.10	1.11	0.93	0.355	0.89	1.37
Education level	No education (ref)						
	Primary level	-0.30***	0.74	-5.48	0.000	0.66	0.82
	Secondary level	-0.75***	0.47	-10.41	0.000	0.41	0.55
	Higher level	-2.24***	0.11	-8.06	0.000	0.06	0.18
Wealth quintile	Poorest quintile (ref)						
	Poorer quintile	-0.03	0.97	-0.51	0.611	0.86	1.09
	Middle quintile	-0.20***	0.82	-3.06	0.002	0.72	0.93
	Richer quintile	-0.16**	0.81	-2.21	0.027	0.74	0.98
	Richest quintile	-0.34***	0.71	-3.51	0.000	0.59	0.86
Residence	Rural (ref)						
	Urban	-0.18***	0.84	-2.87	0.004	0.74	0.95
Age at first sex	Less than 22 years (ref)						
	22 years and above	-2.23***	0.11	-24.81	0.000	0.09	0.13
Birth order	First (ref)						
	Secondary	0.00	1.00	0.05	0.959	0.88	1.14
	Third	-0.01	0.99	-0.18	0.858	0.87	1.13
	Fourth and above	-0.05	0.95	-0.87	0.386	0.85	1.06
Birth cohort	1961-1970 (ref)						
	1971-1980	0.05	1.05	0.80	0.423	0.93	1.20
	1981-1990	0.11	1.12	1.61	0.107	0.98	1.28
	1991-2000	0.47***	1.60	6.32	0.000	1.38	1.85
Household size	Less than 5 (ref)						
	5 and above	0.11**	1.12	2.49	0.013	1.02	1.22
Employment status	Unemployed (ref)						
	Employed	0.04	1.04	0.84	0.400	0.95	1.13
Log Likelihood		-19426.1					
LR Chi-square (31)		1954.31*** (P-value=0.000)					

Note: * represents 10% significant level
** represents 5% significant level
*** represents 1% significant level

Source: MDHS (2017)

Effect of EWOM, Perceived Risk, Destination Image on Travel Intention : Case Study of Kalaw Township

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ABSTRACT : The aim of this study was to examine the effect of EWOM, perceived risk, destination image on travel intention of visitors in Myanmar. Kalaw Township used as the study area in this research. Both primary and secondary data was applied in this study. Primary data was collected by using the structured questionnaire. The target sample size was 214 visitors who have the travelling experiences to Kalaw. This research used the systematic random sampling method for collecting the data**.** The multiple linear regression method was mainly used for analysis the collected data. The EWOM quality and EWOM trust have positively significant effect on travel intention. The performance risk is negatively related with travel intention. Natural attractiveness, cultural attractiveness and travel environment have positively significant relationship with travel intention of visitors to Kalaw. Local residents, local government and other commercial organizations in hospitality industry should collaborate in order to make the effective tourism management plan for Kalaw township.

***Key Words** : Electronic Word of Mouth Marketing,Destination Image,Perceived Risk*

I. Introduction

People intent to travel or commitment to travel describe as travel intention (Jang,2009). There are numerous factors that cause the travel intention of people. In

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addition, people want to travel for many reasons such as relaxation, business content, adventure, pilgrimage and so on. In previous days, most of the Myanmar citizen intent to travel for pilgrimage because of traditions. According to the changing of travelling behavior most of the travelers tend to travel for tracking, relaxation, health care etc.

This research mainly focused on the travel intention to Kalaw.Its located in Taungyi district of southern Shan state of Myanmar. Kalaw had been popular in Colonial period. Kalaw is located near the Inlay lake that is the very critical point to attract the travelers. The main reason of travel to Kalaw is pilgrimage for senior citizens of Myanmar. Tracking, bicycling, photographing and adventures activities are the major reason for young generation who intent of travel to Kalaw. Therefore, this study examine the travel intention and major determinants factors that can influence on travel intention. The strange point of this study is examining the effect of electronic word of mouth marketing (EWOM) on travel intention of travelers because EWOM is the major push factor to stimulate the travel intention of people in nowadays.

II. Rationale of the Study

The tourism sector can earn the foreign income for nations around the world. The perceived value on destination image can accelerate the travel rate for this place. If the domestic travelers and foreign travelers more preference destination place, it will influence on regional development. Domestic tourism sharply increase in these years with appearances of new destination place because of political and economic reform process of Myanmar since 2010.

According to the Ministry of Hospitality and Tourism statistical data, most of the local tourists are more preference on Southern State to travel because of Inlay lake, Kalaw township, Pindaya and other attractive destination. All of these destination, travelers choose the Kalaw township as the focal area because it is convenience to visit the other destination places in Southern Shan state. A small pond with fascinating blue water near the Pindaya has become the new attractions for travelers in these years, mainly through social media and word of mouth Thus, Electronic word of mouth (EWOM), perceived risk and destination image used as the influencing factors on travel

intention in this study.The key motive for conducting this research is extracting the evidence to explain why people more intent to travel in recent years.

Ⅲ. Objectives of the Study

The major objectives of this study are –

(i) To investigate the effect of EWOM on travel intention of local travelers in Myanmar.

(ii) To examine the effect of perceived risk on travel intention of local travelers in Myanmar.

(iii) To analyze the effect of destination image on travel intention of local travelers in Myanmar.

IV. Scope and Method of the Study

This study investigates the effect of EWOM , perceived risk and destination image on travel intention of local travelers in Myanmar. A sample for this study is local travelers whose have travelling experiences to Kalaw, however the population in this study is infinite population.The sample size determined by using the formula proposed by Pongwichai (2009) which is the adoption of Yamane (1973).Although the calculated sample size was 385, most of the respondents were fail to give the answer in right time. Moreover, some of the respondents' answer are not valid for this study.Thus, the sample size was 214 local travelers after screening and reviewing the invalid ones. The systematic random sampling was applied for this study.

Travelers' perception on travel intention were examined with 6 item adopted form Gretzel & Yoo (2008). The other determinant factors such as electronic word of mouth, perceived risk and destination image were examined by using five point Likert scale questionnaire. Data were obtained for this study through google survey and face to face interview.The multiple lineal regression analysis method was used to analyze the relationship between dependent variable and independent variables. In addition, the reliability analysis was used to examine the reliability of collected data.

V. Theoretical Background

This section describe the literature work regard with electronic word of mouth, perceived risk, destination image and travel intention. After reviewing the previous literature, the conceptual framework was developed for this study.

1. Electronic Word of Mouth (EWOM)

The revolution of internet was the critical role for transforming the people's life style. People widely use the internet in order to share the information, experiences, thoughts and opinions (Vernuccio, 2014). EWOM was constructed from three dimensions- EWOM quantity, EWOM quality and EWOM trust.The total numbers of reviewers and comments which posted in online was described as EWOM quantity (Lizbeth L, 2016). Quality of EWOM refers to the persuasive strength of comments embedded in an informational message (Bhattacherjee, 2006).

2. Perceived risk

In recent years, issues of tourist safety and risk have become prominent and growing negative effect of travel intention (Sönmez & Graefe, 1998). In this study, psychological risk, performance risk and financial risk use as key attributes for measure the perceived risk. Psychological risk means possibility that a trip will not reflect the consumer's personality or image (Sharipour, 2014). The trip will not give value for the spent money (Roehl & Fesenmaier, 1992). The performance risk refers to not receiving holidy benefits due to the travel product or service not performing well (Reisinger & Mavondo, 2006).

3. Destination Image

Destination image is critical for tourism development within a destination (Chon, 1990). In this study, natural attractiveness, cultural attractiveness and travel environment take account as the destination image. Natural attractiveness is categorized by tangible factors and intangible factors including fauna, flora, mountains, water and geologic features and islands and parks (Deng, King & Bauer, 2002). Travel environment is assumed as the environmental characteristics such as a pleasant climate, clean waters and secure surrounding that appeal or attract travelers to a destination (Tang, 2015).

4. Travel Intention

Fishbein and Ajzen (1975) viewed intention as a special case of beliefs, in which the object is always the person himself/herself and the attribute is a behavior. Intention to travel was the traveler's perceived likelihood of visiting a particular destination within a specific time period (Woodside & Lysonski, 1989).Affected by EWOM, destination image, perceived risk, intention to travel to a destination has a direct influence on destination choice. Intention to travel is significantly related with actual behavior under a specific time period and situation and affected by perception of risk, EWOM and destination image.

People can use the EWOM as the communication channel for share the positive and negative feedback regard with travel destination (Weerawit L. and Panjakajornsak V., 2014). Marketers are interested in the concept of destination image mainly because it relates to decision-making and sales of tourist products and services (Jenkins, 1999). Perception of risk can alter travel demand patterns, and significantly impact tourists' decision-making processes (i.e., destination image and intention to travel), and future travel behavior (Bramwell &Rawding, 1996).

5. Conceptual Framework of the Study

Based on these literature work, the conceptual framework was developed of this study. The previous research studies also support the development of conceptual framework for this study. Albarq (2013) and Filieria R (2013) explored the relationship of electronic word of mouth and travel intention.Xequing Qi (2005) investigated the effect of destination image and perceived risk on travel intention. All of these variables and attributes were extracted from the previous research work. Moreover, the variables of this study can reflect the travel intention of local travelers in current situation.The conceptual framework of this study is shown in figure (1).

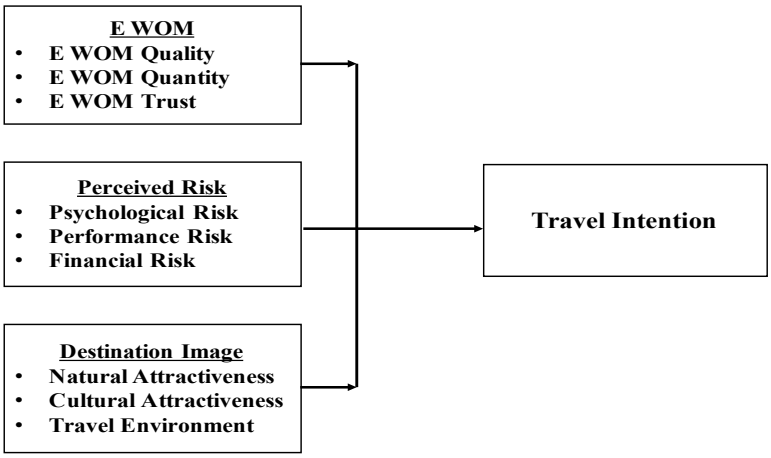

Figure 1. Conceptual Framework of the Study

Source: Own Compilation (2020)

IV. Empirical Results

Analysis the effect of electronic word of mouth, perceived risk and destination image on travel intention is covered in this section. Descriptive analysis, reliability test and multiple regression analysis are used in this study. The reliability coefficients of ten variables, mean value and standard deviation are described in Table (1).

Table 1. Reliabiity Analysis

	Variables	Mean	Std.Div.	Cronbach's Alpha
EWOM	EWOM Quality	3.590	0.680	.882
	EWOM Quantity	4.084	0.652	.905
	EWOM Trust	3.140	0.556	0.905
Perceived Risk	Psychological Risk	1.730	0.556	0.688
	Performance Risk	2.287	0.785	0.841
	Financial Risk	3.149	0.653	0.791
Destination Image	Natural Attractiveness	4.095	0.598	0.734
	Cultural Attractiveness	3.691	0.685	0.841
	Travel Environment	3.548	0.722	0.871
	Travel Intention	3.882	1.028	0.860

Source: Survey Data (2020, October)

As presented in Table (1) the perceptions of respondents are described by using

the mean value. EWOM quantity have the highest mean value of EWOM attributes that highlight the number of online comments and reviewers' comments are the crucial factor for exploring the travel intention. Financial risk has the highest mean value among of perceived risk factors. It points out that respondents have apprehension regard with they get lower value rather than they paid. Most of the respondents more preferred to decide travel to Kalaw due to it's natural attractiveness. The mean value of travel intention is 3.882 that likely the beyond the neutral skirled.The value of Cronbach's Alpha are over 0.6, it can take account as the good result for relability of questionnaire (Sekaran and Bougie, 2016).

This study conduct the multiple linear regression analysis to reach the research objectives. It used to examine the effect of EWOM, perceived risk and destination image on travel intention of local travelers in Myanmar. The results of this analysis are presented in table (2), (3) and (4) respectively.According to this result, electronic word of mouth quality and electronic word of mouth trust have positively significant relationship with travel intention.

Table 2. Effect of EWOM on Travel Intention

Model	B	SE	Sig
(Constant) Travel Intention	2.050	.374	.000
EWOM Quality	.278	.088	.002***
EWOM Quantity	.129	.103	.214
EWOM Trust	.222	.107	.040***
R2	.218		
Adjusted R2	.203		
F value	14.486***		

Source: Survey Data (2020, October)

This result highlight that travel bloggers and other social media users can stimuli local travelers to decide for travelling to Kalaw by offering clear and trustworthy online comments and reviews regard with Kalaw. Nowadays, social media users transmit product and service information on the social media platform that well support the travel intention for travelers. Travelers are more confidence on travel intention by viewing reviews and comments of Kalaw destination on social media platform.

According the second objective of this study, Table (3) describes the effect of perceived risk on travel intention. Psychological risk, performance risk and financial risk used as the key attributes for perceived risk. The respondents' perception on risk are crucial for stimuli the travel intention.

Table 3. Effect of Perceived Risk on Travel Intention

Model	B	SE	Sig.
(Constant)	4.387	.261	.000
Travel Intention			
Psychological Risk	-.119	.099	.228
Performance Risk	-.175**	.094	.063
Financial Risk	.044	.090	.628
R2	.061		
Adjusted R2	.047		
F value	4.503***		

Source: Survey Data (2020, October)

This result highlight that travel intention decrease if the performance risk have been occurred in this place. If the service quality of hotels and restaurants in Kalaw are not the satisfactory level, it not well attract local travelers to go to Kalaw. The hospitality mindset of local residents can slightly reduce the performance risk. This result shown respondents' perceptions on performance risk can decrease the travel intention of local travelers.

Table (4) shown the effect of destination image on travel intention of local travelers to Kalaw that well support the third objectives of this study.In this study, destination image is composed by natural attractiveness, cultural attractiveness and travel environment. Destination image can significantly effect of travel intention.

Table 4. Effect of Destination Image on Travel Intention

Model	B	SE	Sig.
(Constant)	.299	.274	.000
Travel Intention			
Natural Attractiveness	.275***	.077	.000
Cultural Attractiveness	.183***	.077	.019
Travel Environment	.512***	.065	.000
R2	.514		
Adjusted R2	.507		
F value	73.809***		

Source: Survey Data (2020, October)

The result of this analysis is shown in this table. The natural attractiveness, cultural attractiveness and travel environment have positively significant effect on travel intention. This analysis show destination image is the critical determinant for travel intention. The respondents' intention to travel has occurred by viewing the naturalistic environment and historical heritage place. Kalaw is one of the beautiful destination place in Myanmar that well stimulate the respondents' travel intention.

V. Conclusion

This study are conducted with the purposes to examine the effect of EWOM, perceived risk and destination image on travel intention of local travelers to Kalaw. This section revealed the findings and recommendations of this study.

1. Findings

This study asserted the electronic word of mouth quality and electronic word of mouth trust positively effect on travel intention of local travelers to Kalaw.This result makes the evidence for online reviews and comments are key determinants for increase for the travel intention of respondents.Electronic word of mouth also support the notion of increase travel intention of visitors in Myanmar.In addition, online reviews and comments are critical for building the trust of destination image in visitors' mind.In one side, performance risk negatively significant relationship with travel intention of local travelers. This result point out respondents' perception on performance risk can reduce the travel intention of visitors. The hospitality services of Kalaw are not reach the satisfactory level for visitors, it will dilute the travel intention.

The last findings of this study is natural attractiveness, cultural attractiveness and travel environment have positively significant effect on travel intention of visitors to Kalaw.This result express destination image is the critical role for exploring the travel intention of visitors. Kalaw is famous destination in Myanmar due to it's natural heritage, cultural heritage and facilitating conditions for travelling. Kalaw's weather is comfortable for visitors. Kalaw located near around the Inlay lake that can provide the traditional value, custom of Shan ethnic for visitors. Pindaya canvas, Blue water pond, historical pagodas and other beautiful hills are the major driving force to stimuli the travel intention of visitors in Myanmar.

2. Recommendations

The recommendations and suggestions make on the research findings and objectives of this study. In the social media age, electronic word of mouth become the effective communication tool for businesses. This study highlight that EWOM quality and EWOM trust are the key driving force for stimuli of travel intention of visitors. Trustworthy information about destination is key impetus for exploring the travel intention of visitors. Therefore, local residents and travelers whose experiences travelling to Kalaw need more transmit of the accurate information of Kalaw destination on social media platform in order to attract local and foreign

travelers.Hotels and resturants of Kalaw should more apply the digital marketing strategies to promote the image of Kalaw and their firms.

Travelers' concern about risk has become the critical issue for hospitality industry.In this study, performance risk has negatively significant effect on travel intention Hotels, restaurants, transportation firms should more upgrade and try to improve their service performance in order to attract the local and foreign travelers.Local residents should cooperate with local government in order to prevent the suffering of natural environment in the long term.This paper shown the destination image have positively significant effect on travel intention. Local residents, local government, hotels, restaurants and all stakeholder have obligations to control the natural environment suffering. The businesses in hospitality industry should promote the local traditional value by integrating their core services.All of these stakeholders should create the men made destinations for attract visitors in Kalaw township.The findings and recommendations of this study can significantly contribute to tourism development of Kalaw township. The booming of local travelling can bring the opportunities for local development.

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Satisfaction and Loyalty of Honda Motorcycle Customers in Mandalay

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ABSTRACT : The objectives of the study are to investigate the effect of price and product quality on customer satisfaction and to analyze the effect of customer satisfaction on loyalty towards Honda motorcycle in Mandalay. This study mainly focuses on satisfaction and loyalty of Honda motorcycle customers in Mandalay. The study utilized quantitative research method. Two-stage simple random sampling method is also used in this study. For the first stage, three of the Honda motorcycle showrooms located in Mandalay are selected by using simple random sampling method. And then, 100 customers from each selected showroom are chosen by simple random sampling method. Therefore, the sample consists of 300 Honda motorcycle customers in Mandalay. The results of this study revealed that product quality has a significant effect on customer satisfaction. However, this study observed that price has no effect on satisfaction of Honda motorcycle customers. Moreover, customer satisfaction also affects customer loyalty towards Honda motorcycles. Therefore, Honda motorcycle company should emphasize its product quality regarding product features, durability, and ease and convenience to satisfy its customers and to create their loyalty.

Key words : *customer satisfaction, customer loyalty, product quality, price*

I. Introduction

The success and survival of business organizations depend on the satisfaction of

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their customers. When business organizations start up their operations, they always need to consider about their customers "first" and then "profit". Those business organizations which are ensuring to fully satisfy the customers will remain in the topmost position in a marketplace. Today's business organizations have understood that customer satisfaction is a key element for the success and it simultaneously plays a crucial role for increasing market share. Since, customer satisfaction can provide many benefits including increased brand reputation, customer loyalty, lower switching tendency, and positive word of mouth it is very essential for business organizations (Fornell,1992).

Loyalty of customers can also create crucial benefits for business organizations. Loyalty can reduce marketing costs and operational costs as well as increase sales. Moreover, Raman (1996) stated that customer loyalty can provide strong word of mouth and recommendations, create business referrals, and provide references. Therefore, business organizations try to achieve the customer satisfaction and customer loyalty that are incorporated into the long-term goals of the business.

Nowadays, many developing countries depend on motorcycles as a necessary mode of transportation. Motorcycles have been known to accelerate inexpensive mobility and offer flexibility for low- and middle-income level people. In a developing country like Myanmar, motorcycles are used in all cities except Yangon in which motorcycles have been banned since 2015 because of traffic congestion. In Myanmar, Mandalay is a commercial city which relies mainly on motorcycles for transportation and demands on imported motorcycles is increasing gradually throughout the city because motorcycles are easy to buy, faster than bicycles and cheaper than automobiles. Therefore, most people who stay in Mandalay use motorcycles as their first form of personal transportation.

Motorcycle showrooms and dealers are significantly emerging in Mandalay. Hence, motorcycle manufacturers, showrooms and dealers face fierce competition. Therefore, they have to create and retain loyalty and provide customer satisfaction to achieve large market share. Many brands that are made in Japan, Thailand , Vietnam, India and China are also available in Mandalay market. Among these brands, Honda motorcycle is manufactured by Japan and Honda brand has several product items including Scoopy, Super Cub and Click. This study is undertaken for analyzing how product quality and price affect customer satisfaction and how satisfaction relates loyalty of Honda motorcycle customers in Mandalay.

1. Study Objectives

The study objectives are as follows:

(i) To investigate the effect of product quality and price on satisfaction of Honda

motorcycle customers and

(ii) To analyse the effect of satisfaction on loyalty of Honda motorcycle customers in Mandalay.

2. Scope and Study Method

The study only focuses on loyalty and satisfaction of Honda motorcycle customers in Mandalay. This study utilized quantitative research method. This study utilized two-stage simple random sampling methods. For the first stage, three of the Honda motorcycle showrooms (40% of Honda motorcycle showrooms) located in Mandalay are selected by simple random sampling method. After that 100 customers from each selected showroom are also chosen by simple random sampling method. Therefore, sample size of this study is 300 customers who buy the Honda brand motorcycle from showrooms in Mandalay. Data collection is undertaken in December, 2019. Primary data are gathered through survey questionnaires which are used as a tool for collecting data. Marketing text books, Consumer Behaviour text books, relevant journals, and articles from internet websites are used to obtain secondary data. In this study, to achieve the objectives, statistical techniques such as Multiple Regression analysis and Simple Linear Regression analysis are utilized.

II. Theoretical Background

1. Price

Stanton et. al (1994) asserted that price is the amount of money that are needed to get some combination of other goods and services. Kotler and Armstrong (2010) stated that when customers use product they need to pay the amount of money for using that product as a price. Cadogan and Foster (2000) mentioned price that is possibly the most imperative attention for the average consumer. For customers with high loyalty, price cannot affect their purchase decisions because they are ready to pay high price for their favorite brands.

2. Product Quality

Russell and Taylor (2006) stated that product quality comprises the appearances and features of a service or product which bore its capability to satisfy implied or stated needs. Quality is also "conformance to requirement" or "fitness for use".

Garvin (1987) mentioned that product quality has many attributes including features, conformance, performance, reliability, serviceability, durability, and aesthetics. Yuen & Chan (2010) stated that these product quality attributes are crucial to gauge the customer satisfaction.

3. Customer Satisfaction

Fornell (2001) stated that satisfaction of customer is overall feeling of a customer that is directly related to consumption and customer has the sense of how product meets to which level of standard norm or her/his desire. Oliver (1997) defined as consumer satisfaction is consumer reaction that comes out when the consumer's actual experience on a product is greater than expectation. Kotler (1997) stated that satisfaction is also an emotion of disappointment or pleasure that result from comparison between expectation and perception on a product or service. Zeithaml & Bitner (2003) stated that specific features of products and perceived quality influence customer satisfaction. Furthermore, emotional reactions of customers, and equity can also influence customer satisfaction. Tao (2014) mentioned that customers repurchase frequently products and recommend these products to potential customers when they are satisfied with these products of a company.

4. Loyalty of Customer

Leila Andervazh et. al (2015) asserted that loyalty of customer is an obligation to purchase goods or services again and again in near future, although competitors attempt to sell them. Sutisna (2003) stated loyalty of customer that is a good attitude having a customer toward a brand presented in a constant purchase on the brand. Abdullah et al., (2012) stated that loyal customer shows a good attitude and behaviour towards goods and services.

5. Relationship between Satisfaction and Loyalty of Customers

Fornell (1992) asserted that the firm's customer satisfaction leads to customer loyalty. Getty and Thompson (1999) pointed out that satisfaction relates loyalty of customer significantly. According to Coyne (1986), two important thresholds affect the association between satisfaction and loyalty of consumers. Oliva et. al (1992) pointed out that if customer satisfaction got a certain point, loyalty would increase considerably. Similarly, if customer satisfaction decreased to a certain level, customer loyalty would decrease considerably.

6. Operational Framework

Based on the above concepts and theories, this study developed the operational framework which is exhibited in Figure (1).

Figure 1. Operational Framework

Source: Adopted from Reiga Ritomiea Ariescy (2018)

III. Data Analysis

Table (1) presents the Cronbach alpha values of price, product quality, customer satisfaction and customer loyalty. Cronbach's alpha is computed to ascertain the internal reliability and consistency of the measures.

Table 1. Results of Reliability Test

Variable	Items	No. of Items	Cronbach alpha
Price	Price of Honda is well-matched with its performance and quality.	4	0.853
	Price of Honda is well-matched with its benefits.		
	Price of Honda is affordable for customers.		
	Price of Honda is competitive.		
Product Quality	Honda is comfortable when riding.	8	0.714
	Honda provides safety.		
	Honda provides durability and dependability.		
	Honda is more fuel efficient and environmentally friendly.		
	Honda provides a wide variety of models.		
	Honda offers creative design.		
	Honda has service centers that are easily available.		
	Honda has excellent features.		
Customer Satisfaction	Honda motorcycle customers are satisfied with selling price.	4	0.831
	Honda motorcycle customers are satisfied with product quality.		

	Honda motorcycle customers conform with their expectation.		
	Honda motorcycle customers get good experience when riding Honda.		
Customer Loyalty	Honda motorcycle customers immune to other Motorcycle brands.	4	0.822
	Honda motorcycle customers will make repeated purchase in future.		
	Honda motorcycle customers are will buy Honda although its price increases.		
	Honda motorcycle customers recommend to others.		

Source: Based on Previous Studies

As indicated in Table (1), the estimations of Cronbach alpha value for price, quality of product, customer satisfaction and customer loyalty are 0.853, 0.714, 0.831 and 0.822 respectively. Since the Cronbach's alpha of all items are higher than 0.7, the constructs are reliable and consistent.

Appendix (A), presents the background information, the selected socio-demographic profile of the respondents. As illustrated in Appendix, male contributes 55% of respondents, and remaining percentages represent female respondents. Therefore, male contributes over half of the sample. Regarding age, the largest contribution group is between 20 to 30 years old. Second largest group is under 20 years. For marital status, 67% of respondents are found as single. Regarding the qualification, most respondents (67%) are graduate. Regarding monthly income, the largest group (58%) of respondents, has a monthly income between 200,000 to 300,000 kyats. The smallest group, (11%), has a monthly income under 200,000 kyats. Concerning the occupation, the largest group consists of private company staff. It takes 39% share in total. Second largest group involved government staff. This group contributes 32% of total respondents.

Statistical techniques involving Multiple Regression analysis and Simple Linear Regression analysis are utilized to achieve the study objectives. Table (2) presents the output of these analysis. Regarding the first objective, price and quality of product are independent variables and customer satisfaction is dependent variable. Concerning the second objective, customer satisfaction is independent and customer loyalty is dependent variable.

Table 2. The Effects of Price and Quality of Product on Satisfaction and Satisfaction on Loyalty of Honda Motorcycle Customers

	Customer Satisfaction				Customer Loyalty		
	B	SE	β	VIF	B	SE	β
Price	.186	.101	.169	2.125			

Quality of product	.394***	.096	.370	2.064			
Customer Satisfaction					.332***	.046	.301
R2	.336				.224		
Adj. R2	.324				.219		
F-Statistics	26.715***				46.828**		

Source: Survey Data (2019)
Note: *** 1% level of significance

As exhibited in Table (2), the adjusted R-square values are more than 20 percent and 30 percent respectively. Both regression models can illuminate moderately about the discrepancy of dependent variables. The significant values of F-Statistics at 1 percent level indicate that these two models are valid models. The statistical results proved that quality of product affects customer satisfaction significantly while price doesn't affect satisfaction. Moreover, satisfaction significantly and directly relates loyalty of Honda motorcycle customers.

IV. Findings and Suggestions

The results from analysis revealed that product quality plays a main role in effect of customer satisfaction towards Honda motorcycles. It revealed that if Honda motorcycle quality becomes better, the customer satisfaction with Honda motorcycle will increase. When customers decide to buy a motorcycle, they will select the quality motorcycle to fulfill their needs. Most respondents perceived that the Honda motorcycle which provides comfort when riding is the best qualities. Moreover, Honda motorcycle can provide dependability and durability that are also main quality of Honda because Honda and its parts are robust and they are long-lasting and cannot be damaged easily and quickly. Honda motorcycle can provide ease in service and high-quality parts that can make good impression and customer satisfaction. In addition, it provides excellent features including LED light, handle bar, and grips. Moreover, since original spare parts and many repair and maintenance shops are easily available in Mandalay, Honda customers are not worried if their Honda motorcycles are damaged and broken down.

The findings revealed that price does not affect satisfaction of Honda motorcycle customers. Particularly, changes in prices of Honda do not impact customer satisfaction. Although the price of Honda does not affect customer satisfaction the study found that most respondents perceived the price is not competitive compared with other brands especially from India and China. However, they perceived the price is matched with performance, quality and benefits. In Mandalay, some dealers develop the instalment programme and make integration with private banks that

offer hire purchase system for their purchasers to be affordable and lighter for the repayments.

Moreover, the finding highlighted that satisfaction affects loyalty of Honda motorcycle customers in Mandalay significantly and directly. The finding asserts that increasing or decreasing customer satisfaction affect customer loyalty towards Honda motorcycles. Before making a buying decision, customers will learn the motorcycle specifications to be bought. Honda motorcycle specifications are always consistent with what is published, so the motorcycle quality imagined by customers when they know the specifications are consistent with the expectations. Honda's ability to meet customer expectations makes satisfaction and then creates loyalty of Honda motorcycle customers.

Since competitors are entering the Mandalay motorcycle market with new models and most respondents consider features as quality of product the Honda company should add more features based on Myanmar customers' needs. Moreover, since being comfortable when riding, and dependability and durability are considered as Honda product qualities, Honda company should emphasize more on research and development to improve these qualities. In Mandalay motorcycle market, since Honda company has no authorized service centre in Mandalay, Honda company should establish authorized service centre to offer repair and maintenance services with recognized technicians for their customers. In addition, although the price has no effect on customers' satisfaction Honda company should emphasize more on value engineering and value analysis activities to reduce cost and to achieve a competitiveness in price. Moreover, Honda company should provide incentives to the dealers to promote its products.

V. Conclusion

The aims of the study are to investigate the effect of price and quality of product on satisfaction of Honda motorcycle customers and to analyse how satisfaction relates to loyalty of Honda motorcycle customers in Mandalay. To achieve these aims, 300 motorcycle customers are selected. This study revealed that marketers have to prioritize quality to create customer satisfaction. Moreover, this study highlights that changes in customer satisfaction can relate customer loyalty of Honda motorcycle.

The finding makes a positive contribution to the literature relating Marketing and Consumer Behaviour. This study provides the better understanding on influences of price and product quality on satisfaction of customers and how customer satisfaction relates with customer loyalty. In addition, it can provide empirical verifications for

the effects of price and quality of product on customer satisfaction and the relationship between customer satisfaction and loyalty towards Honda motorcycles.

Moreover, the finding can provide a vital implication for many business organizations. Business organizations in particular motorcycle manufacturing companies can imply these findings when they develop customer loyalty that can reduce marketing expenses and increase profit. The finding indicated customer satisfaction has a positive and significant relationship with loyalty and satisfaction of customer can be enhanced by product quality. Therefore, business organizations should improve ease and comfort, durability, and features relating to product quality when they produce the products to increase the satisfaction of customers.

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Appendix (A)

Respondents' Socio-demographic Profile

Sr. No.	Particular	Frequency	Percentage
1	Gender: Male	165	55
	Female	135	45
2	Age: < 20years	67	23
	20-30 years	148	49
	31-40 years	49	16
	41-50 years	24	8
	>50 years	12	4
3	Marital Status: Married	99	33
	Single	201	67
4	Qualification: High School	33	11
	Undergraduate	46	15
	Graduate	201	67
	Post Graduate	20	7
5	Monthly Income(kyats): <200,000	33	11
	200,000-300,000	174	58
	>300,000	93	31
6	Occupation: Student	30	10
	Dependent	9	3
	Government Staff	95	32
	Private Staff	117	39
	Business Owner	49	16
7	Experience in Usage of Honda Motorcycle: < 5 years	53	17
	5-10 years	170	57
	>10 years	77	26

Source: Survey Data (2019)

Compensation Practices and Employee Satisfaction of No. (1) Cement Factory of Myanmar Economic Corporation (MEC)

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ABSTRACT: This study emphasizes on compensation practices and employee satisfaction of No. (1) Cement Factory of Myanmar Economic Corporation (MEC). The objectives of the study are to identify the compensation practices of No. (1) Cement Factory of MEC and to analyze the effects of compensation practices on employees satisfaction of No. (1) Cement Factory of MEC. Both primary and secondary data are used in this study. Primary data are collected from 150 non-managerial level employees (35% of total 436 non-managerial level employees) by using simple random sampling method. The structured questionnaires are distributed to these 150 employees to collect the primary data. Secondary data are gathered from relevant texts, previous research papers, related websites and thesis publications. The descriptive statistics is used to explore the general information of the respondents and the perception of employees on the selected variables. The correlation of the variables revealed that all independent variables (direct, indirect, and non -financial compensation) have positive correlation with employee satisfaction. According to the multiple regression analysis, direct, indirect and non-financial compensation have positive and significant effects on employee satisfaction. Employees are most satisfied on non-financial compensation provided by cement factory. This study suggests that the cement factory should mainly emphasize on non-financial compensation to increase employee satisfaction.

Key words *: Cement Factory, Myanmar Economic Corporation, Compensation Practices, Employee Satisfaction*

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I. INTRODUCTION

In organization, employees are the key resources through which all the other objectives are achieved. Employees will demonstrate pleasurable positive attitudes when they are satisfied with their job. Employees' wellbeing and workplace health and wellness policies as the non-financial rewards for the employees bring significant effects to their performance and also make organization effective and profitable. Therefore, high employee satisfaction will increase the productivity of an organization, in turn increasing the overall organizational performance. Compensation plays an important role in determining an employee satisfaction. It is a fixed amount of money paid to an employee by an employer in exchange for a productive work performed (Heathfield, 2012). A compensation package is important for both employers and employees because it is one of the main reasons for which people work. Compensation is the human resource management function that deals with every type of reward individual receive in exchange for performing organizational tasks, with a desired outcome of an employee who is attracted to the work, satisfied and motivated to do a good job for the employer. For individuals, compensation is not only the return of benefits, but it also reflects on individuals' capabilities or achievements. It can help motivating employees and improving organizational effectiveness. In today's hyper-competitive, increasingly globalized world, one of the most critical resources an organization can wield is their human resource. Employee has become a big factor in the organizations because whatever decision or behavior of the employee will affect the success or failure of the organization. Employee satisfaction is significant to organizations which want to preserve their employees' happiness and reduce turnover in the workplace. Employee with high satisfaction are important since they believe that the organization would have a tremendous future in the long run and the employer give credit to the quality of their work. Different employees have different needs and desires. Employees cannot put their best effort if they have feeling of unhappiness. Therefore, top management should clearly identify the needs of employee. Employee dissatisfaction will spread as a problem to their workmates and word of mouth can do a lot of harm to the organization. The cement factory are relevant for economic booming country, Utilizing effective human resources in the business operation takes into the important aspect into consideration. Furthermore, to deliver quality products and services, the organization requires satisfied and happy employees.

When the organization gave the expected compensation of employees, employees satisfy in the job and then they are more commitment and engagement that translate higher performance. By fulfilling employees' expected compensation,

organization can get a lot of benefits. These are growth performance, productivity and revenues. If organization pays inadequate compensation, existing employees tend to leave the organization and the organization will have difficulty in recruiting. Because Myanmar is a developing country, its capital largely invest in infrastructures such as building, bridge. Cement factory is essential for construction companies that build bridge and building. By growing construction businesses, construction equipment is more necessary. Therefore, cement industry becomes highly demand and competitors. For the success of cement factory, it is very important to manage human resource effectively and to find whether its employees are satisfied or not. Today, businesses believed that more employee satisfaction generate more production along with the completely a competitive position in the market. Therefore, this study analyzes compensation practices and employee satisfaction of No. (1) Cement Factory of Myanmar Economic Corporation (MEC).

1. Objectives of the Study

The objectives of the study are:

(i) To identify the compensation practices of No. (1) Cement Factory of Myanmar Economic Corporation.

(ii) To analyze the effects of compensation practices on employee satisfaction of No. (1) Cement Factory of Myanmar Economic Corporation.

2. Scope and Methods of the Study

The study focused on compensation practices and employee satisfaction of No. (1) Cement Factory of Myanmar Economic Corporation (MEC). The factory has 661 employees that consist of 225 managerial and 436 non-managerial level employees. In this study, only 436 non-managerial level employees were selected for data collection. Both primary and secondary data were utilized in this study. The primary data were collected from 150 employees (35% of total 436 non- managerial level employees) by using structured questionnaires. Secondary data were obtained from relevant text books, previous research papers, articles, Internet websites, cement factory records and reports. Descriptive statistics and multiple regression analysis were used to prove the objectives of the study. Simple random sampling was used for data collection. The structured questionnaires were set with Five-Point Likert scale. Data collection period was during the month of February, 2020.

II. Literature Review

Compensation generally denotes monetarist statements. Besides being critical for a healthy employer-employee relationship, compensation plays a significant role in enhancing the employment status (Gerhart, 1994). Chhabra (2001) defined compensation as the combination of monetary and non-monetary rewards provided to employees for offering the services to the organization. Compensation has significant impact on organizational success (Dessler, 2013). According to Mondy and Robert (2006), there are three types of compensation. They are direct financial compensation, indirect financial compensation and non-financial compensation.

Direct financial compensation refers to monetary benefits offered and provided to employees in return of the services they provide to the organization. The monetary benefits include basic salary, bonus, medical reimbursements, travel allowances, special allowances, etc. Indirect financial compensation refers to non-monetary benefits offered and provided to employees in return for the services they provide to the organization. These include leave policy and social security. Leave policy is a set of rules, procedures and guidelines established by organizations in accordance with applicable federal and local laws, which govern the process, timeframes and reporting procedures for time taken off work. Social security is subsequent amendments to the Act added other forms of protection, such as disability insurance, and survivors' benefits. Non-financial compensation consists of the satisfaction that a person receives from the job itself or from the psychology and/or physical environment in which the person works (Bernard N. Simiyu, 2011). According to Dessler (2013) working conditions include aspects like employee voice, employee recognition, quality of the working life, work/life balance, and talent management. Recognition is the component that is used to strengthen the relationship between organization and employees (Romano, 2003). Organizations can offer employee recognition in various ways the provisions of gifts cards, certificates, shopping vouchers, thank you, praise dinners, career advancement opportunities, training, appreciating ideas and respect where it deserves, etc (Nolan, 2001).

Employee satisfaction is crucial not just for the employee but for employers as well. A satisfied employee is an asset to the organization. It refers to a collection of positive and or negative feelings that an individual hold toward his or her job. According to (Spector, 1997), employee satisfaction is associated with how people perceive, think and feel their jobs. It is also used to describe the employees' happiness, contented, fulfilling their desires and needs at work. Employee satisfactions have been recognized to have a major impact on many economic and social phenomena, e.g. economic growth and higher standard of living. Companies must

continuously employee satisfaction in order to stay profitable. A satisfied employee is an asset to the organization. According to Meena and Dangayach (2012), employee satisfaction is important because employee can care the quality of their work, create and deliver superior value to the customer, is more committed to the organization. In addition, employees are more productive person. Compensation is a very valuable tool for retention and turnover. It is also a motivator for an employee in commitment with the organization which enhances its attraction and retention. Compensation and benefits is the most important variable for employee satisfaction. Implementing the effective and efficient compensation and benefits scheme not only direct financial compensation but also indirect financial compensation and benefits, results in improved morale, reduced absenteeism, increased productivity and enhanced customer satisfaction and loyalty. Employee compensation is typically one of the first factors that potential employees consider when they are looking for employment. For employee's perspective compensation is the equivalent "not to how they are paid", but, ultimately, to "how they are valued". Every compensation plan reflects a message of the top management to employees. It also decides the level of employee satisfaction which is associated with it. Every organization should develop strategies that strengthen the work environment and increase the employee's morale and employee's satisfaction to enhance employee's performance and productivity, which ultimately results in high profits, customer satisfaction as well as customer retention. Employee satisfaction represents one of the most complex areas facing today's managers when it comes to managing their employees. Policy makers and managers have turned their attention to provide different kinds of facilities to their employees in order to satisfy their employees.

Akinyele Samuel Taiwo (2019) studied on the influence of work environment, high pay, supervision and training and development on employee productivity of Oil and Gas Industry in Lagos, Nigeria. The finding from this research shows high pay and work environment there have positive impact with employee productivity. Supervision and training development there have negative impact with employee productivity.
Similarly, Heather Dickey et al. (2009) studied the quite intentions of offshore workers (work environment, workload, job stress, working hour, wages, job security) on job satisfaction of UK North Sea Oil and Gas Industry. The findings from this research shows work environment and job security there have most satisfied with job satisfaction. Workload, job stress, working hour, and wages there have positive correlation with job satisfaction.

Ravichandran et al. (2015) conducted a study on job satisfaction of employees of manufacturing industry in Punducherry, India. In this research, independent variables were working condition, promotion, and work environment. Dependent variable is employee satisfaction. The finding revealed that satisfaction level of employee

significantly differs regarding salary with respect to their experience.

According to these previous literature, compensation practices and employee satisfaction have direct and indirect effects on employee satisfaction. Employee satisfaction has been observed by several researchers in different industries due to its crucial role for organizational effectiveness. Satisfied employees play the crucial role for the survival of the organization. There are some aspects of having good relationships with the colleagues, high salary, good working conditions, or any other benefits may be related with the increasing of employee satisfaction in any industry but more specific in cement industry. While investigating whether the employees are satisfied or not by the measuring the employee satisfaction in the workplace is critical to the success and increases the profitability of the cement factory for having competitive advantage. It indicates that while investigating the employee satisfaction, it should be known that an employee may be more satisfied by a satisfying item, whereas the other employee may be less satisfied with the same item. Because of this kind of common error, analyzing the employee satisfaction from a large perspective will be better for any researcher. According to these studies, the conceptual framework is developed as follows. As depicted in Figure (1), direct financial compensation, indirect financial compensation, and non-financial compensation are used as independent variables and employee satisfaction is used as dependent variable.

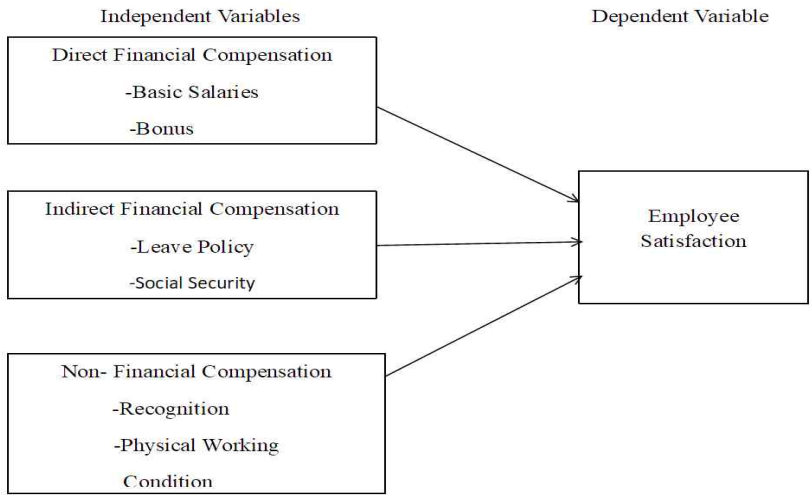

Figure 1. Conceptual Framework

Source: Own Compilation from Literature Review

To measure direct financial compensation, position based salaries, sufficient for current cost of saving, salary increments are based on individual performance and

experience, fair in comparison with other cement factory and fair bonus payment policies and informs bonus system in advance and gives bonus to employees based on their efforts, experiences and performances. In addition, the measurement of indirect financial compensation consists of the factory enforces the government leave policy, gives casual leave, medical leave, marriage leave, maternity leave, and earned leave to all employees. As a social security, the factory arranges life and health insurance to all employees. The factory allows leave day for medical insurance for over sixty years and family members are given assistance when employees are in accident and die in the workplace. Employees receive awards from employer when they achieve target of performance. Outstanding performance is appropriately recognized by employer. Employee feels safe and comfortable in working environment. Employee feels working place is good light and temperature and is cleanliness. Interpersonal relationship is good with co-workers. Finally, employee satisfaction is measured with bonus, medical reimbursement, travel allowances, special allowance, social security, satisfied working condition and recognition provided by the factory.

III. Analysis and Results

This section, describes demographic characteristics, results of descriptive statistics, correlation and multiple regression analysis. Demographic characteristics of the respondents are analyzed by gender, age group, income level, education and marital status. Table (1) shows demographic characteristics of the respondents.

Table 1, Demographic Characteristics of the Respondents (N= 150)

Sr. No.	Statement	Category	Frequency	Percentage
1	Gender	Male Female	95 55	63.33 36.67
2	Age (Years)	20 and below 21-30 31- 40 41-50 51 and above	6 57 64 20 3	4.00 38.00 42.67 13.33 2.00
3	Monthly Income (Kyats)	150,000 and below 150,001-250,000	60 90	40.00 60.00
4	Education	High school level University level	44 7	29.33 4.67

		Bachelor level	82	54.67
		Other(Non-Educated Level)	17	11.33
5	Marital Status	Single	58	38.67
		Married	92	61.33

Source: Survey Data (February, 2020)

As shown in Table (1) gender can be classified into two groups, male and female. There are 95 male and 55 female. 63.33% of respondents are male and 36.67% of respondents are female. It can be interpreted that most of employees in the cement factory are male because the nature of work. The age of respondents are divided into five groups: 20 years and below, 21-30 year, 31- 40 years, 41-50 years and 51years and above. From this study, it is found that the range of age between 31-40 years is largely domain in survey as number of 64. According to frequency distribution by age, the major group of respondent is 31years – 40 years which contribution 42.67% of the total respondents. The minority of respondents is 51 years and above. The reason is that the employees in this age group can't tolerant long production process of cement factory. The age of most respondents is between 31 years and 40 years. Thus, it can be seen that this age group demand challenging nature of the work of cement factory.

Income level is divided into two groups which consist of under Kyats 150,000 and between Kyats 150,001 and Kyats 250,000. According to frequency distribution by monthly income, the major group of income is between Kyats 150,001 and Kyats 250,000 which contribution 60.00% of the total respondents. The income of minority of respondents is 150,000 Ks and below. Therefore, it can be interpreted that monthly income of most employees is between Kyats 150,001 and Kyats 250,000 because data was collected from non-managerial level employees of the factory.

As shown in Table (2), the mean value of work itself is the highest mean value among in factors affecting job satisfaction. It can be said that employees accept that the importance of their works. However, pay can't fully attract the employees to satisfy their jobs in cement factory. Work itself, supervision and work group show the agree level of the respondents. Promotion, working condition also show the neither agree nor disagree level of the respondents. It can be concluded that promotion and working condition are fairly important for job satisfaction. Results of descriptive statistics are shown in Table (2).

Table 2, Reliability Analysis of Compensation Practices and Employee Satisfaction

Sr. No.	Variables	Items	Cronbach's Alpha
1	Direct Financial Compensation	11	0.825

2	Indirect Financial Compensation	18	0.867
3	Non- Financial Compensation	12	0.865
4	Employee Satisfaction	11	0.899

Source: Survey Data (February, 2020)

In the study, Cronbach's Alpha value was used to examine the reliability of the questionnaire. Adopted from the Zikmund (2010), when the alpha value is between 0.8 and 0.95, it is considered very good reliability, when the value is from 0.7 to 0.8, it is considered good reliability. And when the alpha value falls between 0.6 and 0.7, it is considered fair reliability and when the value is below 0.6 it will be considered as poor reliability. Therefore, Cronbach's Alpha should be equal and bigger than 0.6 because it is often said that the higher the Cronbach's Alpha, the more reliability scale has.

Correlation analysis is used to analyze the relationship of the dependent variable (employee satisfaction) and independent variables (direct financial compensation, indirect financial compensation and non-financial compensation). The results of the correlation analysis of the measured variables are illustrated in Table (3).

Table 3, Results of Correlation Analysis

Sr. No.	Factors	Pearson Correlation Coefficient	P-Value
1	Direct Financial Compensation	0.617**	0.000
2	Indirect Financial Compensation	0.637**	0.000
3	Non- Financial Compensation	0.710**	0.000

Source: Survey Data (February, 2020)
** Correlation is significant at the 0.01 level (2-tailed)
Dependent Variable: Employee Satisfaction

Table (3) shows that there is positive relationship between compensation practices and employee satisfaction due to the positive value for correlation coefficient. The value of direct financial compensation, indirect financial compensation and non- direct financial compensation is 0.617, 0.637 and 0.710 respectively and significant at 0.01 level. These results mean that direct, indirect and non-financial compensation have strong correlation with employee satisfaction. The result also shows the relationship between compensation practices and employee satisfaction is significant. Therefore, when compensation is high, employee satisfaction will be high.

Multiple regression analysis was applied to identify compensation practices satisfaction. To develop the multiple regression model, employee satisfaction was used as dependent variable and direct financial compensation, indirect financial

compensation, and non-financial compensation were used as independent variables. The results of regression analysis is shown in Table (4).

Table 4, Results of Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
(Constant)	-0.196	0.281				
Direct Financial Compensation	0.316***	0.088	0.263	3.594	0.000	1.672
Indirect Financial Compensation	0.213*	0.113	0.165	1.880	0.062	2.385
Non-Financial Compensation	0.500***	0. 103	0. 430	4.847	0.000	2.455
R	0.757					
R Square	0.573					
Adjusted R Square	0.563					

Source: Survey Data (February, 2020)
* ** is statistically significant at 1% level,
* is statistically significant at 10% level
Dependent Variable: Employee Satisfaction

The results of regression analysis provides that direct, indirect and non- financial compensations were positive and significant effects on employee satisfaction (B = 0.316, P < 0.01), (B=0.213, P < 0.1) and (B=0.500, P < 0.01). According to the regression results, if the cement factory had not provided compensation practices (direct, indirect and non-financial), the employee satisfaction will be -0.196. The compensation practices such as direct, indirect and non-financial are directly related to employee satisfaction. If the cement factory provides good compensation practices, employee satisfaction will be increased and try to give their best which can increase the employee job performance. If the cement factory does not provide good compensation practices, employee satisfaction will decrease.

Direct financial compensation describes the positive and significant effect on employee satisfaction at 1 percent level. It can be inferred that the greater the respondents direct financial compensation, the more satisfied the employee. As the unstandardized coefficient is 0.316, one unit increase in direct financial compensation leads to 0.316 time increase in employee satisfaction. Thus, direct financial compensation shows significant and is essential for employee satisfaction. Indirect financial compensation indicates the positive and significant effect on employee satisfaction at 10 percent level. It can be deduced that the more the respondents indirect financial compensation, the more satisfied the employee. As the unstandardized coefficient is 0.213, one unit increase in indirect financial compensation leads to 0.213 time increase in employee satisfaction. Therefore,

indirect financial compensation indicates significant effect on employee satisfaction. It is evident that non-financial compensation shows the most significant effect on the employee satisfaction at 1percent level. It can be deduced that the more the respondents receive non-financial compensation, the more satisfied the employee. One unit increase in non-financial compensation leads to .500 time increase in employee satisfaction. Thus, respondents who have high non- financial compensation, the satisfaction will be high.

IV. Findings and Discussions

According to the results of demographic characteristics of employees, male employees are the major group and inflexible working condition of cement factory is more suitable for male. Among five age groups, the majority group is the age between 31-40 years because this age group more demand challenging nature of the work of cement factory than the other age groups. According to the income level of respondents in the survey, the patterns of income level were varied because of different monthly income distribution, the highest in income of employees are between Kyats 150,001and 250,000. As per the social work perspective, there is significant number of employees in the cement factory are working on low wages and low facilities. Salaries and bonus that are provided as direct financial compensation are analyzed. Salaries get the lager mean value than that of bonus in direct financial compensation. Therefore, cement factory has more concentration on salary and less concentration on bonus payment for its employees. Concerning of indirect financial compensation, leave policy and social security are analyzed. The mean value of leave policy are larger than that of social security. Therefore, cement factory should focus on leave policy. Recognition and physical working condition that are provided as non-financial compensation are analyzed. The mean value of physical working condition is larger than that of recognition. The factory should provide physical working condition with modern equipment and facilities.

The correlation of the variables revealed that direct, indirect and non-financial compensation have strong correlation with employee satisfaction. According to the results, direct, indirect and non-financial compensations are strongly correlated with employee satisfaction.

The results of multiple regression analysis showed that the compensation practices (direct, indirect and non-financial compensation) have positive and significant effects on employee satisfaction. Therefore, cement factory needs to provide compensation practices for their employees to increase their satisfaction level in their jobs. Employees are more motivated when they have challenging opportunities at work.

According to the results, non-financial compensation contributes the most to employee satisfaction compare with other independent variables.

V. Limitations of the Study

The limitations of the study should be focused by further research. As one limitation, the study focused on employees in Cement Factory. The employees in the area of Myanmar will have different perception on the selected practices. Further research should focus on the other areas to explored different results. Another limitation is that the study selected three compensation practices upon cement factory to evaluate employee satisfaction. Other practices and other factories are not considered in this study. Further research should focus on the other areas to explored different results.

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Factors Affecting the Poverty Levels of Tea Farmers in Rural Area of Pinlaung Township

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ABSTRACT : Poverty has been a key challenge and has remained in Pinlaung township. This paper is concerned with the poverty levels of tea farmers in rural area of Pinlaung township in Shan State. The main objective of this study is to investigate the factors affecting poverty level of tea farmers in rural area of Pinlaung township. The require information was collected by ways of personal interview. Cluster sampling method was used for primary data collection from 268 households of tea farmers in three villages which are selected from 434 villages. Cluster sampling method, descriptive method and binary logistic regression analysis are used in this study to analyze the data. Most of tea farmers in Pinlaung Township are illiterate. Their illiteracy rate is very low. The finding is that education, number of family members and total income are positively correlated with poverty and gender, number of students and tea acre are negatively correlated with poverty. Age and green tea output do not significantly affect poverty status in Pinlaung township. The more students the household have, the more poverty it increases. Poverty increases because tea farmers have no regular income. Without education, a job cannot be got and without an income, tea farmers cannot equip education for their children. Educating the people and controlling a nation's population growth is the gateway to success the lives of the people suffering from poverty. Therefore, the government should focus on doing research so that the vicious circle can be interrupted by generating numerous job opportunities as well as providing free education to the destitute.

Key words *: Poverty, Illiterate, Rural Area, Cluster Sampling Method, Binary Logistic Model*

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I. Introduction

Poverty is a deficiency of necessary or desirable components. Poverty is not having enough material belongings or income for a person's basic needs for a minimum standard of living. Poverty is also including social, economic, and political elements.

"Poverty is hunger. Poverty is lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not having access to school and not knowing how to read. Poverty is not having a job, is fear for the future, living one day at a time. Poverty has many faces, changing from place to place and across time, and has been described in many ways.

The World Bank is the main sources for global information on extreme poverty today and it sets the "International Poverty Line". A person is considered to be in extreme poverty if they live on less than $ 1.90 international per day. The monetary approach is the most commonly used to measuring poverty. It applies calculations of household income to identify a shortfall in consumption from a specified poverty line.1

Poverty is a difficult cycle to break down and often passed slowly from one generation to the next. Typical consequences of poverty include alcohol and substance abuse; less access to education; poor housing and living conditions and increased of disease. Poverty is likely to cause increased tensions in society, as inequality increases.1 The poverty is affected the crime rates in communities.

According to Sustainable Development Goals (SDGS), in Myanmar, 24.8% of the population lives below the national poverty line in 2017. Despite population growth, there was a decline in the number of poor people 11.8 million in 2017. The proportion of employed population below $1.90 purchasing power parity a day in 2019 is 2.7%. Poverty is twice as high in rural areas where 70% of the population lives. The national poverty line in 2017 is 1,590 kyat per adult equivalent per day. The poverty line defines the minimum welfare level that is necessary for a person not to be considered severely deprived.[1)]

Myanmar's economy depends on natural resources and agriculture. Poverty is more prevalent in rural areas. The poverty is significantly higher in rural areas of Myanmar than in urban areas. The number of poor people is also 6.7 times higher in rural areas than urban areas, and those residing in rural areas make up an overwhelming majority of the nation's poor.

Agricultural employments are associated with low earnings and poverty, and households that expanded or altogether moved out of agricultural work had better

1) UNDP & World Bank, Myanmar Living Conditions Survey 2017, June 2018, https://www.undp.org/content/dam/myanmar/docs/Publications/ PovRedu /MLCS-2017.pdf

living conditions. Among the population working in the agricultural sector, those who own a plot of land have higher welfare than those who do not.

Nearly 70 percent of workers from rural households working in agriculture and with limited growth in nonfarm jobs for poor households, poor households have low levels of access to improved water and sanitation, lower educational outcomes, and little way to institutions such as health or financial institutions. In this paper, rural households are studied to determine the poverty levels of households in Pinlaung township and to find out the influence poverty factors of households in this township.

1.. Objectives of the study

The objectives of the study are

(i) To determine the poverty levels of tea farmers households in Pinlaung township.

(ii) To analyze the effect of socio-economic factors on poverty of tea famers households in Pinlaung township.

2. Method of Study

Cluster sampling method, descriptive method, binary logistic regression analysis were used in this study. Cluster sampling is more economical or more practical than stratified sampling or simple random sampling. This method is costs less than simple or stratified random sampling when the cost of obtaining a frame that has very large lists all population elements and the observations cost increases as the distance separating the elements increases. When a researcher can't get information about the population as a whole, the cluster sampling method is used.

The total village in Pinlaung township are 434 villages which are specified as three cluster. Three villages from three clusters There were randomly selected of and these three villages are situated in north, south and west, of the Pinlaung township. Selected villages are Lae Laung Gyi Village, organizing with 115 households (Nothern of Pinlaung), Nan Htar Village village organizing with 96 households (South of Pinlaung), Sin Zin Village establishing with 80 households (West of Pinlaung). The number of all tea farmer households collected in three cluster are 115 in Lae Laung Gyi Village, 96 in Nan Htar Village and 57 households in Sin Zin Village, other 23 households are working in aboard. Required poverty conditions on household's data were collected from rural area by using face to face interview with questionnaire.

3. Scope and Method of the Study

In this study, the households in three villages in Pinlaung Township are focused. The poverty condition of the selected 268 households were observed in May, 2019. Among the various statistical models for descriptive analysis, multiple regression models and binary logistic regression models were applied.

Time is limited to complete the investigations because of the short of funds to cover all the costs. Time was managed so that interned students can get work experience or meet requirements for qualification.

II. Literature Review

Eze et al., (2019) studied "Socio-economic factors influencing poverty among rural households in onicha local government area, ebonyi state, Nigeria". The study examined the socio-economic factors influencing poverty among rural households in Onicha Local Government Area of Ebonyi state, Nigeria. This paper useded multistage random and purposive sampling techniques to select 120 household heads. Primary data used for the study were collected using structured questionnaire. The multiple regression result showed the coefficient of determination (R2) was 0.644 or 64.4%. The overall model was statistically significant ($P<0.05$), signifying that the selected socio-economic characteristics of the households have significant influence on their poverty level. The coefficients of age, sex, educational attainment, household size, farm size, income and membership of social groups were statistically significant.

Franata et al., (2017) studied "Factors Affecting Poverty Level in South Sumatra, Indonesia". The study aims to find out the direct and indirect effect of education, health, government investment and private investment on productivity as well as the poverty level in South Sumatera. The secondary data were collected as the 2004-2005 published by the Central Bureau of Statistics (BPS), Directorate General of Fiscal Balance (DJPK). The analysis technique used in this study was path analysis technique. The Result of the study shows that (1) education, health, and government investment did not directly influence the productivity in South Sumatra, while the private investment directly and positively influenced the productivity in South Sumatra, (2) education, government investment, and private investment did not directly influence the poverty level in South Sumatra, while the health and productivity directly and significantly but negatively influenced the poverty level in South Sumatra, (3) education, health, and government investment indirectly did not influence the poverty

level through the productivity in South Sumatra, while the private investment indirectly have significant and negative impact on poverty level through productivity in South Sumatera.

Akona, (2014) studied "Factors affecting poverty levels in Kenya: case study Busia country". The objective of the study is to analyze the factors affecting poverty level among households and to make policy recommendations in an attempt to curb the poverty level in Busia country by using logistic model. The data was obtained from Keyna Integrated Household Basic Survey (KIHBS) 2005/2006 data. The results indicate that age, marital status, family size and ownership of assets such as land and livestock significantly affect the poverty status. The variables that are negatively correlated with poverty include age of the household head and asset (land and livestock) ownership. Marital status and size of the household are positively correlated with the probability of being poor. Religions, education, other income sources, practicing agriculture, transfers, access to credit do not significantly affect poverty status in the county.

Cuddya et.al (2008) studied "Factors influencing poverty levels in rural households in Southwest China". This paper examines factors behind poverty in Kelang and Haizi, rural villages in Yunnan province in the South West China. Farm household survey data collected in 2003, were used for estimation. Determinants of household income per capita, off-farm employment choice and off-farm income levels were investigated by using regression analysis, probit model and Heckman selection model. The analytical results indicate off-farm employment, land productivity, land area per labour units, education and proximity to a large city play an important role in determining the level of household income per capita.

Rotich et.al., (2017) studied "Effect of Tea Farming Household Characteristics on Poverty Levels Among Tea Farmers in Konoin Sub-County, Kenya". The objectives of the study were to determine the effect of family size, age, gender of household head and number of labour units engaged on poverty levels among tea farmers. The sample that took part in the study was 380, selected from a target population of approximately 36,000 small-scale tea farming households. The sample was selected proportionately from 12 tea catchment areas. Generalized Linear Model (GLM) and censored Tobit regression models were used to analyze data. The household characteristics; household size, gender of the household's head, labour units engaged, age and dependency ratio were found to significantly influence the income levels of the households. Family size was found to be significant in predicting the poverty levels of tea farming households, while the age of the household head and dependency ratio significantly influence both poverty gap and depth of the households.

Habyarimana et al., (2015) study "Analysis of demographic and health survey to measure poverty of household in Rwanda". The objective of the study is use of the asset index in poverty targeting is a modern technique. The Rwanda Demographic Health Survey (RDHS) (2010) was done in two stages. In the first stage 492 villages (known as clusters or enumeration areas) were considered with 12540 households, where 2009 and 10531 households were urban and rural respectively. Secondly, systematic sampling was used to select households in the selected villages. the principal component analysis (PCA) technique in order to create the asset index. The Rwanda data analysis showed that the age of household head, education level of the household head, gender of the household head, place of residence, the province of household head and size of the household (number of household members) were the significant predictors of poverty of the household in Rwanda.

III. Theorical Review

1. Definition of Wealth Index

Wealth is the value of all natural, physical and financial assets owed by a household reduced its liabilities. Wealth index (WI) is a composite index composed of key asset ownership variables; it is used as a proxy indicator of household level wealth.

The wealth index is a composite measure of the cumulative living standard of a household. It is calculated using data on a household's ownership of selected set of assets, such as television, bicycles, and cars; dwelling characteristics such as flooring material; type of drinking water source; and toilet and sanitation facilities. The wealth index considers characteristics that are related to wealth status, avoiding variables that do not represent an asset, or outcome variables.

2. Measurements of Wealth

There are several ways in which wealth, economic status of households and living standards can be measured. Income, expenditure and consumption are three common measurements. The wealth index measures relative wealth and, unlike a poverty line, is not an absolute measure of poverty or wealth. When referring to the wealth of households based on the wealth index we can talk about poorer and wealthier households but we cannot conclude who is absolutely poor and wealthy.

The wealth index quintiles divide the whole population into five equally large

groups, based on their wealth rank. Since the late 1990s, wealth indices have become widely used instruments for measuring economic status of households in low- and middle-income countries. Hundreds of research papers have appeared in which wealth indices were used for studying variation in health, mortality, poverty, education, work and other outcomes in almost all countries of the developing world. Wealth indices are considered effective indicators of long-term socio-economic position, living standard or material well-being of households. A wealth index for each household was calculated by adding the standardized loadings for all assets in the set.

3. Principal Component Analysis (PCA)

For the wealth index, the first principal component from the PCA is assumed to represent relative wealth. It is assumed that wealth is the factor that accounts for the largest amount of variance between households' assets and characteristics. Based on this first principal component, each variable is given a factor weight. The factor weight represents the relative importance of each variable to the constitution of the first principal component.

Calculation of the wealth index is performed through PCA. In order to apply PCA to census microdata, all variables are transformed into a dichotomous version, including the categorical variables for housing characteristics (e.g. material of walls or floor) or access to utilities (e.g. type of water or type of toilet use).

If the PCA has been done on the national survey dataset, the factor weights for each variable can be extracted. Then, wealth index scores based on these factor weights for each respondent in the national survey dataset can also be calculated. And it can be separated the population into wealth quintiles based on the wealth index scores, and see the range of wealth index scores for each of the five quintiles.

4. Binary Logistic Regression

The binary logistic model has extensions to more than two levels of the dependent variable. Binary logistic regression model can be expressed as follows.

$$\text{logit}(p) = \ln\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 X_1 + \cdots + \beta_k X_k + \varepsilon$$

Where, p is defined as success probability. The coefficients are the parameters in the model, are the explanatory variables and is error term. As p ranges from 0 to 1, the logit (p) ranges from $-\infty \text{ to } +\infty$. $\frac{p}{1-p}$ is the odd ration or likelihood ratio and logit (p) is taking the natural logarithm of odd ratio. If p is the probability that a

family will own a house, 1-p is the probability that a family will not own a house. Maximum likelihood method is used to obtain unknown constants (ß0+ß1,...).

Taking the exponent on both sides of binary logistic regression model.

$$\frac{p}{1-p} = e^{\beta_0 + \beta_1 X_1 + \ldots + \beta_k X_k + \epsilon}$$

$$p = \frac{e^{\beta_0 + \beta_1 X_1 + \ldots + \beta_k X_k + \epsilon}}{1 + e^{\beta_0 + \beta_1 X_1 + \ldots + \beta_k X_k + \epsilon}}$$

IV. Poverty and Livelihoods condition Township, Shan State

Shan State is a state located in East Central of Myanmar. Most of the Shan State is a highland, the Shan plateau. Shan State is organized with 14 districts and 83 numbers of township and sub township.

According to the 2017 Myanmar Living Conditions Survey, the poverty rate in Shan State remains high at 28.6 per cent, compared to the national average of 24.8 per cent. Shan is the third highest state or region in terms of its level of vulnerability, after Rakhine and Kayin states according to a countrywide vulnerability review by MIMU and HARP rank.

An estimated 56 per cent of persons in Shan State have some form of vulnerability in relation to housing materials, educational attainment, safe sanitation, drinking water, child dependency.[2] Pinlaung is located about 4800 feet above sea level and it is a township in the Pa-O Self-Administered Zone of Shan State of eastern-central Myanmar.

It is a region with the higher mountains that form the hills through the township. There is a well-known stream called Baluchaung which is flowing across Pinlaung Township from north to south. Railways and motorcar ways can be used for transportation although there is no airway and waterway within the township.

The weather of the region is cool and wet as Pinlaung Township is within the temperate climate zone. Natural disasters have rarely happened in this region. Heavy rain and wind often make a few losses in some villages of this region. To avoid and protect the natural disaster, environmental management plan is still weak for rural people.

The impact of some problems such as necessity of farm area for increasing population and scarcity of drinking water in summer makes the big losses to local

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2) reliefweb.int/country/mmrdata.humdata.org/organization/ocha-myanmar

people. Over-utilization of chemical fertilizers and insecticides is damaging the soil layer year after year. Deforestation is also higher.

The total population of Pinlaung Township living in rural area is 160326 and the population in urban area is 9973. There are various kinds of tribes living in this region. People who live in Pinlaung Township are believe in the different religions. The number of people who are at middle school level and high school level is very few. Children are in the workplace away from the school because of the lack of education of parents and low income.

Most of the local people are farmers who depend on agriculture for their income. It is a rich land of fresh fruits and vegetables which are suitable for its temperate and sunny climate. Farmers grow potato, cabbage, cauliflower, tomato, brinjal, maize, garlic, onion, rice, pigeon pea, tea, chive root and cheroot and others seasonal crop.

They grow paddy for only local consumption. Tea leave (Laphet) is one of major products of Pinlaung township. Some also produce dried tea leaves by using traditional production methods. Some people are making money as a carpenter, mason, tailor, broom maker, etc. On the other hand, job opportunity is very few for them.

Tea is a culture of Myanmar people and now tea can be considered as a commercial commodity. Commercial tea production may be helpful in increased earning of the tea growers. More than 80% of tea is grown in Shan State on high attitudes of at least 1500 meters above sea level.[2] A large number of small and marginal farmers, especially those living in this region depend on tea for their livelihood. Therefore, this study purposes to determine the factors affecting on the poverty levels of tea farmers in small villages of Pinlaung Township, Shan State.

V. Analysis of Poverty of Tea Farmers

1. Descriptive Analysis

In this section, the demographic conditions of tea farmers in rural area of Pinlaung township are analyzed by descriptive method.

In the following tables(1), Descriptive statistics was used to express socio-economic status of tea farmer in Pinlaung Township.

The table (1) expresses the demographic situations of tea farmers in Pinlaung township. According to the data, the number of male household head is 218 and it represents 81.34%. The number of female household head is 50 and it represents

18.66%.

Table 1. Descriptive Analysis of Situations of Tea Farmers

	Frequency	Percentage (%)
Gender		
Male	218	81.34
Female	50	18.66
Age		
19-28	14	5.22
29-38	52	19.40
39-48	76	28.36
49-58	50	18.66
59-68	47	17.54
69-78	21	7.84
79-88	8	2.98
Education		
Illiterate	83	30.97
Monastic	65	24.25
Primary	69	25.74
Middle	31	11.57
High	17	6.34
Graduate	3	1.12
No. of Student		
No Student	95	35.4
1	84	31.3
2	62	23.1
3	25	9.3
4	2	0.7
No. of Family		
1-4	142	52.99
5-8	123	45.89
9-12	3	1.12
Total	268	100.00

Source: Survey Data (May, 2019)

And then, the population of selected age-groups of tea farmers in the studied area is shown in the table (1). Among the selected age-groups, the total population of working age (i.e. age-group between 15 and 64years old) is estimated 239 (89.18%). Therefore, the proportion of working age-group is larger than that of dependents in this township. As a result, it can be concluded that the volume of labor force in the studied area is high.

Table (1) also shows the education level of respondents. First, according to the study, the number of uneducated household head is 83 (30.97%). Secondly, 69 (25.74%) have completed primary education. Thirdly, 65 (24.25%) have studied at Monastic education level. And then, 31 (11.57%) and 17 (6.34%) have completed middle and high education. Finally, 3 respondents, only 1.12% have graduated.

Number of students in a household is also studied. Among them, although 95 households have no student, 84 households have only one student and 62 households have two students. Moreover, 25 households have three students and 2 households have four students.

Finally, the size of households is also studied to estimate the socio-economic situations of tea farmers. The number of family including 1-4 members is the largest size with 142 (52.99%) households. The number of family including 5-8 members is the second largest size with 123 (45.89%) households.

1) Economically Active Members

Table (2) shows the number of economically active members in each household.

Table 2. Economically Active Members

Economically Active Members	No. of Households	Percent
1-3	174	64.93
4-6	92	34.33
7-9	2	0.74
Total	268	100

Source: Survey Data (May, 2019)

According to above table, most of the households have between one and three economically active members, it is 64.93%. Therefore, most of the households have above about three economically active members. Moreover, other households have between seven and nine economically active members, it is 0.74%.

2) Land Tenure of Households

Among the households, 6 households have no land which is 2.2 %. Therefore, 97.8% of household have land and their land acres are present in Table (3).

Table 3. Land Tenure

Acre	Frequency	Percent
≤ 2	184	70.22
3-5	63	24.05
6-8	15	5.73
Total	262	100%

Source: Survey Data (May,2019)

According to above table, it indicates that 70.22% of households owned less than 2 acres or 2 acres. Therefore, average land acres of most of the tea farmers households owned about 2 acres.

3) Wealth Index of Tea Farmers

Table (4) shows the wealth index of tea farmer household heads in Pinlaung Township.

Table 4. Wealth Index

Wealth Index	Frequency	Percent
Poorest	56	20.9
Poorer	53	19.8
Median	53	19.8
Rich	53	19.8
Richest	53	19.8
Total	268	100

Source: Survey Data (May, 2019)

According to above table, most of the tea farmers household heads of 19.8% are poorer, median, rich and richest and 20.9% of tea farmer household heads are poorest in Pinlaung Township.

2. Factors Affecting on Poverty of Tea Farmers

In this study, socio-economic status (Wealth Index) is considered as dependent variable used to find out the factors affecting the livelihood condition of tea farmers. There are two types of wealth index in this study. It is assigned that tea farmers are poor as type 1 and non-poor as type 0.

The dependent variable is defined as:

Y= 1, if poorest and poorer of the tea farmers

Y= 0, if median, rich and richest condition of tea farmers.

Age, Gender, Education, Number of Family Member, Number of Students, Total Income, Loan, Tea Acre and Green Tea Output are considered as independent variables. These variables are categorized as follows:

Y = Dependent Variable

X = Vector of Independent Variables

X_1 = Age

X_2 = Gender

= 1, if household heads are male

= 0, if household heads are female

X_3 = Level of Education

= 1, if tea farmers education is primary

= 0, if tea farmers education is other

X_4 = Number of Family Members
X_5 = Number of Students
X_6 = Total Income
X_7 = Loan
X_8 = Tea Acre
X_9 = Green Tea Output

1) Binary Logistic Regression Model of Tea Farmers

In this section, Binary Logistic Regression model is performed on poverty of tea farmers in rural area. The frequency and percentage distributions of poverty of tea farmers in rural area are presented in table (5).

Table 5 Model Fitting Information

Model fitting criteria	χ^2 value	df	*p*-value
Omnibus Tests of Model Coefficient	59.104	9	0.000
Hosmer and Lemeshow (H-L) Tests	4.629	8	0.796
-2 Log Likelihood	0.201		
Cox & Snell R- Square	0.271		
Nagelkerke R- Square	60.2%		
Overall Correct Prediction	72.3%		

Source: Survey Data (May, 2019)

According to the table, the Omnibus tests of model coefficients give a Chi-Square of 59.104 on 9 df, significant beyond 0.000. There is no evidence of lack of fit based on the H-L statistic (Chi-Square = 4.629, df = 8, p = 0.796). Since -2 log likelihood statistic is 0.201, it can be said that how poorly the model predicts food poverty the smaller the statistic the better the model. The model fitting information includes two different ways of estimating R square (Cox & Snell R^2 and Nafelkerke R^2) The value of Cox & Snell R^2 0.271 means that 27.1% of the variation in poverty is explained by independent variables. Overall, 72.3 % of the poverty of tea farmers are predicted correctly.

The parameter estimates the socio-economic and demographic determinants of the poverty level predicted by binary logistic regression model are shown in table (6).

Table (6) Summary Results for the Binary Logistic Regression Model of Tea Farmers in Pinlaung Township

Table. 6 Binary Logistic Regression Model of Tea Farmers

	B	S.E.	Wald	df	Sig.	Exp(B)
Constant	-0.691	0.688	1.010	1	0.315	0.501
Age	-0.103	0.110	0.880	1	0.348	0.902
Gender	-0.986**	0.444	4.934	1	0.026	0.373
Education	0.839***	0.300	7.847	1	0.005	2.315
Number of Family Members	0.521***	0.131	15.891	1	0.000	1.684
Number of Students	-0.532***	0.180	8.799	1	0.003	0.587
Total Income	0.000***	0.000	6.877	1	0.009	1.000
Loan	-1.714***	0.338	25.728	1	0.000	0.180
Tea Acre	-0.292***	0.107	7.480	1	0.006	0.747
Green Tea Output	0.000	0.000	0.140	1	0.708	1.000

Source: Survey Data (May, 2019)

Note: *** denotes significant at 1% level, ** denotes significant at 5% level, * denotes significant at 10% level`

It can be found that the coefficient of education, number of family members, number of students, total income, loan and tea acre is statistically significant at 1% level. Gender is statistically significant at 5% level. Education, number of family members and total income are positive sign. Gender, number of students, loan and tea acre is negative sign. If the male of household heads increases, the poor level of tea farmers decreases by 0.986. Similarly, primary education level of tea farmers increases; the poor level of tea farmers increases by 0.839. If number of family members in tea farmers increase, the poor level of tea farmers increases by 0.521.

If number of students in tea farmers increase, the poor level of tea farmers decreases by 0.532. The more students the household have, the more poverty it increases. If total income of tea farmers increases, the poor level of tea farmers decreases. Poverty increases because tea farmers have no regular income. If loan of tea farmers increases, the poor level of tea farmers decreases by 1.714. If tea acre of tea farmers increases, the poor level of tea farmers decreases by 0.292.

VI. Conclusion and Suggestions

The main objective of this study is to investigate the factors of affecting poverty level of tea farmers in rural area of Pinlaung township. The local people in these villages are dependent on tea farming for their livelihood. To analyze the poverty of tea farmers households in Pinlaung township, 268 households were randomly selected by using cluster sampling method. The finding is that education level of household heads is illiterate and most of the household heads finished the monastic education. The average land area that households owned was 2 acres. Most of the household

had between 1 and 4 family members and among them three members were economically active members.

In binary logistic regression, it can be found that the coefficient of education, number of family members, number of students, total income, loan and tea acre are statistically significant at 1% level. Gender is statistically significant at 5% level. Education, number of family members and total income are positive sign. Gender, number of students, loan and tea acre are negative sign.

It can conclude that education level of household heads is illiterate. The more students the household have, the more poverty it increases. The poverty increases because tea farmers have no regular income. Without education, a job cannot be got and without an income, tea farmers cannot equip education for their children. Educating the people and controlling a nation's population growth is the gateway to raise the lives of the people suffering from poverty.

In Pinlaung Township, most of tea farmers are still using traditional agriculture characterized by human labor and do not have enough resources to cultivate vast surfaces. Tea Farmers use big quantities of chemical fertilizers and pesticides. As a result, this mechanization and industrialization of the agriculture destroy the soil and the ecosystem in large scale. More actions could be taken in the education of populations to raise the awareness on the issue of organic tea production..

It is needs to do awareness programmes among the people about the role and importance of education in human life. Therefore, the government should focus on doing research so that the vicious circle can be interrupted by generating numerous job opportunities as well as providing free education to the destitute.

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Factors Affecting Gross Domestic Product (GDP) Growth in Myanmar

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ABSTRACT : Gross Domestic Product (GDP) is one of the factors of country's economic growth. If growth of GDP per capita is not consistent within a country, incidence of poverty as well as hinder the progress in health, education, crime and eventually the economic growth will lead to higher. This paper investigates the relationship between GDP growth and the factors such as, Labour Force Participation Rate (LFPR) and Exports in Myanmar. The aim of the study is to analyze the factors affecting GDP growth from 1989 to 2019. The data were based on secondary data source of Myanmar over the period of 1989 to 2019, during 31 years. To detect the stationary of time series data Augmented Dickey-Fuller (ADF) unit root test, Johansen's cointegration test are applied. To investigate the factor effecting on GDP, Vector Error Correction Model (VECM) model is used. The result of the study shows that all variables are stationary at first differences-I(1). Therefore Johansen's cointegration test is applied, it is found that there is cointegration among the variables at rank 1. Hence, VECM model is estimated to analyze the factors effecting on GDP. The estimated of VECM shows that there is a long run relationship among the LFPR, Exports and GDP as well as fluctuation in the short runs of Myanmar. On the other hand, LFPR and Exports are affected on GDP growth of Myanmar. Therefore, the government of Myanmar should encourage exports to sustain the economic growth trend.

Key words *: Economic Growth, Augmented Dickey Fuller, Johansen's Cointegration Test, VECM*

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I. Introduction

Myanmar, formerly known as Burma, is the poorest country in Southeast Asia. Myanmar was under a military regime for decades, yet since 2011, a transition to democracy has been taking place. The new, civilian led, reformist government has taken charge and the country has began to open up to foreign direct investment. Myanmar's economy is pretty diversified. The most important sector of the economy is services, which has been growing steadily in the last few years, and now account for over 38 percent of GDP. The share of agriculture has been declining, and now represents 36 percent of GDP. Finally, industry contributes the remaining 26 percent of GDP.[1)]

Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.[2)]

GDP growth has always been remedied as current issue studied by many researchers. If growth of GDP per capita is not consistent within a country, incidence of poverty as well as hinder the progress in health, education, crime and eventually the economic growth will lead to higher. The factors towards GDP growth are relatively vital to prevent occurrence of socio-political instability.

The value for GDP growth (annual %) in Myanmar was 2.89% as of 2019. Over the past 31 years this indicator reached a maximum value of 13.84% in 2003 and a minimum value of -0.65% in 1991. Myanmar GDP growth rate in 2019 was 2.89%, a 3.86% declined, in 2018.

Labour force participation rate is the proportion of the population ages 15 and older that is economically active: all people who supply labour for the production of goods and services during a specified period.[3)] The developing countries faced the problem of low level labour force participation. However different studies shows that there is a strong correlation between economic growth and labour force participation rate. The skilled labour force improve the economic growth. Labour force participation rate in Myanmar was 61.8 as of 2019. Its highest value over the past 31 years was 75.84 in 1989, while its lowest value was 61.8 in 2019.

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1) https://www.scribd.com/document/429262827/Myanmar
2) https://www.indexmundi.com/facts/indicators/NY.GDP.MKTP.KD.ZG
3) https://www.indexmundi.com/facts/myanmar/indicator/SL.TLF.CACT.ZS

Exports bring money into the country, which increase the exporting of nation's GDP. Exports are a segment of aggregate demand (AD). Rising exports will helps increase AD and cause higher economic growth. Furthermore, exports revenue volatility is strongly linked to growth volatility, so significant fluctuations in exports earnings result in fluctuations in economic growth.

Exports of goods and services comprise all transactions between residents of a country and the rest of the world involving a change of ownership from residents to nonresidents of general merchandise, net exports of goods under merchanting, nonmonetary gold, and services. Data are in current U.S. dollars.[4)]

The latest value for Exports of goods and services (BoP, current US$) in Myanmar was $17,523,382,157 as of 2019. Over the past 31 years, the value for this indicator has fluctuated between $17,523,382,157 in 2019 and $279,363,922.3 in 1989.

Exports represent one of the most important sources of foreign exchange income that ease the pressure on the balance of payments and create employment opportunities. Every government has the international trade policy at the national level to direct its external trade for benefit the economic growth of nation. Exports are one component of international trade. When the country's exports is more than its imports, it has a trade surplus. When the country's imports is more than its exports, it has a trade deficit. Exporting can increase the profits of medium and large businesses in countries.

Exporting goods and services will cause income for the domestic economy. If income earned through exports, the GDP will be increased. The GDP is the single best indicator of economic growth. Exports are generally recognized as a motivating factor for economic growth. Economic growth is primary and crucial factor of developing countries.

This paper investigates the relationship between GDP growth and the factors such as LFPR and Exports in Myanmar.

1. Objectives of the study

The objectives of the study are

(i) to determine long-term relationship of the Labour Force Participation Rate (LFPR), Exports and Gross Domestic Product (GDP) growth in Myanmar

(ii) to analyze the factors affecting Gross Domestic Product (GDP) growth in Myanmar from 1989 to 2019.

2. Method of Study

4) https://www.indexmundi.com/facts/myanmar/indicator/BX.GSR.GNFS.CD

Time series econometrics method can be applied to analyze the factors affecting Gross Domestic Product (GDP) growth. To detect the stationary of time series data Augmented Dickey-Fuller (ADF) unit root test, Johansen's cointegration test are applied. To investigate the factor effecting on GDP, VECM model is used. Secondary data from the World Bank was used to analyze the effects of factors on GDP in Myanmar.

3. Scope and Method of the Study

In this study, the analysis is based on secondary data and it was collected from the World Bank over the period of 1989 to 2019 (31 years). Among various time series econometrics analysis, Augmented Dickey-Fuller (ADF) unit root test, Johansen's cointegration test and VECM model are used in this study. In fact, there are many factors in effecting the GDP. However, for this study, the scope of the study is limited to Gross Domestic Product (GDP) growth, Labour Force Participation Rate and Exports.

II. Literature Review

Kogid et al. (2010) investigated the determinant factors of economic growth in Malaysia: Multivariate cointegration and causality analysis by using secondary data from the period 1970 to 2007. The determinant factors studied are consumption expenditure, government expenditure, export, exchange rate, and foreign direct investment in Malaysia. This study used cointegration analysis and the causality approach by Johansen and ECM to analyze the relationship between economic growth and the determinant factors. The results of this study show that there exists long-run cointegration and multiple short-run causal relationships between economic growth and the determinant factors. The study concludes that consumption expenditure and export play important roles as determinant factors to economic growth, and government expenditure, exchange rate and foreign direct investment may have a role as a catalyst and complement determinant factors to economic growth in Malaysia.

Mishra (2011) studied the dynamics of relationship between exports and economic growth in India. This paper is an attempt to reinvestigate the dynamics of the relationship between exports and economic growth for India over the period 1970 to 2009. Applying popular time series econometric techniques of cointegration and

vector error correction estimation, the study provides the evidence of stationarity of time series variables, existence of long-run equilibrium relation between them, and finally, the rejection of export-led growth hypothesis for India by the Granger causality test based on vector error correction model estimation. The estimates of the VECM indicate the existence of a unidirectional causality running from real GDP to exports. The Granger causality test indicates that there is a causal relationship running from GDP to exports in the long-run, but not in the short-run.

Ronit & Divya (2014) investigated the relationship between the growth of exports and growth of gross domestic product of India using yearly data from 1969 to 2012. This study utilized Augmented Dickey Fuller (ADF) unit root test and Granger Causality Test. The study found that growth of exports depends positively on growth of GDP with a year lag. Further the Granger Causality Test determines that GDP Growth causes Export growth in India. Finally Impulse Response Functions generated show that there are much higher responses of export through a change in GDP.

Shahid (2014) examined the impact of labour force participation on economic growth in Pakistan by using secondary data from the period of 1980 to 2012 which is collected from Pakistan Bureau of Statistic, State Bank of Pakistan and World Bank. Initially Augmented Dicky Fuller and Phillip Perron tests are used to that shows gross fixed capital formation is stationary on first difference but other variable station on level and intercept. Furthermore, Johansen Co-integration test shows that the long run relationship exist between the variable. The vector error correction model indicated that economic growth has negative insignificant, gross fixed capital formation positive significant and labour force participation has negative significant relationship in short run.

Andrei & Andrei (2015) conducted the vector error correction model in explaining the association of some macroeconomic variables in Romania. The purpose of this paper is to empirically analyze the long and short runs association of some macroeconomic variables in Romania. Variables used across regression include foreign direct investments (FDI), imports, exports, GDP and labour and this paper also take into account some economic and financial crisis' influence on these. In order to establish this influence, a dummy was used for the 2008-2012. Cointegration was performed under Johansen test and a VECM was applied according to its result. The model results point on the association between variables on both long and short runs. Then, Granger test under VECM was equally applied in order to establish the uni or bi-directional causality between variables. The study found that the economic crisis actually caused significant influence on FDI, imports, exports and GDP and rather no influence on labor, as reliable resource.

Aziz and Azmi (2017) studied the factor affecting gross domestic product (GDP) growth in Malaysia by using time series data from 1982 to 2013. This paper

investigates the relationship between Gross Domestic Product (GDP) growth and the factors such as Inflation, Foreign Direct Investment (FDI) and Female Labour Force Participation in Malaysia. The study made use of Ordinary Least Square method (OLS) and Augmented Dickey Fuller (ADF). The results identify that among the factors of FDI and Female Labor Forces have positive impact on GDP growth. However, FDI is the only variable that contributes significantly to GDP growth in Malaysia. Moreover, Inflation correlated negatively with GDP growth but it is not significant factor towards GDP growth in Malaysia. Furthermore, it is found that the GDP, Inflation, FDI and Female Labor Forces are stationary in levels.

Bakari, S., & Krit, M. (2017) examined the nexus between exports, imports and economic growth: Evidence from Mauritania using annual time series data for the period 1960-2015. The aim of this paper is to investigate the relationship between exports, imports, and economic growth in Mauritania This study was tested by using Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) stationary test, cointegration analysis of Vector Error Correction Model and the Granger-Causality tests. According to the result of the analysis, unit root tests show that economic growth, exports and imports series become stationary when first difference is considered. Also, it was determined by using cointegration analysis that there is relationship between the three variables in Mauritania. Also, and according to the Vector Error Correction Model, exports have a positive effect on economic growth. However, imports have a negative effect on economic growth. On the other hand, and according to the Granger-Causality tests, we defined that there is unidirectional causality between imports and economic growth. In addition, the results of the Granger Causality Tests show that there is no relation of causality between exports and GDP.

III. Methodology

The GDP, LFPR and Exports of Myanmar were analyzed in this study. The study period is from 1989 to 2019 and based on the secondary data and the require data and information are collected from the reports of World Bank. Among the various econometric time series model, Unit Root (ADF) test, Johansen's cointegration test and Vector Error Correction Models (VECM) were used for these variables. The entire data analysis has been performed STATA software in this study.

1. Tests of Stationarity

To determine whether, the series is stationary or non-stationary, (1) graphical analysis (2) the correlogram test and (3) unit root test can be applied. In this study,

unit root test are applied.

The Unit Root Test: The tests were performed an all series (GDP, LFPR and Exports) by using the Augmented Dickey-Fuller (1979) and Phillips-Peron (1988) tests. The ADF test is a parametric test and it has low power whereas PP test is based on non-parametric modification of Augmented Dickey-Fuller tests. A test of stationary (or non-stationary) that has become widely popular over the past several years in the unit root test.

The unit root (stochastic) process is

$$Y_t = p\,Y_{t-1} + u_t; \qquad -1 \le p \le 1$$

If ρ=1: the case of the unit root, equation becomes a random walk model without drift. If it is, Y_t is non-stationary. This is the general idea behind the unit root test of stationary.

For the theoretical reasons, subtract from both side of above equation to obtain;

$$Y_t - Y_{t-1} = p\,Y_{t-1} - Y_{t-1} + u_t$$

$$= (p-1)\,Y_{t-1} = u_t$$

Since u_t is a white noise error term, it is stationary, which means that the first differences of a random walk time series are stationary. Take the first differences of Y_t and regress them on Y_{t-1} and see if the estimated slope coefficient in this regression is zero or not. If it is zero, it can be concluded that Y_t is non-stationary. But if it is negative, it can be concluded Y_t is stationary.

2. Co-integration Test

Co-integration is the statistical implication of the existence of long run relationship between the variables which are individually non-stationary at their level form but stationary after first difference. The theory of co-integration can therefore be used to study series that are non-stationary but a linear combination of which is stationary. Two main procedures are used to test for co-integration: the Engle and Granger (1987) test and the Johansen (1990) co-integration test. In this paper, the Johansen (1990) co-integration test based on residuals was used.

Johansen and Juselius Cointegration test procedures uses two tests to determine the number of cointegration vectors: the Maximum Eigenvalue test and the Trace test. The Maximum Eigenvalue statistic tests the null hypothesis of r cointegrating

relations against the alternative of r+1 cointegrating relations for r = 0, 1, ..., n-1. This test statistics are computed as:

$$LR_{\max}\ (r\ /\ n\ +1)\ =\ -T\ *\ \log(1-\hat{\lambda}_t)$$

Where λ is the Maximum Eigenvalue and T is the sample size. Trace statistics investigate the null hypothesis of r cointegrating relations against the alternative of n cointegrating relations, where n is the number of variables in the system for r = 0, 1, 2...n-1. Its equation is computed according to the following formula:

$$LR_{tr}(r/n) = -\ T\ *\ \sum_{t=r+1}^{n} \log_{f()}(1-\hat{\lambda}_t)$$

In some cases Trace and Maximum Eigenvalue statistics may yield different results and indicates that in this case the results of trace test should be preferred.

3. Vector Error Correction Model (VECM)

If cointegration has been detected between series it shows that there exists a long-term equilibrium relationship between them so VECM is applied in order to evaluate the short run properties of the cointegrated series. In case of no cointegration VECM is no longer required and Granger causality tests is directly preceded to establish causal links between variables. The regression equation form for VECM is as follows:

$$\Delta Y_t = \alpha_1 + p_1 e_1 + \sum_{i=0}^{n} \beta_i \Delta Y_{t-1} + \sum_{i=0}^{n} \delta_i \Delta X_{t-1} + \sum_{i=0}^{n} \gamma_i \Delta Z_{t-1}$$

$$\Delta X_t = \alpha_2 + p_2 e_{i-1} + \sum_{i=0}^{n} \beta_i \Delta Y_{t-1} + \sum_{i=0}^{n} \delta_i \Delta X_{t-1} + \sum_{i=0}^{n} \gamma_i \Delta Z_{t-1}$$

In VECM the cointegration rank shows the number of cointegrating vectors. For instance a rank of two indicates that two linearly independent combinations of the non-stationary variables will be stationary. A negative and significant coefficient of the ECM (i.e. ei-1 in the above equations) indicates that any short-term fluctuations between the independent variables and the dependent variable will give rise to a stable long run relationship between the variables.

IV. Results and Discussion

Firstly, the stationary of the variables are checked by using unit root test before testing for VECM. Secondly, test for co-integration among the variables and estimate the Vector Error Correction Model were applied in this study. The annual time series data of Myanmar are used from the period 1989 to 2019, gathered from World Bank.

1. Analysis of Augmented Dickey-Fuller Stationary Test

By using unit root test, the test statistics of Augmented Dickey Fuller (ADF) will be calculated for GDP, Labour Force Participation Rate and Exports of Myanmar. These results are presented in table 1, 2 and 3.

Table 1 ADF Test Results for GDP of Myanmar

Test		t- statistics	Prob
ADF	level	-2.124	0.2351
	1st difference	-4.925	0.0000
Critical value	1%	-3.730	
	5%	-2.992	
	10%	-2.626	

Source: World Bank

According to the above table, the ADF (level) test statistic is -2.124 with associated significance of 0.2351 which is greater than 0.05. Thus, the null hypothesis is failed to reject and conclude that the non-difference data is not stationary. After the first difference, the test statistic is -4.925 with a significance level of 0.0000 which is less than 0.05. So, the null hypothesis is rejected and concluded that the first difference data is stationary. It can also be concluded that GDP is stationary at the order of integration 1, I(1). Similarly, the Labour Force Participation Rate of Myanmar is tested. The tests results are described in the following table.

Table 2 ADF Test Results for Labour Force Participation Rate of Myanmar

Test		t-statistic	Prob
ADF	level	0.942	0.9936
	1st difference	-3.311	0.0144
Critical value	1%	-3.730	
	5%	-2.992	
	10%	-2.626	

Source: World Bank

According to the above table, the ADF (level) test statistic is 0.942 with associated significance of 0.9936 which is greater than 0.05. Thus, the null hypothesis is failed to reject and concluded that the non-difference data is not stationary. After the first difference, the test statistic is -3.311 with a significance level 0.0144 which is smaller than 0.05. So, the null hypothesis is rejected and concluded that the Labour Force Participation Rate is stationary by taking first differencing. Similarly, the Exports of Myanmar is tested. The tests results are described in the following table.

Table 3 ADF Test Results for Exports of Myanmar

Test		t-statistic	Prob
ADF	level	3.079	1.0000
	1st difference	-2.873	0.0486
Critical value	1%	-3.730	
	5%	-2.992	
	10%	-2.626	

Source: World Bank

According to the table 3, the ADF (level) test statistic is 3.079 with associated significance of 1.0000 which is greater than 0.05. Thus, the null hypothesis is failed to reject and concluded that the non-difference data is not stationary. After the first difference, the test statistic is -2.873 with a significance level 0.0486 which is smaller than 0.05. So, the null hypothesis is rejected and concluded that the Exports is stationary by taking first differencing.

2. Analysis of Johansen's Cointegration Test

The results of the Johansen's cointegration test are shown in tables 4 including the trace tests of the study.

Table 4 Johansen Test for Cointegration

maximum rank	parms	LL	eigenvalue	trace statistic	5% critical value
0	12	-683.03582	.	39.4540	29.68
1	17	-670.36089	0.59560	14.1041*	15.41
2	20	-664.4563	0.34411	2.2949	3.76
3	21	-663.30885	0.07869		

Source: World Bank

In the above table, the trace statistics at r = 0 of 39.4540 exceeds its critical value of 29.68, reject the null hypothesis of no cointegrating equations. And then the trace statistics at r = 1 of 14.1041 is less than the critical value of 15.41, therefore it cannot reject the null hypothesis that there is one cointegration relationship between

the variables. After determining that there is indeed a long run cointegration relationship among the variables, the next step is to collect the VECM estimates.

3. Selection of Optimal Lag Lengths for the VECM Model

In practice, it is impossible that all the criteria recommend one lag length as optimal. "One may have to be content with a lag length supported by 2-3 criteria only". These lag specification criteria results are reported in table 5. To determine the Optimal Lag Lengths, sample time series data including 31 observations is used after adjustments.

Table 5 Lag Determination of VECM

Lag	LL	LR		p	FPE	AIC	HQIC	SBIC
0	-630.535				2.9e+17	48.7334	48.7752	48.8786
1	-616.13	28.81	9	0.000	1.9e+17	48.3177	48.4849	48.8983
2	-610.437	11.386	9	0.250	2.6e+17	48.5721	48.8647	49.5882
3	-582.369	56.135	9	0.000	6.5e+16 *	47.1053	47.5233 *	48.557*
4	-573.33	18.077 *	9	0.034	7.7e+16	47.1023 *	47.6458	48.9895

Source: World Bank

According to FPE, HQIC and SBIC the most suitable lag of VECM is 3.

4. Analysis of Multivariate Results of VECM

The table 6 shows that the result of model specification tests of VECM.

Table 6 Model Specification Tests of VECM

Equation	Parms	RMSE	R-sq	chi2	P > chi2
D_GDP	8	1.75084	0.8427	101.7955	0.0000
D_LFPR	8	0.30304	0.5523	17.64966	0.0240
D_EX	8	7.0e+08	0.4184	13.66834	0.0908

Source: World Bank

According to the above table, VECM has taken the first difference of these variables, such that represented as D_GDP, D_LFPR and D_EX. Further, the R-square values of all three variables are enough to justify their causality, and p values less

than 10% also indicate significance.

The table 7 shows that the results of the effect of LFPR and Exports on GDP.

Table 7 The Effect of LFPR and Exports on GDP

		Coef.	Std.Err.	Z	P >
D_GDP	_ce1				
	L1.	-1.289577	.310235	-4.16	0.000
	GDP				
	LD.	.306459	.2423701	1.26	0.206
	L2D.	.1036407	.1366881	0.76	0.448
	LFPR				
	LD.	-1.594725	1.216851	-1.31	0.190
	L2D.	-2.756914	1.021744	-2.70	0.007
	Exports				
	LD.	7.04e-10	7.46e-10	0.94	0.345
	L2D.	1.30e-09	6.64e-10	1.96	0.050
	_cons	-.7904632	.3586071	-2.20	0.028

Source: World Bank

According to Table 7, the coefficient of error correction term has negative coefficient and significance at 5% level. Therefore, it can be found that there is long-term causality between GDP and the other two variables LFPR and Exports.

Furthermore, to examine the short-term causality between variables, check individual lag coefficients and p values for each independent variable. As the results, the 2nd lag of LFPR and Exports are significant (p-values are 0.007 and 0.050). That means the 2nd lag of LFPR and Exports have short-term causality with GDP. On the other hand, the current GDP depends on the LFPR and Exports of last two years.

The table 8 shows that the results of the effect of GDP and Exports on LFPR.

Table 8 The Effect of GDP and Exports on LFPR

		Coef.	Std.Err.	Z	P >
D_LFPR	_ce1				
	L1.	-.0367912	.0536964	-0.69	0.493
	GDP				
	LD.	.0795479	.0419502	1.90	0.058
	L2D.	.0224299	.0236584	0.95	0.343

LFPR				
LD.	-.4624555	.2106164	-2.20	0.028
L2D.	-.6459666	.1768467	-3.65	0.000
Exports				
LD.	2.87e-10	1.29e-10	2.23	0.026
L2D.	3.31e-10	1.15e-10	2.88	0.004
_cons	-.0452636	.0620688	-0.73	0.466

Source: World Bank

According to above Table 8, the error correction term has negative coefficient but it is insignificant p-value of 0.493, which indicate that this VECM do not show any long-term causality between LFPR and other two variables.

However, a short-term causality is evident in case of 1st lag of GDP, LFPR and Exports and 2nd lag of LFPR and Exports with significant p-values. Therefore, current LFPR depends on the GDP of last year and Exports of last year and last two years.

The table 9 shows that the results of the effect of GDP and LFPR on Exports.

Table 9 The Effect of GDP and LFPR on Exports

	Coef.	Std.Err.	Z	P >
_ce1				
D_Export				
L1.	-1.98e+08	1.24e+08	-1.60	0.110
GDP				
LD.	2.47e+08	9.69e+07	2.54	0.011
L2D.	9.26e+07	5.47e+07	1.69	0.090
LFPR				
LD.	-3.41e+08	4.87e+08	-0.70	0.483
L2D.	-9.60e+08	4.09e+08	-2.35	0.019
Exports				
LD.	-.1052259	.2981707	-0.35	0.724
L2D.	.1325349	.2656561	0.50	0.618
cons	8.47e-07	1.43e+08	0.00	1.000

Source: World Bank

According to Table 9, the error correction term has negative coefficient but it is insignificant p-value of 0.493, which indicate that this VECM do not show any long-term causality between Exports and other two variables.

However, a short-term causality is evident in case of 1st lag of GDP and 2nd lag of GDP and LFPR with significant p-values. Therefore, current exports value depends on the GDP of last year and last two years and LFPR of last two years.

5. Diagnostics Tests

To ensure whether the VECM is correctly specified or not, a set of diagnostics tests such as tests for normality and serial correlation need to be performed.

Therefore, the residuals were tested for the presence of serial auto-correlation using the Lagrange multiplier (LM) method. The results of the LM test are presented in the table 10.

Table 10 LM Test for Autocorrelation of Residuals VECM

lag	chi2	df	Prob > chi2
1	20.2584	9	0.01638
2	11.5582	9	0.23938

Source: World Bank

The null hypothesis states that there is no autocorrelation at lag order. Although p values are significant at lag 1, the p values are insignificant again at lag 2 so there is no autocorrelation. Thus the null hypothesis is accepted. This means that at lag 2, VECM model is free of the problem of autocorrelation.

Furthermore, a requirement for the models to be valid is the residuals to be conform to asymptotic normality restrictions. To check whether the normality assumptions of error term, Jarque-Bera (JB) test was used. The results of Jarque-Bera (JB) test are presented in Table 11.

Table 11 Results of Jarque-Bera (JB) Test

Equation	chi2	df	Prob > chi2
D_GDP	3.206	2	0.20129
D_LFPR	2.816	2	0.24460
D_Export	3.074	2	0.21501
ALL	9.096	6	0.16823

Source: World Bank

The Jarque-Bera is a statistical test that determines whether the error term of GDP, LFPR and Exports are normally distributed or not. The null hypothesis of the Jarque-Bera test is that the error term of GDP, LFPR and Exports are normally distributed against the alternative hypothesis that they are not. Obviously, the Jarque-Bera statistic accepts the null hypothesis of a normal distribution for the error term of these variables in the sample of the study because the probability value of all variables is greater than 5%.

V. Conclusion

This study investigated the relationship between labour force participation rate, exports and GDP growth rate in Myanmar by using times series data from 1989 to 2019. This study uses the ADF unit root test, Johansen cointegration test and Vector Error Correction model to investigate the long term relationship between variables. It can be found that ADF unit root shows that GDP, LFPR and Exports series become stationary when first difference. Furthermore, this study used the Johansen cointegration test that shows the long term relationship exist between the variables. The vector error correction model indicated that there is long-term causality between GDP and the other two variables LFPR and Exports. In addition, the current GDP depends on the LFPR and Exports of last two years. Moreover, current LFPR depends on the GDP of last year and Exports of last year and last two years. And then, current exports value depends on the GDP of last year and last two years and LFPR of last two years. Therefore, there is a short-term correlation between variables. On the other hand, LFPR and Exports are affected on GDP growth of Myanmar.

Therefore, the government of Myanmar should encourage exports to sustain the economic growth trend. There is need to build a new education institutes that makes labour skilled, which is enhance the economic growth of Myanmar.

For future studies, researchers should attempt to use the data that cover longer study duration of above 31 years by using other variables.

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The Impact of Behavioral Finance on Investment Decisions of Investors in Yangon Stock Exchange

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ABSTRACT: Over the last twenty years, behavioral finance has been growing specifically because investors rarely behave according to the assumptions made in traditional financial and economic theory. Behavioral finance extends the analysis to the role of behavioral factors in decision making, such as availability, representativeness, overconfidence, anchoring, ambiguity aversion, framing, mental accounting, and loss aversion. This study aims to identify those behavioral factors which influence the investment decisions of the individual investors in Yangon Stock Exchange. Data collection was made by distributing structural questionnaires to 400 individual investors and 390 responses have been returned back and analyzed. Findings were developed through the regression analysis with the aid of SPSS software. The results show that all the above behavioral factors: availability, representativeness, overconfidence, anchoring, ambiguity aversion, framing, mental accounting, and loss aversion have moderate positive relationships with dependent variable: investment decisions. Based on the analysis, among eight behavioral factors, overconfidence is not significant with the investment decisions and availability is negatively influenced investment decisions, and the remaining factors are positively influenced the investment decisions of individual investors in YSX. Based on those findings, individual investors of YSX should take some more educational courses in concerned with the behavioral biases that affect investment decision making in order to be able to manage their portfolios effectively and efficiently.

Key words *:Behavioral Finance, Traditional Finance, Individual Investors, Behavioral Factors, Investment Decision*

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I. Introduction

Investment decision is the decision to invest the current commitment of money or other resources in the expectation of getting future benefits for an investor. Investors make an investment for the anticipated future returns, however, those returns can rarely be predicted and precisely as well. Some economists have come to interpret the anomalies literature as consistent with several 'irrationalities" that characterize the individuals' decision making behavior. According to the conventional financial theory, investors are assumed to be rational wealth-maximizers and they usually follow some basic financial rules and their investment strategies by taking care the risk-return consideration. (Jagongo & Mutswenje, 2014). On the other hand, according to the traditional economic theory, people are rational agents and they usually make decisions in order to take advantage of the opportunities available to them. Investors also think on themselves that they are rational and logical. However, when an investment decision, their emotional inclinations, ingrained thought patterns, psychological biases, and other factors may affect their investment decisions. (Jagongo & Mutswenje, 2014). Of course, the intention of this paper is to analyze the behavioral factors affecting the individuals' investment decisions in Yangon Stock Exchange. The investment decisions of each individual and institutional investors in the stock market play a vital role in the nation's economy.

In Myanmar, since after 2011, the remarkable and on-going political reform process has been followed by an economic opening to trade and investment. Substantially, the stock market directly supports the growth of Economy of the nation and provides liquidity and marketability for the investors to deal into share and securities once they issued in primary market. In addition, it pools fund from the individuals and institutions and channelize towards business and industries. Since the stock market is one of the most key bases for any organization to fund-raise (http://en.wikipedia.org/wiki/Stock market) and it is a place where the securities can be sold and purchased at a decided price, the individuals can get many benefits by making investment in stock market like long term capital growth, liquidity, dividend income, and control over the inflation (Aziz & khan, 2015). There are many perceptions to invest the money in stock market, some investors invest for the purpose of becoming the owner of the firm, some for taking dividend and some invest for capital gain and some for the purpose of control over the firm.

Since the stock market and the country's economy have a close relationship, the booming market can provide positive effects on the growth and development of a country. In Myanmar, the Government also preceded to establish the capital market with the aim of development of the nation's economy. Due to those financial sector

reforming process, the Yangon Stock Exchange has emerged on 9th December, 2015. In this study, the impact of behavioral factors that influence on the individual investors investment decision in Yangon Stock Exchange is come to be examined.

II. Rationale of the Study

After commencing the Yangon Stock Exchange, the stock market, in Myanmar, is still emerging and getting performance with six securities companies, six listed companies, and more 50,000 individual investors. Since the number of investors is getting increased than ever before, the need to understand how individual are involved in trading the stocks and keeping it for future returns. Those needs are the fundamental requirements of behavioral finance which emphasizes how people make real decisions and make a difference as well. A better understanding of behavioral processes and outcomes is also important for financial planners, companies, government, etc. Therefore, this understanding of how investors generally respond to market movements will help them devising appropriate asset allocation strategies, future financial plans, required legislations and macroeconomic policy respectively. This study examined that how investors make investment decisions derived from prevailing behavioral finance theories.

III. Problem Statement of the Study

Many economists have come to interpret the anomalies of individuals who making complicated decisions which two characteristics: that is the investors do not always process information correctly and therefore infer incorrect probability distributions about future rates of return, and even in a given probability distribution of returns, they often make inconsistent or systematically suboptimal decisions. The existent of irrational investors would not be sufficient to render capital markets. In today's competitive and complicated World, many models of financial markets that emphasizes some potential implications of psychological factors affecting investor behavior are emerged gradually. For better return, comprehension of behavior is very useful for investment decisions (Jagongo & Mutswenje, 2014). It is likewise very useful for security organizations so that they can foresee more correctly and give better proposals to the investors and recognize which behavioral factors impact more the investment decision of individual investors in Yangon Stock Exchange.

IV. Objective of the Study

The objective of the study is to study the impact of behavioral finance on investment decisions of individual investors in Yangon stock Exchange.

V. Methodology of the Study

This study applied both primary and secondary data. The primary data were collected from 390 individual investors in the Yangon Stock Exchange by distributing structured questionnaire. The structured questionnaire had two sections. In Section I, the general data about the investor is gathered and in Section II, the data on factors that influence individual investment decisions are collected. The respondents were asked to indicate their degree of how they are affected by each of items on five-points Likert scale. This study used convenient sampling method for data collection. The sample size; 384 was determined by Cochran's formula. Though the sample size was 384, questionnaires are distributed to 400 individual investors and 390 responses have been returned back and analyzed with the aid of SPSS software package. The study applied the combination of descriptive analysis, reliability and validity test, Pearson correlation analysis, and multiple linear regression analysis. The secondary data were collected from international research articles and papers, and Yangon stock Exchange web site.

VI. Scope and Limitations of the Study

This study focused only on individual investors who are registered at Yangon stock Exchange. This study analyzed the relationship between behavioral finance practices and investment decisions by focusing Prospect theory and Heuristics theory.

VII. Literature Review

The major concepts of prospect theory consist of framing, loss aversion, regret aversion, and mental accounting. The concepts of heuristic theory involve overconfidence, representativeness, anchoring, ambiguity aversion, Gambler's fallacy, availability bias.

1. Definitions of Behavioral Finance

Behavioral finance is the paradigm where financial markets are contemplated utilizing models that are less restricted than those based on Von Neumann–Morgenstern expected utility theory and arbitrage assumptions. Behavioral finance utilizes this collection of knowledge instead of taking the pompous strategy that it ought to be overlooked. Limit to arbitrage refers to anticipating in what conditions arbitrage forces will be effective, and when they will not be (Ritter J. R., 2003).

2. Traditional Finance Vs. Behavioral Finance

The traditional finance theory: such as Neumann and Morgenstern's Expected utility theory, Markowitz's Modern Portfolio theory, and Fama's Efficient market hypothesis explain the concept of utility function of maximizing the wealth with in informal efficient market. These theories depend on presumptions that the investor is rational, risk averse and uses the utility curve to expand the profit. Over the past fifty years established finance theory has assumed that investors have little trouble in making financial decisions and are well-informed, cautious, and reliable. The traditional theory holds investors are not befuddled by how information is presented to them and are not swayed by their emotions. But in reality does not match these assumptions.

Consequently, behavioral finance has been becoming in the course of the most recent twenty years. The behavioral finance model underlines investor behavior, prompting various market anomalies and inefficiencies. This new idea for finance clarifies individual behavior and group behavior by integrating the fields of sociology, psychology, and other behavioral sciences. It also predicts financial markets (Byrne & Utkus, n.d).."

3. Behavioral Finance and Decision Making

The decision making of investors varies as their various inclinations related to their aversion of risk and inclinations in different composition of their investment portfolio. That is why it is important to realize individual behavior while considering their investment making pattern. The interest of behavioral field has been increasing during the last two-three decades due to the empirical evidence that individuals rarely behave by the assumptions of traditional finance theories and formation the perception that the theory of finance should take into account the observed individual behavior. Investigations in behavioral finance area have indicated that human psychology is very vital role in making financial decisions. Therefore,

Behavioral finance researchers generally conduct the research concerned with the human behavior to more understand the decision-making process (Koseoglu, 2019).

4. Prospect Theory

In 1979, Kahneman and Tversky developed Prospect Theory which states that the people have an irrational tendency to be less willing to gamble with profits than with losses (Ngoc, 2014). Prospect theory is a mathematically formulated alternative to the theory of expected utility maximization following Von Neumann Morgenstern rationality.

Prospect theory describes that some states of mind affecting an individual's decision-making processes include regret aversion, loss aversion and mental accounting, ambiguity aversion, and framing.

(a) Regret Aversion

Regret aversion refers to people's emotion after making a mistake (Plous, 1993). According to Shiller (1998) and Lebaron (1999), investors avoid selling decreasing shares, and readily sell increasing ones. And Fogel and Berry (2006) also found that investors tend to be more regretful about holding losing stocks too long than selling winning ones too soon.

(b) Loss Aversion

Loss aversion is the different degree of mental punishment people have from a comparable size loss or gain. As Barberis and Huang (2001) stated, a loss coming after earlier gain is proved less painful than usual while a loss arriving after a loss seems to be more painful than usual. Investors usually show highly risk-averse behavior when facing a profit and more risk tolerant behavior when facing a loss (Byrne & Utkus, n.d). Lehenkari and Perttunen (2004) found that both positive and negative returns in the past can reinforce the negative relationship between the selling trend and capital losses of investors, suggesting that investors are loss averse. Risk aversion may produce bad decision affecting investor's wealth (Odean, 1998). Loss aversion may encourage investor-herding behavior, as an example, to invest in the companies that others recommend as they carry implicit insurance against regret (Keening, 1999).

(c) Mental Accounting

According to Shiller (2000), mental Accounting is the propensity for individuals to organize their world into separate mental accounts. The investors may take acre of each element of their investment portfolio separately, which can lead to inefficiency,

and inconsistency in making investment decision. Rockenbach (2004) found that the connection between various investment possibilities is often not made as it is helpful for arbitrage free pricing.

(d) Ambiguity aversion

Ambiguity aversion can be defined as the tendency to prefer the familiar to the unfamiliar or the known to the unknown. The avoiding of ambiguity can lead to discounting opportunities with greater uncertainty in favor of many certainties. In that case, the investors' bias against uncertainty may create an opportunity cost for their portfolio.

(e) Framing

Framing refers to the way individuals see alternatives and define the context in which they are making a decision. A ccording to Tversky and D. Kahneman's Framing Decisions and the Psychology of Choice, investors framing determines how they imagine the problem, its possible solutions, and its connection with other situations.

5. Heuristics theory

Heuristics theory states that investors' decision-making is not rational so that it is very difficult to separate the emotional and mental factors involved in the process of decision-making in which the investors go through by gathering pertinent assessment of the information (Jahanzeb, Muneer, & Rehman, 2012). Heuristics include simple experience-based techniques for problem solving, known as rules-of-thumb or shortcut. People generally applies to rules-of-thumb or heuristics to make their decisions and judgments. The cognitive biases of heuristic are: Representativeness, Gambler's fallacy, Anchoring, Overconfidence and Availability bias as observed by Kahneman & Tversky (1979).

(a) Representativeness

Tversky and Kahneman (1973) said that when judging the probability of an event by representativeness, people compare the essential features of the event with the structure from which it originates. By doing so, one estimates probability by assessing similarity or connotative distance. In financial markets, representativeness can manifest itself when investors seek to buy "hot" stocks and to avoid stocks, which have had poor performance in the recent past (De Bondt, 2000). That indicates that representativeness is a process relied on stereotypes too much. Ritter J.R (2003) also showed in the previous paper that representativeness may result in some biases such as people put too much weight on recent experience and ignore the average long-term rate.

(b) Gambler's Fallacy

Gamblers' fallacy is the erroneous belief that prior outcomes in a series of previous events affect the probability of future outcomes. It is related with the situation where investors tend to predict a reverse of a particular trend. Mostly, it leads investors to anticipate the end of a good or bad market performance (Shabgou & Mousavi, 2016). The investors are biased to a status tend to choose an alternative disregarding whether the choice is optimal or not. (Kempf & Ruenzi, 2006). When people foresee incorrectly the reverse points which are considered as the end of good (or poor) market returns, in stock market, Gamblers' fallacy will arise.

(c) Anchoring

Anchoring is a cognitive or behavioral bias that an individual depends too heavily on an initial piece of pre-existing information they are offered when making decisions.

According to Kahneman & Tversky (1974), anchoring is a phenomena used in the situation when people use some initial values to make estimation, which are biased toward the initial ones as different starting points yield different estimates. In financial market, anchoring arises when investors take into account the initial purchase price when selling or analyzing. Thus, today prices are often determined by the past price (Luong & Ha, n.d).

Kalmeman and Riepe stated that investors assume the current prices are right and usually use their purchase price as a reference point. Waweru et al (2008), also said that Anchoring has some relationship with representativeness because it also reflects that people often focus on recent experience and tend to be more optimistic when the market rises and more pessimistic when the market falls cited in (Shabgou & Mousavi, 2016).

(d) Overconfidence

Basically, people always believe beyond their own abilities, and investors and analysts are overconfident in areas when they have some knowledge (Shiller, 1998) (Evans, 2006) . In addition (Byrne & Utkus, n.d) stated that investors with too much confidence in their trading skill often trade too much, with a negative effect on their returns.

(e) Availability

"Availability bias arises when people make use of easily available information excessively" (Luong & Ha, n.d). Investors place more weight on available information. Investors favor to invest in local companies because investors always prefer what they know and are familiar with, disregarding the fundamental principles of portfolio

investment, which is important for optimization (Barberis, 2001).

6. Conceptual Framework of the Study

This study examines the impact of behavioral factors on investor decisions at the Yangon Stock Exchange. In this study, the behavioral factors taken as independent variables are overconfidence, loss aversion, representativeness, availability, and mental accounting. Investment decision is taken as dependent variable.

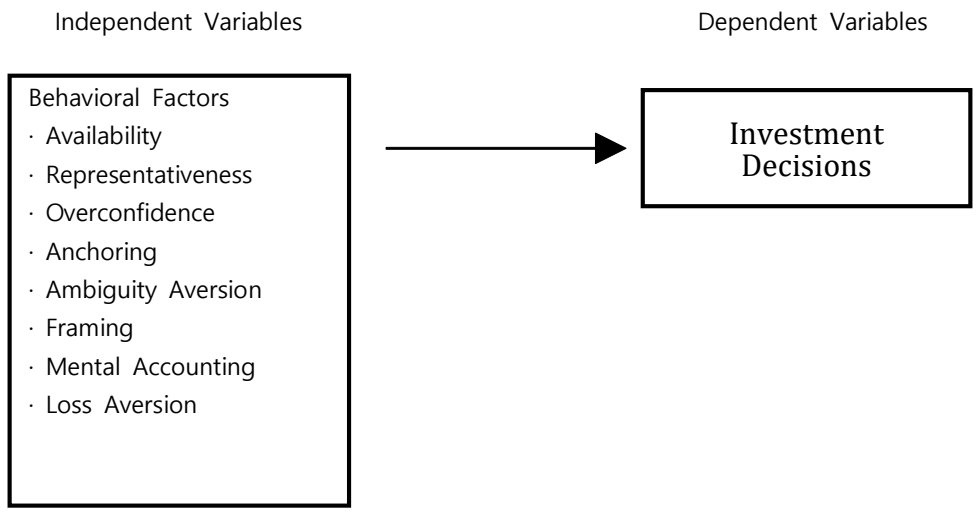

Figure 1. Conceptual Framework

Source: Own Compilation

VIII. Data Analysis and Interpretation

In this study, the analysis of surveyed results is presented. The survey was taken to study the impact of behavioral factors on investment decisions of the individual investors in Yangon stock Exchange

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1. Demographic Data of Respondents

The descriptive analysis of the demographic data of respondents consisted of gender, age, education, occupation, training from YSX, and income. The results were

presented in Table (1).

Table 1. Socio Demographic Profile of Respondents

Sr.No	Description	Number of Respondents	percentage
1	Gender:		
	Male	199	51
	Female	191	49
	Total	390	100
2	Age:		
	Under 26	67	17.2
	26-35	143	36.7
	36-50	127	32.6
	51 and above	53	13.6
	Total	390	100
3	Education:		
	High school	6	1.5
	University student	9	2.3
	Bachelor	226	57.9
	Post graduate	114	29.2
	Others	35	9
	Total	390	100
4	Occupation		
	Employee	227	58.2
	Self-employed	114	29.2
	Retired	10	2.6
	Others	39	10
	Total	390	100
5	Attending any course on YSX		
	Yes		
	No	201	51.5
	Total	189	48.5
		390	100
6	Monthly income		
	Under MMK300,000	42	10.8
	MMK 300,001 -600,000	85	21.8
	MMK 600,001 -900,000	108	27.7
	Over MMK900,000	155	39.7
	Total	390	100

Source: Survey Data, 2020

As shown in Table (1), 51% of the sample consisted of 199 males (51%) and 191 females (49%). Therefore, the male respondents are more significant gender.

The largest segment of respondents of age is 143 (36.7%) which in the age range of 26-35 years old, followed by 127 respondents (32.6%) in the age range of 36 to 50 years old,67 respondents (17.2%) in the age range of under 26 years old, and 53

respondents (13.6%) in the age range of 51years old and above.

In concerned with education, the largest proportion of education is 226 respondents (57.9%) with bachelor degree holders, followed by 114 respondents (29.2%) with post graduate holders, 35 respondents (9%) with other degree such as PhD, and Diploma, 9 students (2.3%) of university students, and only 6 respondents (1.5%) of high school students.

In concerned with occupation, the largest proportion of occupation is 227 respondents (58.2%) of employees, followed by 114 respondents (29.2%) of self-employed, 39 respondents (9%) with others group and 10 respondents (2.6%) of retired person.

The attendance of respondents to any courses offering from YSX was studied and (51.5%) of total respondents have attendance with courses and (48.5%) have not yet. Therefore, it can be said that the majority of respondents have attendance with courses offering in YSX and have enough knowledge about stock trading and investment.

In concerned with monthly income, the largest proportion of income group is 155 respondents (39.7%) with over MMK900,000, followed by 108 respondents (27.2%) in the range of income between MMK600,001 and MMK900,000, 85 respondents (21.8%) in the range of income between MMK300,001 and MMK600,000 and 42 respondents (10.8%) who get under MMK300,000.

2. Reliability and Validity Test

Reliability is used to indicate 'the extent to which the different items, measures, or assessments are consistent with one another' and 'the extent to which each measure is free from measurement error. The primary purpose of reliability analysis is to analyze the internal consistency and reliability of each factor. The validity is 'the extent to which the research findings accurately reflect the phenomena under study' (Collis and Hussey, 2009). It is different from reliability, where reliability implies that similar results are obtained by researchers on different occasions and the concern is with how replicable the research study is. In this study, validity test is done with factor analysis. A Kaiser-Meyer-Olkin (KMO) test is used to determine the sampling adequacy of data and the KMO statistic varies between 0 and 1. Which a value of '0' indicates that the sum of partial correlations is large relative to the sum of correlations, indicating diffusion in the pattern of correlations.

There are eight variables which are analyzed as behavioral factors of the individual investors such as availability, representativeness, overconfidence, anchoring, ambiguity aversion, framing, mental accounting, and loss aversion.

These items are measured with a five-points Likert scale. The results of reliability

and validity test of those variables included in this study are shown in Table (2).

Table 2. Reliability and Validity of Behavioral Factors

Sr. No.	Variables	No. of Items	Reliability	Validity
			Cronbach's Alpha	KMO
1	Availability	5	.945	.910
2	Representativeness	6	.952	.908
3	Overconfidence	6	.957	.938
4	Anchoring	5	.941	.908
5	Ambiguity Aversion	5	.948	.913
6	Framing	5	.941	.896
7	Mental Accounting	5	.942	.901
8	Loss Aversion	5	.940	.929
9	Investment Decision	6	.952	.912

Source: Survey Data 2020

As mentioned in Table (2), Cronbach's Alpha values for all variables are greater than 0.70. Therefore, the reliability of these variables is strong enough and acceptable.

3. Pearson Correlation Analysis

Pearson Correlation Analysis was conducted in order to ascertain the association between investment decision and availability, representativeness, overconfidence, anchoring, ambiguity aversion, framing, mental accounting, and loss aversion. The results of correlation analysis of those variables included in this study are shown in Table (3).

Table 3. Pearson Correlation Analysis

	Investment Decision
Availability	0.596**
Representativeness	0.711**
Overconfidence	0.692**
Anchoring	0.707**
Ambiguity Aversion	0.726**
Framing	0.731**
Mental Accounting	0.772**

Loss Aversion	0.784**
Investment Decision	1

Source: Survey Data, 2020

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

As shown in Table (3), the variables like availability and overconfidence are moderate positively correlation with the investment decision, and all the remaining variables such as representativeness, anchoring, ambiguity aversion, framing, mental accounting, and loss aversion are highly positive correlation with investment decision. All the relations are significant at 0.01 level.

4. Descriptive Analysis for Behavioral Factors and Investment Decisions

The mean values and standard deviations for each of the eight behavioral factors and an investment decision are presented in Table (4).

Table 4. Mean Score and Standard Deviation Behavioral Factors and Investment Decision

No.	Items	Mean	Std. Deviation
1.	Availability	2.9436	0.9588
2.	Representativeness	3.0299	0.9762
3.	Overconfidence	2.8692	0.9606
4.	Anchoring	3.1138	0.9721
5.	Ambiguity Aversion	2.9118	0.9459
6.	Framing	3.0210	0.9627
7	Mental Accounting	3.0600	0.9866
8	Loss Aversion	3.0274	0.9662
9	Investment Decision	3.1651	0.9386

Source: Survey Data, 2020

As shown in Table (4), anchoring has largest has mean value among the independent variables and overconfidence has the lowest mean value. The largest mean value suggested that individual investors anchored their behavior on their decision concerned with investment. The lowest mean value suggested individual investors have never overconfident with their investment decisions. The remaining independent variables have moderate mean score.

5. Multiple Linear Regression Analysis

In this study, multiple regression analysis was conducted to examine the impact of the eight predictor variables (i.e. availability, representativeness, overconfidence, anchoring, ambiguity aversion, framing, mental accounting, and loss aversion) on the investor's investment decision.

The multiple regression model is:

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \ldots\ldots\ldots + \beta iXi + \varepsilon$

Then, the model became;

$ID = \beta 0 + \beta 1AVA + \beta 2REP + \beta 3OVC + \beta 4AN + \beta 5AA + \beta 6FE + \beta 7MA + \beta 8LA + \varepsilon$

Where:

β0 = y-intercept at time zero
β1 – β8 = the coefficient for the independent variables 1-8
ε = the model's error term
ID = Investment Decision
AVA = Availability
REP = Representativeness
OVC = Overconfidence
AN = Anchoring
AA = Ambiguity Aversion
FR = Framing
MA = Mental Accounting
LA = Loss Aversion

The model summary of behavioral factors and investment decisions was shown in Table (5).

Table 5. Model Summary of Behavioral Factors and Investment Decisions

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.865[a]	.749	.744	.47536

Source: Survey Data, 2020

a. Predictors: (Constant), Loss Aversion, Availability, Framing, Anchoring, Ambiguity Aversion, Representativeness, Mental Accounting, Overconfidence
b. Dependent Variable: Investment Decision

As shown in Table (5), R (the correlation between the observed value and the predicted value of dependent variable) is 0.865. Thus the investment decisions reported by respondents and the levels predicted for them by independent variables are strongly correlated. The value of R square is 0.749. This meant the model has accounted for only 75% of the variance in the dependent variable. It is found that the relationship between behavioral factors and investment decisions is positively significant at 99% confidence interval.

The ANOVA Analysis of behavioral factors and investment decisions was shown in Table (6).

Table 6. ANOVA Analysis of Behavioral Factors and Investment Decisions

Model	Sum of Squares	df	Mean Square	F	Sig
1. Regression	256.631	8	32.079	141.9	.000[b]
Residual	86.095	381	.226		
Total	342.726	389			

Source: Survey Data, 2020

b. Predictors: (Constant), Loss Aversion, Availability, Framing, Anchoring, Ambiguity Aversion, Representativeness, Mental Accounting, Overconfidence

As shown in Table (6), the ANOVA is 0.000 and F-value is calculated as 141.9. Since P-value of less than 0.05 indicating a model that was of good fit so that the behavioral factors and investment decisions is positively significant at 99% confidence interval.

The impact of behavioral factors on investment decisions is shown in Table (7).

Table 7. The Impact of Behavioral Factors on Investment Decisions

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig	VIF
	B	Std. Error	Beta			
(Constant)	.289	.092		3.163	.002	
Availability	-.157	.044	-.160**	-3.574	000	3.055
Representativeness	.196	.045	.204**	4.402	.000	3.250
Overconfidence	-.021	.048	-.021	-.427	.670	3.667
Anchoring	.148	.042	.153**	3.537	.000	2.834
Ambiguity Aversion	.179	.045	.180**	4.020	.000	3.051
Framing	.180	.043	.184**	4.223	.000	2.893
Mental Accounting	.182	.046	.191**	3.929	.000	3.589
Loss Aversion	.239	.048	.246**	4.985	.000	3.689

Source: Survey Data, 2020

According to the results of regression analysis, the eight variables, the seven

variables (AVA, REP, AN, AA, FR, MA, and LA) are significant at the 0.05 level that means these seven variables could affect the investment decisions of the individual investors. However, OC is not significant so that this could not affect the investment decisions of the individual investors.

According to the table (7), the regression equation (Y= β0 + β1X1 + β2X2 + β3X3 + β4 X4 + β5X5 + ε) becomes:

ID = 0.289 – 0.157AVA + 0.196 REP – 0.021OVC + 0.148 AN + 0.179AA + 0.180FE + 0.182MA + 0.239 LA

From the above equation, if all the behavioral factors are taking constant at zero, the investment decision will be 0.289. The analysis results that if all other independent variables are taking zero; a unit increase in availability will negatively affect 0.157 investment decisions; a unit increase in representativeness will affect 0.196 investment decisions; a unit increase in anchoring will affect 0.148 investment decision; a unit increase in ambiguity aversion will affect 0.179 investment decisions. a unit increase in framing will affect 0.180 investment decisions; a unit increase in mental accounting will affect 0.182 investment decision, and a unit increase in loss aversion will affect 0.239 investment decision.

IX. Conclusion

This paper summarizes all the findings of the study, which are about the behavioral factors having the impacts on the individual investors' decisions in Yangon Stock Exchange.

1. Findings and Discussions

The objective of this study was to study the impact of behavior finance on investment decisions of investors in Yangon Stock Exchange. In the study of socio-economic profile of the respondents, the male respondents participate more than female. Most of the respondents fall the ages between 26 and 35 years old. Majority of respondents are the bachelor degree holder. Most investors in the current study are who have monthly income above MMK 900,000. More than half of the respondents have attended the training course offered by Yangon stock Exchange so that they can be said that rational investors.

The result of the reliability test has shown all the variables have the value of Cronbach's Alpha greater than the minimum value 0.7, thus, all the variables have internal consistency. The relationship between the independent variables (AVA, REP,

OC, AN, AA, FR ALA, MA) and dependent variable (ID) was tested by using Pearson Correlation Analysis. According to the Pearson correlation coefficient, there are positive relationship between independent variables and dependent variables and are significant at 99 percent confident interval. Among the five independent variables, loss aversion has the strongest relationship and availability has the weakest relationship with investment decision.

According to the results of regression analysis, among eight variables, (AVA, REP, AN, AA, FR, MA, and LA), availability has a negative impact on investment decisions of investors in YSX. The other independent variables such as representativeness, anchoring, ambiguity aversion, framing, mental Accounting, and loss aversion have a significant impact on investment decisions of investors in YSX. However, the overconfidence has no impact on investment decisions of investors.

Since investment is a way of generating new income, investee companies, brokerage houses, and financial advisers are also important to understand the behavior finance. And investors must take into consider behavioral factors while the make decision concerned with their investment.

2. Recommendation and suggestion

Not surprisingly, the more the stock market is efficient and developed, the more investment opportunities will be available so that the businesses and corporations can get a huge amount of money to catch up the investment opportunities and to expand their businesses. Therefore, the market participants should actively participate in the market. Nowadays, only the people who are learning about finance and related subjects but also some other individuals are getting interested about the stock market. To be efficient and effective market, the stock exchange should hold more events of stock exchange Expos and persuade more investors to be actively involved. There should be more knowledgeable people about the financial market, investment, and behavioral finance.

On the other hand, investors should investigate about how the stock market is operating and how the investors are trading before making investment to minimize the behavioral factors. The investors who have lack of financial and investment knowledge will not make proper investment decision. Therefore, securities companies should also give more seminars and workshops to share the knowledge of financial market and investment to the public because the behavioral factors cannot be ignored in emerging market like Yangon Stock Exchange. Finally, individual investors of YSX should take some educational courses in concerned with the behavioral biases that affect investment decision making in order to be able to manage their portfolios effectively and efficiently. The professionals of investment management should also be

exposed about the behavioral finance through workshops and seminars both online and offline availabilities. The information providers in the Yangon Stock Exchange should think of a proper way of releasing information about the market to the public since this have a way of affecting the decision taken by the investor about the market and investment as well.

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Factors Influencing Approval of Organic Tea Farming among Tea Farmers in Southern Shan State, Myanmar

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ABSTRACT : While the agricultural farming is being promoted all over the world to face the challenges of modern agricultural, the one importance is the organic farming takes lead as a solution by highlighting. Therefore, to encourage organic farming, this paper aims at determining factors influencing approved of organic tea farming among tea farmers in Southern Shan State. In this study, two stage cluster sampling technique is used in selecting respondents which is 735 tea-farming households including the township of Pindaya in 317 households and Ywar Ngan in 418 households as first cluster. Multiple regression analysis of conventional and organic tea farmers is estimated. Net income of both farmers type is significantly depending on possess of tea farm acres, green leaf tea price, total expenses and total output of tea. Binary logistic regression analysis is estimated to ascertain the factors. The results showed that socio-economic factors such as age and educational level of the household heads, possess of tea farm acres, household income and green leaf tea price had positively and significantly 1% influence on approval of organic tea farming certificate among tea farmers and farming. These observations suggest that policies should be formulated to take advantage of the factors that positively influence farmers' organic farming approval decisions which could also help in socio-economic factors to convert to organic farming.

Key words : Organic Farm, Socio-economic Factors, Multiple Regression, Binary Logistic Regression

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I. Introduction

Today, agricultural farming was faced by many challenges in the world globally as well as the production of quality, healthy, and safe foods with high nutritional value. Organic foods which grow must be grown without the use of synthetic herbicides, pesticides, and fertilizers, or bioengineered genes (GMOs) play vital role in all kinds of agricultural farming by highlighting.[1)]

Nowadays, most of the worldwide nations well become known Myanmar Tea that of ideal climatic conditions for growing tea ensure the fresh, natural and clean taste of Myanmar organic green tea. A traditional cultural of processing, drinking, and even eating tea provides Myanmar tea with its unique quality. Among the tea farms area in Myanmar, the 65% of tea farms are organic farms. Myanmar is one of the top counties that cultivated the best tea in the world and produced the highest rate. Although the tea production methods in Myanmar are still in a traditional way, now Good Agricultural Practices (GAP) is increasing. Already, in the first year of introducing organic materials and other GAP technologies, yield has increased by more than 30%.

Until 2013, very little portion of green tea was exported from Myanmar to other few countries, as it was unknown on the international market. In 2016 and 2017, the main buyers in the EU were France and Germany, followed by the Netherlands.

According to data from the Food and Agriculture Organization, Myanmar is the eighth largest producer of tea in the world with an estimated 104,743 metric tons produced in 2017, with production steadily increasing year on year. Currently, around the eighty Myanmar companies are exporting green tea to foreign. The largest quantities of green tea from Myanmar are exported to Japan, Malaysia, and Singapore while a handful is exporting fermented tea to buyers in the UK and Ireland. The buyers from the European Union (EU) had also started to show interest in purchasing green tea from Myanmar. In 2018, Myanmar organic green tea was introduced to European buyers on the world´s leading trade fair for organic food (BIOFACH) resulting in rapidly growing interest in Myanmar organic green tea.

Myanmar has exported organic raw tea leaves to the United States from 17 to 20 tons every year and targeted to Germany by producing in good quality to get stronger international markets in finding more foreign markets. Most of the tea farm owners and business persons of tea industries are still struggling with internationally recognized organic certificates because of protecting consumers and reputation of organic product.

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1) https://www.helpguide.org/articles/healthy-eating/organic-foods.htm

Not only domestic and export demand but also domestic and export income depends on organic certified, organic farm product that is a trust between farmers and consumers. There are many tea clusters are doing transformation organic tea as international market potential for organic products. By possessing the approved organic certificate by tea farmers, it can provide economic and social benefits in tea community. Therefore, the main tea production areas in Myanmar, twenty-five per cent of the country's total production occurs in Southern Shan State, socio-economic life of tea farmers, influencing factors for organic tea farm and organic farming certified condition of Pindaya, and Ywar Ngan townships are studied in this paper.

1. Objective of the Study

The objective of the study is to analyze the factors influencing adoption of organic tea farming among tea farmers in Southern Shan State.

2. Method of Study

Two stage cluster sampling method, descriptive method, multiple regression analysis and binary logistic regression analysis were used in this study. 735 tea-farming households including the township of Pindaya in 317 households and Ywar Ngan in 418 households were collected by cluster sampling method as first cluster, the most cultivated in tea farming of four townships at Southern Shan State.

And then, from these two townships, the selected the communing with the largest number of tea farm are growing villages as second cluster. The total villages in Pindaya Township are 137 villages. Among them, 55 households of Myay Ni Taung village, 60 households of Sae Kya Inn village, 102 households of Kan Hla Kone village, and 100 households of Da Yal Inn village, are selected to analyze the socio-economic status of tea farmers by using cluster sampling method. The total villages in Ywar Ngan Township are 125 villages. Among them, 159 households of Myazayti Village (Eastern Ywar Ngan Township), 159 households of Yaechanepyin Village (Northern Ywar Ngan Township) and 100 households of Alaechaung Village (Southern Ywar Ngan Township) are selected to analyses factors affecting of tea production by using cluster sampling method. Originally, all of these households followed conventional tea production. Among them, 144 households converted from conventional to organic tea production and 591 households remained conventional. Data were collected mainly from primary sources preparing the questionnaires for conducting the Socio-economics which was organized by leading Department of Statistics, Co-operative University, Sagaing and, the students of Applied Statistics

major, department of Statistics and Myanmar Tea Association (MTA) for Internship Programme during in May 2019.

3. Limitation of the Study

This study was limited to all the 735 household of tea farmers to all seven village clusters in Southern Shan State and is not cover the whole country. Time and the total cost of collecting data were managed by use of interned students.

II. Literature Review

Ubokudom E. Okon and Idiong C. Idiong (2016) studied "Factors Influencing Adoption of Organic Vegetable Farming among Farm Households in South-South Region of Nigeria." The objective of the study is to examine the factors influencing vegetable farmers' organic farming decisions in Nigeria by using multistage random sampling technique and logistic regression analysis. The result of this study found that socio-economic factors such as farming experience, educational level and gender of the household heads, membership of organization, household income, land tenure status and farmers' perception on organic farming had positive and age of the household heads and farm size had negative and significant influence on it decision to adopt organic farming.

Tanui, J.K., et al., (2012) conducted "A Study on Socio-economic Constraints to Adoption of Yield Improving Tea Farming Technologies". This study is aimed at estimating how socio-economic factors influence smallholder farmers' decision to adopt the variable tea farming technologies. Descriptive statistics and logistic regression were employed with socio-economic factors as independent variables being regressed against the dependent variable of recommended yield improving tea farming technology in logistic regression model. The logistic model analysis of survey data showed that head gender, benefits awareness, costs awareness and extension services significantly affected adoption.

Scalco, A. R., et al., (2017) compared and analysed "Factors that May Lead on the Non-renewal of Certified Organic Product According to Organic Producers in Brazil." This paper aimed to identify the factors that influence the possibility of non-renewal of organic production certificate. A total of 200 producers from several Brazilian states participated in this study, and data analysis was performed using descriptive statistics and exploratory factor analysis. The results are the determining factors to the non-renewal of the certificate involve variables related to transactions among

operators, organization of the supply chain and to the regulations. Furthermore, to overcome the challenges imposed to rural producers, one of the proposals is for greater effective actions from representative industry entities of the sector in aspects that are related to the certification process.

Lighton, D., et al., (2014) conducted "A Study on Socio-economic Determinants of Smallholder Out-grower Tea (camellia Sinensis) Farming Profitability in Chipinge District, Zimbawe". The data were analyzed using descriptive statistics, gross margin analysis and multiple regression models. The multiple regression models reveal that access to extension services, the extent of farmer specialization as measured by the proportion of area under tea production to total farm size, the extent of farm commercialization, farmer's level of education, amount of labour used, tea yield hectare and total area under tea production are the major determinations of profitability for smallholder out-grower tea farming in the study area. The result indicates that in the lack of a written contract, scarcity of fertilizers, lack of credit facilities, low market prices for green tea, limited availability of hired labour, limited access to extension services and inadequate transport services constraints the major tea production in the area.

III. Socio-economics Position of Tea Farmers in Pindaya and Ywar Ngan Township

Twenty-five per cent of the Myanmar country's total production occurs in Southern Shan State. The main tea-producing areas of it include Pindaya, Yatsauk, Ywan- Ngan and Pinlaung. Most of the farmers owning between 1 and 5 acres. Smallholder farmers commonly sun-dry leaves themselves during summer to make green tea and sell fresh leaves to small-scale factories making fermented tea during the rainy season.

Pindaya township, part of the Danu Self-Administered Zone is the most famous tea-producing region in Southern Shan State. It has around 8,500 acres of tea plantations across 45 tea-growing villages, with each of its 4,000 farmers owning around 2 acres on average. There are three large tea producers in Pindaya township: Maw Shan, Taung Tan Ni and Sikya Inn. There are around 250 farmers who have organic certification. Taung Tan Ni and Sikya Inn both also produce organic green tea which is either certified or under inspection for future certification.

Ywangan township is famous in Myanmar as not only a coffee-growing but also tea region. Nonetheless, it has around 10,000 acres of tea plantations across 64 tea-growing villages. It benefits from an altitude of up to 1,800 meters above sea

level, and farmers tend to intercrop tea with coffee and avocado.

IV. Empirical Analysis of Factors Influencing Approved of Organic Tea Farming in Tea Farmers

1. Descriptive Analysis

In this section, the following data represent the socio-economics characteristics of tea farmers in Pindaya and Ywar Ngan Township.

Table 1 Descriptive Analysis of Socio-Economics Characteristics of Tea Farmers

Characteristics	Frequency	%
Gender		
Male	642	87.3
Female	93	12.7
Age		
Below 24	11	1.5
25-34	100	13.6
35-44	160	21.8
45-54	193	26.3
55-64	132	18
65-74	99	13.5
75 and above	40	5.4
Education		
Uneducated	17	2.3
Monastics education	156	21.2
Primary	405	55.1
Middle	128	17.2
High School	18	2.1
University Level	1	0.1
Graduate	7	0.5
Postgraduate	3	0.4
Number of Student		
0	269	36.6
1	200	27.2
2	172	23.4
3	71	9.7
4	18	2.4
5	5	0.7
Number of Family		
1-3	11	1.5
4-6	287	39.3
7-9	239	32.3
10-12	198	26.9

Source: Survey Data (May, 2019)

According to the above table, the number of male household head is 642, its percentage is 87.3% and the number female household head is 93, its percentage is 12.7%.

Table 1 shows the population by selected age-groups of the tea farmer of four villages Pindaya township and three villages in Ywar Ngan township. According to

this table, the proportion of the total population aged between 45 to 54 years was 193 and 26.3%, and that of above 75 years was 40 and 5.4%. Out of the total population, the proportion of working age i.e. between 15 to 64 years was 596 and 81.1%.

The total number of household head 735, among them, the number of uneducated persons was 17 and 2.3%. Monasterial educated person were 156, and 21.2%. According to this table, total population completed primary school were 405 and 55.1%. Middle school level populations were 128 and 17.2%. Graduated level populations were 7, 0.5%. And then postgraduate level populations were 3 and 0.4%. According to the household of paddy farmers in Pindaya township and Ywar Ngan township, the largest amount of household head is no student, and its percentage is 36.6%. There is one student in 200 households, and its percentage is 27.2%. The size of family members 4-6 is 287 household head and its percentage is 39.3%. The second largest size of family members 7-9 is 238 and its percentage is 32.3%.

2. Descriptive Analysis for Agricultural Conditions and Land Tenure of Tea Farmers in Pindaya Township and Ywar Ngan Township

In this section, these data represent the Agricultural Conditions and Land Tenure of tea farmers in Pindaya and Ywar Ngan Township.

Table 2 Descriptive Analysis for Agricultural Conditions and Land Tenure of Tea Farmers in Pindaya Township

Land Owner	Frequency	%
Own	316	99.7
Rent	1	0.3
Lender	0	0
Acres	**Frequency**	**%**
1-5	280	88.3
6-10	28	8.9
11-15	6	1.9
16-20	3	0.9
Total	317	100.0

Source: Survey Data (May, 2019)

According above the table, the tea farmers of agricultural conditions are classified as land owner, rent, and renter. The tea farmers 316 are land owner, it is 99.7%. The remaining rent and renter is one household and none respectively, the percentage of the rent is 0.3%. The most of the households 316 are land owner.

In this above Table 2 also shows land tenure of the tea farmers. The households possess land tenure from 1 to 20 acres. According to this table, 280 households have 1-5 acres of land tenure; its percentage is 88.3%. Twenty-eight households have 6-10

acres of land tenure; its percentage is 8.9%. Six households have 11-15 acres of land tenure; its percentage is 1.9%. Only three households have 16-20 acres of land tenure, it is 0.9%. According to this data, most of the households possess 1-5 acres of land tenure and the households have 16-20 acres of land tenure are the lowest.

On the other hand, Table 3 shows the tea farmers by agricultural conditions and land tenure in Ywar Ngan Township.

According the table, the tea farmers of agricultural conditions are classified as land owner, rent, and renter. The tea farmers 416 are land owner, it is 98.6%. The remaining rent and renter is one household respectively, its percentage both are 0.2%. The most of the households 416 are land owner. The rent and renter are least of the households.

Table 3 Agricultural Conditions and Land Tenure of Tea Farmers in Ywar Ngan Township

Land Owner	Frequency	%
Own	416	98.6
Rent	1	0.2
Lender	1	0.2
Acres	Frequency	%
1-5	330	79.0
6-10	78	18.7
11-15	7	1.7
16-20	3	0.7
Total	418	100.0

Source: Survey Data (May, 2019)

Above table also shows that the households possess land tenure from 1 to 20 acres. According to this table, 330 households have 1-5 acres of land tenure, its percentage is 79.0%. Seventy-eight households have 6-10 acres of land tenure, its percentage is 18.7%. Seventh households have 11-15 acres of land tenure, its percentage is 1.7%. Only three households have 16-20 acres of land tenure, it is 0.7%. So, most of the households have 1-5 acres of land tenure in Pindaya township.

3. Condition of Receiving Organic Certificates of Tea Farmers in Pindaya Township and Ywar Ngan Township

In Table 4, all households in Da Yal Inn village do not have organic certificate. Nigh teen households in Kan Hla Kone village, thirty households in Myay Ni Taung and twenty-one households in See Kya Inn village have organic certificate and its percentages are 18.6%, 54.5 % and 35% respectively. There are 247 conventional tea farming and 70 organic tea farming in Pindaya township.

Table 4 Receiving Organic Certificates of Tea Farmers in Pindaya Township

Village		No	Yes	Total
Da Yal Inn	Count	100	0	100
	% within Village	100.0%	0.0%	100.0%
Kan Hla Kone	Count	83	19	102
	% within Village	81.4%	18.6%	100.0%
Myay Ni Taung	Count	25	30	55
	% within Village	45.5%	54.5%	100.0%
See Kya Inn	Count	39	21	60
	% within Village	65.0%	35.0%	100.0%
Total	Count	247	70	317
	% within Village	77.9%	22.1%	100.0%

Source: Survey Data (May, 2019)

According to the following Table 5, 31 households in Alaechaung village, 15 households in Myazati and 28 households in Yaegyanpy have organic certificate and its percentages are 31.0%, 9.4 % and 28% respectively. There are 344 conventional tea farming and 74 organic tea farming in Ywar Ngan township.

Table 5 Receiving Organic Certificates of Tea Farmers in Ywar Ngan Township

Village		No	Yes	Total
Alaechaung	Count	69	31	100
	% within Village	69.0%	31.0%	100.0%
Mya zati	Count	144	15	159
	% within Village	90.6%	9.4%	100.0%
Yae gyanpy	Count	131	28	159
	% within Village	82.4%	17.6%	100.0%
Total	Count	344	74	418
	% within Village	82.3%	17.7%	100.0%

Source: Survey Data (May, 2019)

Table 6 shows the tea farmers by using hat, fertilizer, pesticides, loan in agricultural conditions Pindaya and Ywar Ngan Township.

Table 6 Tea Farmers Using Materials in Agricultural Conditions in Pindaya and Ywar Ngan Township

	Using Hat		Using Fertilizer		Using Pesticides		Loan	
	Freq	%	Freq	%	Freq	%	Freq	%
Yes	479	65.2	141	19.2	12	1.6	352	47.9
No	256	34.8	594	80.0	723	98.4	383	52.1

Source: Survey Data (May, 2019)

According the above table, the tea pickers cultivated with using hat, fertilizer, pesticides and loan for agricultural farming answered in 479, 141, 12 and 352 persons respectively, and then its percentage is 65.2%, 19.2%, 1.6% and 47.9% respectively. Although most of the farmers have not organic farming, there are in lack of using fertilizer and pesticides. Figure 1 states the net income of (one month)

in conventional and organic farmers on farming.

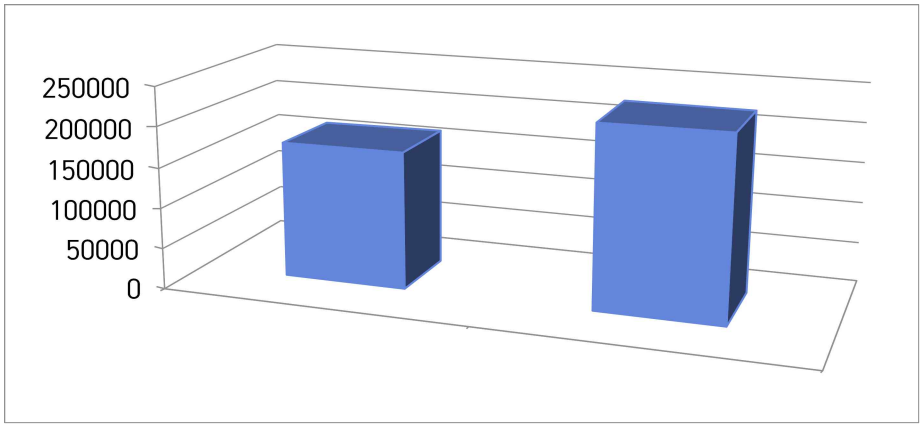

Figure 1 Net Income of (one month) in Conventional and Organic Farmers on Farming

According to the Figure 1, it shows that the net income of conventional and organic farmers on farming are 169772(MMK) and 225742(MMK) for one month. And it can be seen that the earning of organic farmers are more than conventional farmers.

4. Multiple Regression Analysis of Conventional and Organic Tea Farmers in Pindaya Township and Ywar Ngan Township

The multiple regression analysis was applied to investigate the factors of monthly net income of 144 households converted from conventional to organic tea production and 591 households remained conventional in Pindaya Township and Ywar Ngan Township. To develop the multiple regression models, the monthly net income of sample household was used as dependent variable and education level, family member, tea acres, total output, green leaf tea price, labour and total expenses in each household were used as independent variables. Multiple Regression equation is

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7$$

Results of Multiple Regression Model are presented in Table 7 for conventional and in Table 8 for organic tea farm model.

Table 7 Results of Multiple Regression Model For Conventional Tea Farm

Model	Unstandardized Coefficient		T	Sig	VIF
	B	Std Error			
(Constant)	200816.9	54893.8	3.658	0.000***	1.04
HH Education	-19241.9	8460.5	-2.274	0.0223	1.33
Family Member	8114.54	5002.3	1.622	0.105	1.32
Tea Acre	20459.9	4506.6	4.540	0.000***	1.23
Total Output	33.066	15.6	2.117	0.035**	1.05
Green Leaf Tea Price	-96.929	41.5	-2.338	0.020**	1.07
Labour	-30703.63	9292.1	-3.304	0.001***	1.28
Total Expenses	-0.126	0.06	2.019	0.044**	0.78
Adjusted R^2	0.118				
F-Value	12.300***				

Source: Survey Data (May, 2019)
Dependent variable: Monthly Net Income
*** denotes significant at 1% level, ** denotes significant at 5% level, * denotes significant at 10% level

Multiple regression equation for conventional tea farmer is

$$\hat{Y} = 200816.983 + 20459.981X_3 + 33.066X_4 - 96.929X_5 - 30703.629X_6 + 0.126X_7$$

The equation shows that, monthly net income is expected to increase by 20459.983 MMK, if possess of tea farm acre increases by one acre. If total output increased by one viss, monthly net income is increased by 33.066 MMK. If green leaf tea price is increased by one MMK, monthly net income is decreased by 96.929 MMK. If the labour increased by one, monthly net income is decreased by 30703 MMK. If monthly total expense is increased by one MMK, monthly net income is decreased by 0.126 MMK. Results of multiple regression model for organic tea farm are as followed in Table 8.

Table 8. Results of Multiple Regression Model for Organic Tea Farm

Model	Unstandardized Coefficient		T	Sig	VIF
	B	Std Error			
(Constant)	488519.3	139399.8	3.504	0.001***	1.04
Household education	-12952.4	15987.9	-.810	0.419	1.03
Family Member	5862.5	10615.1	.552	0.582	1.17
Tea Acres	50805.1	10093.1	5.034	0.000***	1.25
Total Output	77.7	39.1	1.986	0.049**	1.63
Green Leaf Tea Price	-342.0	94.12	-3.632	0.000***	1.79

Labour	-37366.0	50228.8	-.744	0.008	1.03
Total Expenses	-0.392	.204	.552	0.582	1.17
Adjusted R^2	0.326				
F-Value	10.875^{***}				

Source: Survey Data (May, 2019)
Dependent variable: Monthly Net Income
*** denotes significant at 1% level, ** denotes significant at 5% level, * denotes significant at 10% level

Multiple regression equation for organic tea farmer is

$$\hat{Y} = 488519.333 + 50805.139X_3 + 77.729X_4 - 342.015X_5$$

The equation shows that, monthly net income is expected to increase by 20459.983 MMK, if possess of tea farm acre increases by one acre. If total output increased by one viss, monthly net income is increased by 77.729 MMK. If green leaf tea price is increased by one MMK, monthly net income is decreased by 342.015 MMK. In normal condition, if green leaf tea price is more increased, monthly income is more increased. But in this situation, green leaf tea price is more increased; monthly income is more decreased because of being weather, shortage the labour and did not know well how to store the tea leaf before getting the market price.

5. Binary Logistic Regression Model of Influencing Approval of Organic Tea Farming among Tea Farmers

As approval of organic tea farming is a dichotomous or binary dependent variable, with the option of either 'approval' or 'non-approval'. Binary logistic regression was considered to be the appropriate analytical tool to estimate the factors influencing adoption of organic agriculture by tea farmers. In order to facilitate analysis of the data, a value of 1.00 was assigned to the approved organic certificate for tea farm households and 0.00 to the non-approved organic certificate for tea farming households. The dependent variable is defined as:

Y= 1, If approved organic certificate tea for farm households

Y= 0, If non-approved organic certificate for tea farming households

Age, gender, education level, total family numbers, land owner, tea farm size, households income form tea, technology supporting, green leaf tea price and number of labours are considered as independent variables. In this model, these variables are categorized as follows;

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \epsilon$$

Where

Y_i = Approved of Organic Certificate
X_1 = Age of the Households Head (Years)
X_2 = Gender (Dummy, takes the value 1 if male and 0 otherwise)
X_3 = Education Level of Households Head (Years)
X_4 = Family Members
X_5 = Land Possess (Dummy, takes the value 1 if owned, 2 if rent and 3 if rental)
X_6 = Tea Farm Size (acres)
X_7 = Household Income (kyats)
X_8 = Green Leaf Tea Price
X_9 = Number of Labour
X_{10} = Technology Support

The parameter estimates for socio-economic and demographic determinants of approved organic certificate in Binary Logistic Regression model fitting criteria are presented in Table 9.

Table 9 Model Fitting Information for Social and Economic Determinants of Certified Organic Farm

Model fitting criteria	χ^2value	Df	*p*-value
Omnibus Tests of Model Coefficient	85.547	10	0.000
Hosmer and Lemeshow (H-L) Tests	17.027	8	0.030
-2 Log Likelihood	641.650		
Cox & Snell R- Square	0.110		
Nagelkerke R- Square	0.175		
Overall Correct Prediction	82.6 %		

Source: Survey Data (May, 2019)

According to the Omnibus tests of model coefficients gives a Chi-Square of 85.547 on 10 degree of freedom, significantly in beyond 0.000. There is no evidence of lack of fit based on the H-L statistic (Chi-Square = 17.027, df = 8, p = 0.030). Since -2 log likelihood statistic is 641.650, it can be said that the existence of a relationship between the independent variables and the dependent variable is supported. The model fitting information includes two different ways of estimating R-square (Cox & Snell R2 and Nagelkerke R2). Overall, 82.6 % for socio-economic and demographic determinants of approved organic certificate are predicated correctly. Summary results for the binary logistic regression model are as followed in Table 10.

Table 10 Summary Results for Binary Logistic Regression Model of Influencing Approval of Organic Tea Farming among Tea Farmers

Variables	B	S.E	Wald	Df	Sig	Exp (B)
Constant	10.057	20646.5	.000	1	0.1	3.307
Age***	0.030	.008	13.37	1	.000	1.030
Gender	0.240	.329	.531	1	.466	1.271
Education Level***	0.457	.105	19.02	1	.000	1.580
Family Members	-0.023	.061	.137	1	.711	0.978
Land Possess	-18.1	20646.5	.000	1	.999	0.000
Tea Farm Size***	0.072	.051	2.028	1	.004	1.075
Household Income***	0.000	.000	6.728	1	.009	1.000
Green Leaf Tea Price***	0.003	.000	31.35	1	.000	1.003
Number of Labour	-0.189	.145	1.691	1	.194	0.828
Technology Support	0.180	.219	.669	1	.413	1.197

Source: Survey Data (May, 2019)

In above table, the coefficients of age, education level, tea farm size, household income and green leaf tea price are statistically significant at 1% level and all of these are positively sign, directly effect. If the household head age is increasing in tea farmers, approved of organic certificate is more increasing in 0.030 unit. If the household head education level is increasing in tea farmers, approved of organic certificate is more increasing in 0.457 unit. If the tea farm size is increasing in tea farmers, approved of organic certificate is more increasing in 0.072 unit. If there is more increasing in the green leaf tea price, approved of organic certificate is more increasing in 0.003 unit. According to these results, the approved of organic certificate still exist many problems such as the process of importing tea materials from the households, the shortage of labour, processing process has many inadequacies, the technology support meet many difficulties.

V. Conclusion

1. Findings

The purpose of this study was to assess key factors that influenced tea farmers' organic farming approved in Southern Shan State. The findings of in this study showed that majority 87.3% of them is male and most of the household head's education is primary level. Most of family member is between 4 and 6. Out of the total population, the proportion of working age between 15 to 64 years was 596 and 81.1%. Therefore, the number of persons in working age group was larger than that

of dependents in these townships. The volume of labour force was also high in these two townships. Both of in these townships, over 95% of tea farmers owned tea farm and most of the tea farmer possess in 1 to 5 acres. According to the net income of conventional and organic farmers on farming, that of amounts are 169772(MMK) and 225742(MMK) for one month. It can be clearly seen that the earning of organic farmers are more than conventional.

According to multiple regression model, net income of both farmers type is significantly depending on possess of tea farm acres, wet tea price, total expenses and total output of tea for conventional and organic tea farm. When the time of raising green leaf tea price, it cannot be picking and selling in time because of labour shortage and weather condition. In this situation, although the price of green leaf tea is high, the income of tea farmers is no more change. There are many problems such as the shortage of labor, processing process has many inadequacies, the application of new standards meet many difficulties still exist.

According to Binary Logistic Regression Model, the coefficients of age, education level, tea farm size, household income and green leaf tea price are statistically significant at 1% level and all of these are positively sign, directly effect. As experience is depending on age, the more the age is increased, the more experience on farming is increased. As well as education level, tea farm size, household income and green leaf tea price is higher, approved of organic certificate is more increasing for tea farmers in Southern Shan State.

All of these five factors are influencing upon the getting approved of organic certificate. The shortage of labour to pluck tea leaves during harvest season and promoting the group certification among farmers in villages with strong organic potential are also importance for farming. Therefore, there will be needed to support not only these five factors but also labour, finance and technology support for out coming the organic farming instead of conventional farming to face the challenges of modern agricultural.

2. Suggestions

The plantation owners and tea farmers should intend that the area will be totally devoted to organic farming as all of farmers should strive to satisfy rising demand for chemical-free green tea. Modern techniques, financial assistance and investment will be assisted and supported by Government organization, local business groups for tea plantation as like Myanmar Tea Association is one stop links for all tea Growers, Producers, Processors, Manufacturers, Distributors and farmers in Myanmar and Myanmar Tea Producer and Exporter' Association and other international organizations.

Ggovernment and stakeholders should provide better extension services, which incorporate relevant training to farmers or labours, greater access to information on organic tea production and increase health awareness or consciousness of supply side and demand side for organic products. The government should introduce mechanisms to coordinate production activities and the delivery of tea products by farmers to processing the marketing facilities for value chain and support the electricity and transportation for getting more develop education, living standard and job opportunities.

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Determinants of Social Entrepreneurial Intention of BBA Students in YUeco

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ABSTRACT : The purpose of this study is to examine the social entrepreneurial intentions of Bachelor of Business Administration students in Yangon University of Economics. The specific objectives are to examine the effect of social factors on social entrepreneurial intention and to investigate the effect of individual factors on social entrepreneurial intention of BBA students in YUeco. This study is conducted on the survey with 146 BBA final year students of YUeco. The study find that family support is the key driver for enhance the social entrepreneurial intention of BBA students. At the same time, in individual factors, need for achievement, risk propensity and locus of control are the major driving forces for student's social entrepreneurial intention. The make of recommendations based on these key findings. At university level, students intending to start a social venture could be encouraged and assisted through funding, co-operation from the institute and government support should it be viable and sustainable. Also educators should take care the that the information on entrepreneurial infrastructure they provide to their students is updated. They study arrived at the conclusions that nurturing social entrepreneurial intention of students, is proactive action of enhancing socially responsible practices in young generation that can lead to gradually increase the nation's economic well-being.

Key Words: BBA, YUeco, student, ***social entrepreneurial intention,***

I. Introduction

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Social entrepreneurship is newly concept in social science. According to Sankar and Sutha (2016), in order to generate economic growth and moving towards the entrepreneurial society it is imperative, in the opinion of economic theorists, to have a development of entrepreneurship capital, which reflects a number of different legal, institutional and social factors and forces, and involves also a social acceptance of entrepreneurial behavior, individuals who are willing to deal with the risk of creating new firms and favorable business environment.

Today social entrepreneurship is widely recognized both by academics and practitioners as a fundamental factor of economic development throughout the world. Entrepreneurs are the "engines of economic growth". Entrepreneurship with a social purpose has steadily been increasing and the combination of social and economic goals is a major driving force in transforming and developing countries (Austin et al., 2006; Littlewood & Holt, 2015). They have brought enormous positive contributions to a country's economic growth and social development. Social entrepreneurial intention merits scholarly research. And it has been empirically proved to be the best and unbiased predictor of social entrepreneurial behavior (Sankar & Sutha 2016).

In today global economy, entrepreneurs develop their business model based on the social problem in order to long term survival in marketplace. Social entrepreneurship means entrepreneurs whose provide innovative solutions to solve some of the most severe social challenges faced by the world. Understanding the determinants of social entrepreneurial intentions is critical for policy makers and educators who want to motivate more people to engage in social entrepreneurship. Students with Social Entrepreneurial Intent (SEI) are also appropriate applicants for jobs with organizations that wish to become more socially responsible (Ayob et al., 2013).

II. Rationale of the Study

In a very intensify competition market, the business more emphasize on the welfare of stakeholders rather than the interest of owners. The unemployment among graduates is a major problem for nation's economic development. Among the contributions are such as innovation and job creation. As entrepreneurship is synonymous with self-employed, it is believed to be an effective strategy in handling the issue of employability, particularly among the youths. Young generations are more interesting in prosocial activities that can enhance their entrepreneurial mindset in order to solve the social problem.

One of the objectives of BBA programme in YUEco is to nurture the entrepreneurs

for Myanmar business society. The social entrepreneurial intention of BBA students can shape the social responsible behavior for Myanmar corporations because they are the potential applicants for corporations before starting the social enterprise. The business making the solutions for social problem by generating the profits is a good practices for nation's economic development.

III. Objectives of the Study

The objectives of this study are –

(i) To examine the social entrepreneurial intention of BBA students in Yangon University of Economics.

(ii) To investigate the effect of social factors and individual factors on social entrepreneurial intentions of BBA students in Yangon University of Economics.

IV. Method of the Study

This study focus on the social entrepreneurial intention of BBA students in Yangon University of Economics. Both primary and secondary data is used in this study. A structured questionnaire is used to collect primary data form final year BBA students of YUEco. Secondary data is extracted from related website, publications and previous research.

In order to determine the sample size Yamane's formula is used in this study. According to the calculated result of sample size, the 146 BBA final year students out of 231 final year students was conducted the face to face interview and collected the data. Simple random sampling method is used for this study. Regression method is used for data analysis. The questionnaire design is constructed by making five point Likert scale.

V. Conceptual Frame Work of the Study

Although, there is no universally accepted definition of entrepreneurship, there is an agreement that it is a process entailing recognition of a need, exploiting an opportunity to fulfil the need and building an enterprise around it. This behavior would be best predicted by the entrepreneurial intentions (Liñán et al., 2010). For some scholars, venture creation is an outcome of intentions (Maina, 2011).

A prior research in Anglo-Nations has demonstrated marked differences between students who are intending to be entrepreneurs and those who are not (Levenburg & Schwarz, 2008). Henderson and Robertson (1999) found that 67 per cent of those studying entrepreneurship expressed a desire for self-employment. . The conceptual model of this study is shown in Figure (1).

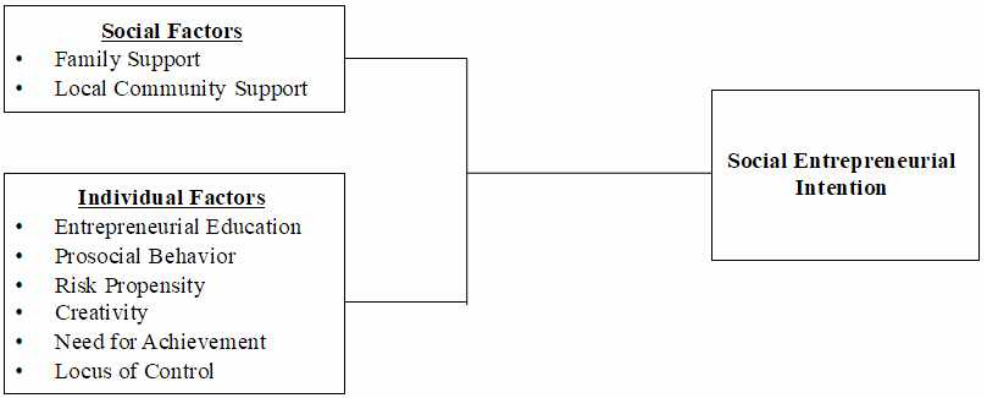

Figure 1. Conceptual Framework of the Study

Source: Own Compilation (2020)

In this study, social factors and individual factors assumed as the key determinants for social entrepreneurial intention of BBA students.Ther are two components for social factors. They are family support and community support.Entrepreneurial education, prosocial behavior, risk propensity, creativity, need for achievement and locus of control are the key measurable factors for individual factors.

VI. Effect of Social Factors on Social Entrepreneurial Intention of BBA Students in YUEco

This section describes the effect of social factors on social entrepreneurial intention of BBA students in YUEco. In this study there are two components in social factors-family support and community support. According to the scholar point of view, family support and community support can enhance the social entrepreneurial intention of students. The multiple regression analysis is to performed to find out the effect of social factors on social entrepreneurial intention.The result of the SPSS output is shown in Table (1).

Table 1. Effect of Social Factors on Social Entrepreneurial Intention

Model	Unstandardized Coefficients		t	Sig	VIF
	B	Std. Error			
(Constant) Social Entrepreneurial Intentions	2.594	.204	12.723	.000	
Family Support	.221***	.052	4.263	.000	1.115
Community Support	.079	.063	1.255	.211	1.115
R Square			.152		
Adjusted R Square			.140		
F Value	12.919***				
Durbin Watson			1.867		

Source : Survey Data (2020)

In Table (1), family support is significant as stated by regression analysis table. One unit increase in family support that can enhance the 0.221 unit in social entrepreneurial intention. Today family support is the essential factor for enhance the social entrepreneurial intention of BBA student in YUEco. Students believe that their family is readiness to support for starting their venture in future. The main social background of young entrepreneurs is family. The occupations of family can strongly influence the choice of career for young person. For instance, if the occupation of father and mother is own business owner the child more interest to do the own business as entrepreneurs.

In addition, family well support not only money but also other supporting factors to young person in order to start the new venture. Some of the family arranged the systematic succession plan for their next generation that well support to do the family business without hesitate.

VII. Effect of Individual Factors on Social Entrepreneurial Intention of BBA Students in YUEco

This section describes the effect of individual factors on social entrepreneurial intention of BBA students in YUEco. In this section-prosocial behavior, entrepreneurial

education, risk propensity, creativity, need for achievement and locus of control are the major components for individual factors. The regression analysis is used for analyze the effect of individual factors on social entrepreneurial intention of BBA students in YUEco. The output of regression analysis is shown in Table (2).

Table 2. Effect of Individual Factors on Social Entrepreneurial Intention of BBA Students

Model	Unstandardized Coefficients		t	Sig	VIF
	B	Std. Error			
(Constant)	-.175	.378	-.464	.644	
Social Entrepreneurial Intention					
Prosocial Behavior	.088	.065	1.361	.176	1.273
Entrepreneurial Education	-.110**	.051	-2.173	.031	1.247
Risk Propensity	.421***	.086	4.884	.000	1.560
Creativity	-.013	.064	-.210	.834	1.399
Need for Achievement	.420***	.068	6.225	.000	1.575
Locus of Control	.189**	.075	2.512	.013	1.137
R	.533				
Square					
Adjusted	.513				
R Square					
F Value	26.679***				
Durbin Watson	1.757				

Source: Survey Data (2020)

As shown in Table (2), R square and adjusted R square are around 50% considered as moderately strong. The value of F test, the overall significance of the models, turned out highly significant at 1% level. The risk propensity and need for achievement have positive signs and coefficients with highly significant at 1% level. At the same time locus of control has the positive signs and coefficients with significant at 0.5% level. Among of these factors entrepreneurial

In this study, risk propensity and need for achievement have positively significant effect on social entrepreneurial intention of BBA students. The need for achievement of respondents is very encourage to start the new social business . The attitude on shaping their own destiny is the key driver for becoming entrepreneur. In addition, respondents don't hesitate to take the risk that can enhance the intention of social entrepreneurship. On the other hand, entrepreneurial education is negative relationship with social entrepreneurial intentions of respondents. Because of respondents perceived that their syllabus more intent to do ordinary business instead

of social enterprise. However entrepreneurial education is positive relationship with social entrepreneurial intention in previous study, in this study BBA students is more interesting to do enterprise not social venture. According to the analysis, the respondents is more willingness to create the profit rather than social impact.

VIII. Conclusion

In the conclusion section there are threeo main components – findings, suggestions and need for further research.. The reasonable findings present in section 8.1 and also suggestions present in section 8.2.

1. Finding

The study conclude the determinants of social entrepreneurial intention of BBA students. This study highlights the social entrepreneurial intention of BBA students is more weighted according to their perceptions because of respondents are more agree to do the social venture in one future. Their ambitious dream is become true if they are encouraged by society. Finally, this study contributes to the entrepreneurial cognition literature by underscoring the importance of the family environment in changing people's entrepreneurial cognitions.

Many studies have paid attention to the family influence on entrepreneurs from the social capital perspective; few studies, however, have discussed the role of the family environment in influencing people's entrepreneurial cognitions. Although, most of the respondents assumed that their community support is not relate with their social entrepreneurial intention.

There are six variables for individual factors – prosocial behavior, entrepreneurial education, risk propensity, creativity, need for achievement and locus of control. An essential discovery of this study is that risk-taking propensity as an individual's psychological attribute, with a trait base point but with a relative situationally-dependent volatility, can have different influences on the Risk-Taking entrepreneurial intentions and actual choices of students in Yangon University of Economics.

Need for achievement is the important factor for enhancing the social entrepreneurial intention of BBA students. Based on the results of the descriptive analysis in this study, it showed that the Need for achievement owned by a management students Faculty of BBA students. Need for achievement is the encouragement of oneself to achieve high performance and is able to achieve its

intended purpose. High achievement someone one of them can be seen from the grade obtained. To obtain a high grade, students need to make efforts in order to become the best. In addition, the student's participation in the activities of the organization also is one of the achievements that can be developed by the students.

In ths study, locus of control is the positive relationship with social entrepreneurial intention of BBA students. The characteristics of internal locus of control are the most crucial part in influencing one's actions. This is influenced by the ability or motivation in entrepreneurship. A person's ability is caused by enormous access to available information about entrepreneurship; thus, facilities are required to support one's achievement and encourage him to develop business ideas through seminars, training, or entrepreneurship courses.

Entrepreneurial education and social entrepreneurial intentions is negative relationship in this study. The perceptions of students is more oriented to apply their knowledge in commercial business rather than in commercial sector. Thus, respondents conclude the delivering the a lot of literature about business concept that can dilute the intention of social entrepreneurship.

2. Suggestions

The finding of this study – that a risk propensity, internal locus of control, and the need for achievement raise inclinations towards entrepreneurship is important in that it adds an international dimension to previous studies. In addition to these findings, the study also looks at the power of these three personality traits in raising entrepreneurial propensity. It has been found that need for achevement is the most powerful in that respect and is followed by the need for achievement. This finding allows us to predict that raising need for achievement followed by internal locus of control,, would yield more efficient results than approactive personality would. Therefore, in the motivation of students, work towards internal locus of control and the need for achievement should be prioritized and allocated enough resources in order to raise intentions of social entrepreneurshp.

The finding that the amount of business education makes no difference on entrepreneurial intentions is quite thought-provoking and worthy of discussion. If more knowledge in business administration makes little difference, can this be attributed to the course programme, content or coverage, the teaching methods adopted, or individual characteristics of the lecturers The present study is expected to encourage interest in and scientific curiosity about answers to such questions, which may have an influence on many processes from business education programmes to teaching methods.

Finally, this study confirms that entrepreneurial propensity increases in line with a

personality, internal locus of control, and the need for achievement, internal locus of control being the most powerful variable. It also lays bare the need to consider course curricula, lecturers characteristics,

and teaching methods when researching into the effects of business education on entrepreneurial intentions.

3. Need for Further Research

The further study should be conduct on comprehensive determinants factors for social entrepreneurial intentions. The sample size should be expand for another study. The concept of social entrepreneurial intention should be used not only in business students but also other students such as in engineering and so on. More investigating the effect of determinants factors on social entrepreneurial intention is also worthwhile for further studies.

In addition, further study should be analyze the relationship of social entrepreneurial intention and social entrepreneurial behavior. The determinants factors should be expand for another study. This concept should be used for analyze the social entrepreneurial intention of BBA students in Monywa University of Economics and Meiktila University of Economics.

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Resources and Competitive Advantage of Weaving Firms in Wundwin Township

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ABSTRACT: The study aims to analyze the effects of resources on competitive advantage of weaving firms in Wundwin Township. The data was collected from 120 weaving firms which represent 25% of total population, stratified random sampling method was used in collecting the primary data, and structured questionnaires were distributed to weaving firm owners during February 2015. The secondary data was collected from the annual report of Directorate of Industrial Supervision and Inspection. Logistic regression analysis was applied for conducting analysis to meet the study objectives. Resources are separately analyzed with physical resources, financial resources, human resources, informational resources, and organizational resources. To represent the competitive advantage, four dimensions: cost reduction, quality improvement, innovation, and customer benefits are included in this study. It was found that organizational resources showed the positive and significant effect on cost reduction; human resources and informational resources highlighted the positive and significant effects on quality improvement; organizational resources described the positive and significant effect on innovation; and human resources and organizational resources proved the positive and significant effects on customer benefits. The study pinpointed the importance of human resources, informational resources, and organizational resources for weaving firms in Wundwin Township.

Key words: *Resources, Human Resources, Informational Resources, Organizational Resources, Competitive Advantage*

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I. Introduction

Resources are valuable and essential basis so that an organization can operate towards achieving its objectives and goals. Resources can be utilized to produce goods and services effectively for business organizations. Basically, land, labor, and capital which are important factors of production (Mankiw, 2005) as the primary resources are used for conducting businesses but better quality resources are competitively acquired for attaining the targeted profit, market share, and customer share as a large number of new competitors are entering into the market and existing competitors are attracting customers.

In today's world of global competition, businesses have to encounter threats from the dynamic changes of competitive forces; and macro environment which comprises political, economic, socio-cultural, technological, environmental, and legal factors. The influence of business environments determine competition level based on the kind of industry because these have much direct or indirect impact on the performances of business enterprises in some industries. When the businesses have to face challenges, these can be overcome by the strength of resource accumulation.

Traditional textiles are produced and modified with fashioned design in demand and popular in Myanmar. Weaving firms from different regions sometimes place order to Wundwin weaving firms for producing their traditional products. In fact, most of the famous weaving firms are located in the Middle Myanmar because of the availability of necessary weather condition for making dry the dyed yarn which is the basic function in weaving process. Weaving firms in Wundwin Township are the early established firms in Myanmar and they have started before 1955 using hand-loom weaving machines. At present, these firms are producing menwear and womenwear longyis, cloth, and blankets; and these products are being distributed around the country and to foreign countries through border trade channels. As they are in the same industry, the strength of external influence is similar with each weaving firm in Wundwin area and thus the competition among them largely relies on the ownership of resources.

1. Rationale of the Study

Weaving firms producing traditional textile spread throughout Myanmar, Wundwin and Amarapura have the greatest number of weaving firms (DISI, 2015). Amarapura is an area where popular weaving firms produce menwear and womenwear silk textile for ceremonial occasion. Although the popular brand is from Amapura, the demanded

products are woven by textile weaving firms in Wundwin Township. Those firms specializing menwear offer subcontract to Wundwin weaving firms and outputs are then steamed, polished, and folded for readily delivering finished goods to customers. Similarly, womenwear is also subcontracted with weaving firms in Wundwin Township, Amarapura weaving firms then specialize outputs by steaming the cloth to be textured and engraving floral design. Thus, Amarapura weaving firms outsource by subcontracting with Wundwin weaving firms which in turn provide a large amount of textile products to the market. Lastly, the products distributed around the country are finally from the production of weaving firms in Wundwin Township.

Resources are compulsory for operating weaving firms and their expansion; some resources have their own attributes of reaching competitive advantage and attaining maximization of firm performance; and thus have to be used constructively and maintained for sustainability. In the constantly changing business environment, businesses have been confronting a variety of challenges because of macro environment as well as competitive forces. These can be resisted only with the bundle of resources possessed by a business and therefore resource heterogeneity makes the businesses different which implies that the more resources are blessed with, the more probability to outperform others.

2. Objectives of the Study

The overall objective of the study is to examine the effect of resources on competitive advantage of weaving firms in Wundwin Township. The specific objectives are as follows:

(i) To identify the effects of resources on cost reduction,

(ii) To examine the effects of resources on quality improvement,

(iii) To investigate the effects of resources on innovation, and

(iv) To analyze the effects of resources on customer benefits provided by weaving firms in Wundwin Township.

3. Scope and Methods of the Study

The study emphasizes on analyzing resources and competitive advantage of weaving firms. In Wundwin Township, there are 485 weaving firms in total which consists of 15 large-sized, 138 medium-sized, and 332 small-sized weaving firms in 2015 according to DISI. By using stratified random sampling method, 120 weaving firms, which represent 25% of each group in the total population, were chosen as a sample. Individual in-depth interview was conducted to comprehend thoroughly the

nature of textile weaving firms. By measuring observed variables with five-point Likert scale, structured questionnaires were constructed and administered to 120 weaving firm owners in February 2015. Logistic regression analysis was mainly used for examining the effects of resources on competitive advantage of weaving firms in Wundwin Township.

II. Literature Review

Resources are "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney, 1991). Resources are assumed as stocks which are controlled by a firm and they are transformed into finished goods through production or operations (Wernerfelt, 1984; Amit and Schoemaker, 1993). Firms can be thought as resource repositories and their performances are different as well, thus resource heterogeneity is considered a crucial condition for achieving competitive advantage (Amit and Schoemaker, 1993; Bridoux, 1997).

Competitive advantage is measured as a general advantage over competitors, sustainability of acquired advantage, the product or service quality and image, price of products or services, the production cost of product or cost of service delivery, and customer satisfaction with product or service (Peteraf and Barney, 2003). The presence or absence of competitive advantage depends on delivery of high value to customers (Gruchman, 2009) as resources are necessitated to be used for competing with rivals in the market (Grant, 1991) and they are the basis for competitive differentiation (Boxall, 2003). It is also found that resources and skills (Piercy et al., 1998) are sources of competitive advantage.

Resource has its own attributes to reach firm performance (Grant, 1991); however, all resources (Gaya et al., 2013) need to meet the criteria of value and rarity for accomplishing temporary competitive advantage; and be competent with the characteristics of value, rarity, inimitability, and non-substitutability (VRIN) for attaining sustainable competitive advantage (Dess et al., 2012; Hitt et al., 2001; Nothnagel, 2008; Priem and Butler, 2001), however, these features are primarily found in intangible resources (Ichrakie, 2013). However, firms can create competitive advantage through utilizing tangible resources effectively. Both tangible and intangible resources are pertained to achievement (Barney, 2001) of not only competitive advantage but also sustained competitive advantage (Williams, 2014).

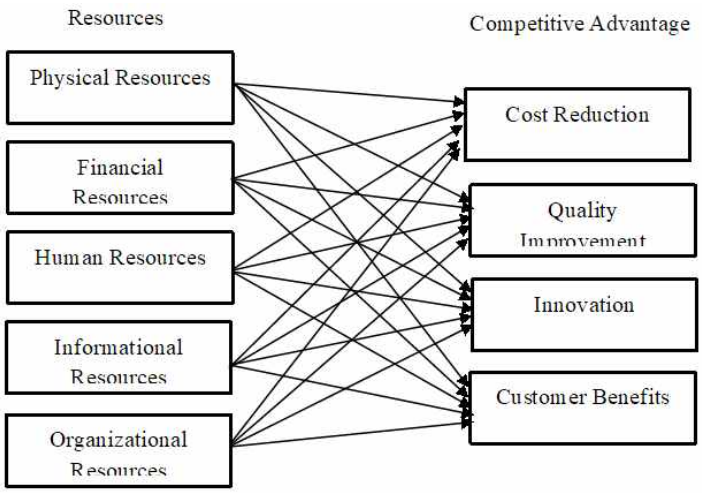

Figure 1. Conceptual Framework of the Study

According to the previous literature, the above conceptual framework is developed by using resources: physical, financial, human, informational, and organizational resources as independent variables and dimensions of competitive advantage: cost reduction, quality improvement, innovation, and customer benefits as dependent variables in this study.

III. Analysis and Results

The effect of five different resources: physical, financial, human, informational, and organizational resources on cost reduction, one indicator of competitive advantage is analyzed as depicted in Table (1). It is found that organizational resources have influence on cost reduction with the coefficient of 1.551 at a statistical significant level of 1 percent and it implies that ordered log-odds of being minimization of cost will increase 1.551 if weaving firms are to increase organizational resources by one point. It means that textile weaving firms are more likely to reduce cost compared with others if they are enriched with organizational resources.

Table 1. Logistic Regression Analysis on Resources and Cost Reduction

Independent Variables	Coefficient	Std. Error	Sig.
Physical resources	-0.119	0.328	0.716
Financial resources	0.418	0.423	0.321
Human resources	0.504	0.343	0.142

Informational resources	0.049	0.242	0.840
Organizational resources	1.551	0.359	0.000
Pseudo R2	0.087		
Log Likelihood	-246.704		
LR chi2	47.4		
Prob > chi2	0.000		

Source: Survey Data (February, 2015)

In addition, the effect of resources on quality improvement, another dimension of competitive advantage, is explored. It is observed that human and informational resources show positive effects on quality improvement. Human resources have influence on quality improvement with the coefficient of 0.747 at a statistical significant level of 10 percent which means that ordered log-odds of being in improvement of quality will increase 0.747 if weaving firms are to increase human resources by one point. The existence of skillful employees drives the momentum to reach competitive advantage of weaving firms.

Table 2. Logistic Regression Analysis on Resources and Quality Improvement

Independent Variables	Coefficient	Std. Error	Sig.
Physical resources	0.601	0.414	0.147
Financial resources	-0.447	0.505	0.376
Human resources	0.747	0.404	0.065
Informational resources	0.832	0.297	0.005
Organizational resources	0.518	0.427	0.226
Pseudo R2	0.147		
Log Likelihood	-93.563		
LR chi2	32.4		
Prob > chi2	0.000		

Source: Survey Data (February, 2015)

Likewise, informational resources have effect on quality improvement with the coefficient of 0.832 at a statistical significant level of 1 percent if weaving firms are to increase informational resources by one point. Weaving firms will be beneficial if reliable information is available from a variety of sources and they will execute their business ideas before starting anything by their competitors.

In analyzing the effects of resources on innovation, it is detected that organizational resources have effect on innovation with the coefficient of 0.720 at a statistical significant level of 10 percent. If weaving firms are to increase organizational resources by one point, ordered log-odds of being in enabling innovation will increase 0.720. To achieve competitive advantage in terms of innovation, weaving firms have to deploy their own organizational resources which are composed of reputation, strong brand, applicability of traditional technology,

applicability of modern technology, long-term relationship with large buyers, and mutual trust because these resources are filled with the feature of intangibles.

Table 3. Logistic Regression Analysis on Resources and Innovation

Independent Variables	Coefficient	Std. Error	Sig.
Physical resources	0.127	0.383	0.740
Financial resources	0.264	0.468	0.572
Human resources	0.003	0.360	0.993
Informational resources	0.421	0.278	0.131
Organizational resources	0.720	0.380	0.058
Pseudo R2	0.063		
Log Likelihood	-127.217		
LR chi2	17.2		
Prob > chi2	0.004		

Source: Survey Data (February, 2015)

Again, the effect of resources on fulfillment of customer benefits is scrutinized among weaving firms in Wundwin Township. It is observed that human and organizational resources assist weaving firms endeavor the attainment customer benefits. It is more likely to fulfill customer benefits if weaving firms are rich with human resources showing the coefficient of 0.640 at a statistical significant level of 10 percent. If weaving firms are to increase human resources by one point, ordered log-odds of being in maximizing customer benefits will increase 0.640. Human resources are able to meet customer specification, reduce both major and minor product defects, and finally enable quick response to customers by producing value added products. Likewise, it is more likely to maximize customer benefits if weaving firms are endowed with organizational resources depicting the coefficient of 1.226 at a statistical significant level of 1 percent. If weaving firms are to increase organizational resources by one point, ordered log-odds of being in fulfilling customer benefits will increase 1.226. Organizational resources are constructive for outdoing others because they are supportive in maximizing customer benefits by providing good quality products, increment of customer responsiveness, and improvement of mutual benefits.

Table 4. Logistic Regression Analysis on Resources and Customer Benefits

Independent Variables	Coefficient	Std. Error	Sig.
Physical resources	-0.120	0.368	0.745
Financial resources	0.149	0.449	0.739
Human resources	0.640	0.374	0.087
Informational resources	0.381	0.381	0.140
Organizational resources	1.226	1.226	0.002

Pseudo R2	0.123
Log Likelihood	-124.693
LR chi2	35.2
Prob > chi2	0.000

Source: Survey Data (February, 2015)

In conclusion, physical and financial resources are not helpful in achieving any of the competitive advantage dimensions. It can be remarked that tangible resources are not supportive in outperforming other weaving firms. Possession of only physical and financial resources is easily imitable by others, these resources are not sufficient for accomplishing competitive advantage.

IV. Conclusion

Resources themselves have own different attributes to create competitive advantage but it is detected that physical resources have no impact on competitive advantage as their attributes might not directly generate competitive advantage of weaving firms. Similarly, financial resources have no influence on any characteristic of competitive advantage of weaving firms. It can be concluded that financial resources might transform into competitive advantage only with the help of some other attributes. The effect of human resources on competitive advantage is positive and significant according to the finding. Particularly, human resources have effect on quality improvement and customer benefits which are two attributes of competitive advantage. Availability of information from reliable sources is crucial for improving product quality by recognizing dramatic or continuous changing market conditions. Remarkable finding is on the analysis of organizational resources which effects are on three dimensions of competitive advantage: cost reduction, innovation, and customer benefits.

All in all, organizational resources are required for attaining minimization of cost reduction; human resources and informational resources are necessary for accomplishing quality improvement; organizational resources are essential for developing innovation; and also human resources and organizational resources are crucial for achieving maximization of customer benefits. To sum up, only intangible resources are supportive in generating competitive advantage of weaving firms in Wundwin Township.

1. Suggestion

The enlargement of tangible resources should be rethought because these resources do not possess the attributes to transform directly to competitive

advantage. Nevertheless, intangible resources are supportive for achieving competitive advantage and accordingly weaving firms should exaggerate human, informational and organizational resources specifically. Human resources are the basis for building core competencies of an organization which can be developed through improving their qualifications. Moreover, acquiring the right information helps managers to make corrective decisions which are crucial for attaining competitive advantage. Besides, building organizational resources are time consuming but it is difficult to be copied by competitors. Since these resources are not easily visible to existing and potential rivals, constructing strongly these kinds of resources will be beneficial for attaining competitive advantage.

2. Implication

The findings contribute resource-based view literature as it is observed that intangible resources are extraordinarily related to competitive advantage. It can be comprehended that weaving firms are more likely to achieve competitive advantage if they are endowed with intangible resources. Thus, resource heterogeneity might vary achievement of different types of weaving firms. Accordingly, weaving firm owners should expand its investment in procuring intangible resources by using some percentage of yearly profits.

Needs for Further Study

Further studies should focus resources in different types of firms and hence further researches can examine key resources which are essential to operate different businesses. All weaving firms are generalized in this study, nevertheless, there are different types according to their business nature such as subcontract-offering firms, subcontract-receiving firms, and stand-alone firms. According to the types and sizes of firms, the findings might be different and interesting results might be discovered.

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Determinants of Subcontracting in Weaving Firms, Amarapura Township

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ABSTRACT: This study examines the determinants of subcontracting in weaving firms, Amarapura township. This study attempts to identify subcontracting practices of weaving firms, to analyse the relationship between subcontracting practices and subcontracting, and to examine the effect of subcontracting on the growth of weaving firms in Amarapura township. The determinants of subcontracting among weaving firms comprises firm size, heritage, female workers, and skilled workers. This study utilizes primary data from 65 owners out of 387 weaving firms from Amarapura township in 2019. Survey data was collected by using simple random sampling method. Multiple regression and simple linear regression analysis are applied to analyze the variables of this empirical study. In exploring the relationship between subcontracting practices and subcontracting of weaving firms in Amarapura township, it is found that skilled workers and heritage are effective linkages to develop subcontracting of weaving firms in this region. However, firm size and female workers involvement have relationship but not having any significant effect on the growth of weaving firms. In addition, subcontracting between weaving firms contribute directly to the growth of firms. Suggestions, recommendations and policy implications for weaving industry are presented.

Key words: subcontracting, heritage, linkage, growth

I. Introduction

The development of industry and industrial organizations plays the key role for the development of the country. In fact, cluster-based industrial development can be seen in both high-tech and low-tech labor-intensive industry. The inter-firm

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cooperation and subcontracting between manufacturing organizations become the distinct landscape of concentrated industries near the urban area. Various researchers in the field of industrial development have found out contributing factors for subcontracting to propose policy implications for regional and socioeconomic development. Xayphone (2008) mentioned that the focus of prior researches has a trend to modern theories (networking or clustering) rather than traditional approach.

Watanabe (1971) claimed that subcontracting can smooth the path of small firms to grow and make them a suitable tool for mass employment generation in developing countries that are committed to industrialization. Xayphone and Takahashi (2008) confirmed that subcontracting among manufacturing firms and subcontracting firms is the most crucial factors that improve firm performance. Subcontracting can be seen the major driver for the sustainability of weaving business in Amarapura township. Such kinds of subcontracting relationship support the utilization of skilled workforce for productivity improvement as dependable suppliers create business success.

1. Rationale of the Study

In Amarapura township, micro, small, and medium weaving enterprises (MSMEs) concentrate which offer investment opportunities for entrepreneurs as an advantage of localization economies. The growth of cluster-based, micro and small manufacturing firms located in this township, and interfirm-cooperation and subcontracting behavior can lead to industrial clusters. The implication of sectoral specialization through dependable subcontractors within a particular region promote investment climate through the effective utilization of resources from the weaving enterprises to gain production efficiency for the promotion of the main stream of weaving cluster. In the context of developing economies, collective efficiency through subcontracting as the competitive advantage and industrial linkages plays the vital role to promote the growth of firms.

2. Objectives of the Study

The overall objective of the study is to examine the determinants of subcontracting in weaving firms in Amarapura township. The specific objectives of this study are:

(i) To identify subcontracting practices of weaving firms,

(ii) To analyze the relationship between subcontracting practices and subcontracting, and

(3) To examine the effect of subcontracting on the growth of weaving firms in Amarapura township.

3. Scope and Method of the Study

This study focuses on contributing factors of subcontracting and the growth of weaving firms in Amarapura township. To identify the determinants of subcontracting, both primary data and secondary data were applied in this study. Primary survey data was collected by setting personal interview with owners and managers in Amarapura township by using survey questionnaires. Survey data was collected from 65 owners out of 387 weaving firms in 2019. Therefore, the sample represents 17% of weaving firms, and survey data was gathered by applying simple random sampling method. The secondary data was collected from the relevant empirical study, previous literature, and Directorate of Industrial Supervision and Inspection Committee, Mandalay. Descriptive statistics, correlation, multiple regression, and linear regression are applied as analytical methods to predict the determinants of subcontracting for weaving industry.

II. Literature Review

Subcontracting can be regarded as a specific form of outsourcing and contracting that requires cooperative relations and sharing knowledge between manufacturing organizations (Heshmati, 2003). In other words, subcontracting involves parent firms, subcontract receiving firms and other industrial firms within a region. A report writer by NCEUS (2007) mentions that subcontracting is mainly composed of the traditional subcontractors as a home-based heritage business. Taymaz and Kilicaslan (2005) conducted a survey to find out the determinants of subcontracting and regional development in Turkey. They found that size of firm has positive effect with subcontract-offering in manufacturing firms. Their further result pointed out that firm size contributes to grow on both subcontract-receiving and subcontract-offering behavior. Also, they argue that large firms tend to subcontract a larger part of their production. Ypeij (1998) found that the share of female employees from the workplace has a positive effect on subcontract offering firms in textile industry.

Subcontract offering and receiving activities promote industrial linkages among business partners for mutual benefits. Dicken (1992) pointed the elements of subcontracting including technical aspects of production, nature of the principal firm, type of subcontracting (motivation of principal firm), types of relationship between

principal and subcontractor, and geography scale involved. According to Watanabe (1971), subcontracting is the primary way to move efficient production process for fulfilling the development of productivity variables in an organized way.

Subcontractors with the effective workforce of skilled workers become large contractors likely to work as contractors (Takahashi and Xayphone, 2008). The empirical findings of U.K. SME subcontractors indicate that firms with inter-firm partnership arrangements with members of their supply chain experienced significantly higher growth rates (Wynarczyk & Watson, 2005). Some industrial clusters are based on more traditional activities that maintain their advantage in know-how in one specific region for a long period of time. An empirical study of Lao garment industry found that that inter-firm cooperation among manufacturing firms and subcontracting firms is the most influential factor that improve firm performance (Takahashi & Xayphone, 2008).

The analytical framework in Figure (1) describes the determinants of subcontracting in weaving firms. The dependent variables of this study are firm size, heritage, female workers, and skilled workers. The independent variable is subcontracting of weaving firms. Then, subcontracting is placed as independent variable and firm growth is entered as dependent variable in this study.

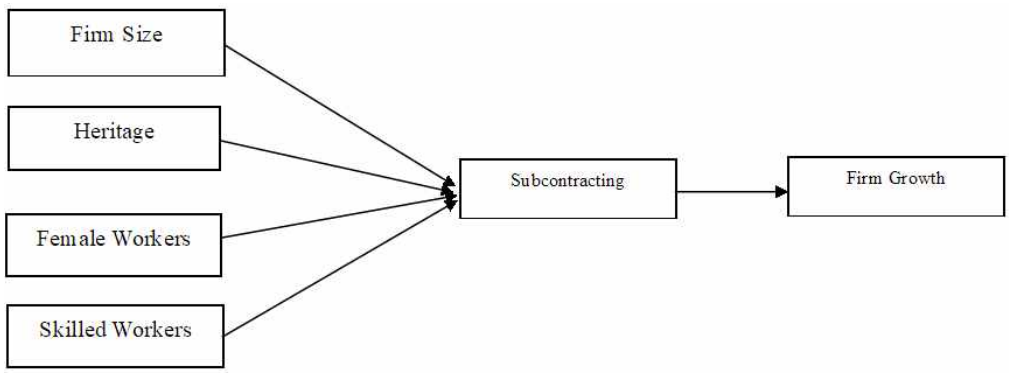

Figure 1. Analytical Framework

Source: Adapted from Previous Studies

The independent variables included in the regression model are determinant factors of subcontracting. The determinant factors of subcontracting in weaving firms are measured by part time and full-time employees, the tradition of weaving business, the contribution of female workers, the contribution of skilled labor, the knowledge and experience of workers for weaving skills. Subcontracting is measured by the participation in subcontracting relationship, mutual agreement, and investment portfolio with business partners. In our questionnaire, performance was originally

measured by several indicators including firm's growth of sales, profit, productivity, labor productivity, employment in the firm.

III. Findings and Discussions

To identify the determinants of subcontracting in weaving firms in Amarapura township, the mean value of each determinant factors is expressed with standard deviation. As shown in the followings, the alpha values except firm size are above 0.70, the minimum acceptance level. The standard deviation for each variable is below one which explains that the scale items of questionnaires are consistent and reliable and the result of this questionnaire are suitable for further analysis.

According to the mean values for determinants factors of subcontracting as shown in Table (1), all the determinant factors of firm size, heritage, female workers, and skilled labors are at the agree level. Among them, the mean value of skilled labor is higher than other determinant factors of subcontracting. Thus, it can be pointed that skilled labor and effective employees play very important role for the establishment of weaving firms. Subcontracting relationship can be established through the attainment of skilled workforce with weaving skills in the workplace. On the other hand, heritage of weaving firms shows the minimum mean value among other determinant factors in the study area. Thus, it can be inferred that many entrepreneurs enter into the textile and weaving sector for profitable opportunities, and new subcontractors are outsourced by large firms to supply the finished and semi-finished products.

The correlation of the involved variables of firm size, heritage, female workers, skilled labor, subcontracting, and firm growth is tested to show the association between research variables. Correlation is statistical technique that can show whether and how strongly pairs of variables are related. Table (2) demonstrates the correlation coefficient for dependent variable and independent variables.

Table 1. Descriptive Statistics and Reliabilities Test

Sr	Variables	Mean	SD	Item	Alpha
1	Firm Size	3.76	0.556	6	0.564
2	Heritage	3.67	0.981	6	0.899
3	Female Workers	3.73	0.608	5	0.766
4	Skilled Workers	3.85	0.735	7	0.897
5	Subcontracting	3.85	0.685	6	0.822
6	Firm Growth	3.82	0.816	5	0.875

Source: Survey Data (March 2019)

Table 2. Correlation between Inter-firm Cooperation and Firm's Growth

Sr.	Variables	1	2	3	4	5	6
1	Firm Size	1					
2	Heritage	0.590**	1				
3	Female Workers	0.471**	0.587**	1			
4	Skilled Workers	0.738**	0.660**	0.593**	1		
5	Subcontracting	0.607**	0.637**	0.526**	0.770**	1	
6	Firm Growth	0.718**	0.617**	0.614**	0.866**	0.732**	1

Note: ** is statistically significant at 1%level.
Source: Survey Data (March 2019)

The results show that firm size, heritage, female workers, and skilled workers have strongly correlation with the subcontracting of weaving firms at 0.01 levels. Therefore, the contribution of determinant factors is good, the subcontracting behavior of weaving firms will be improved. The correlation results showed that inter-firm cooperation and subcontracting with industrial organizations is the key to establish subcontracting of weaving firms in Amarapura township. In addition, the correlation among independent variables is not so high, thus, it can be concluded that there is no multi-collinearity among these variables.

Determinant factors and subcontracting of weaving firms are measured on a continuous scale and multiple regression analysis is used in this study. The relationship between determinant factors and subcontracting between weaving firms is analyzed as described in Table (3).

According to the results in Table (3), the model explains that the variation in overall level of firm's subcontracting exists as R2 value is 62.40 percent. This indicates that independent variable can explain 62.40 percent of the variations in dependent variable. The value F of 24.895 with a p-value of 0.000 indicates that the model as a whole is statistically significant at 1 percent level. According to the multiple regression results, the degree of subcontracting in weaving firms will increase 0.889 if weaving firms do not have subcontracting behavior and practices in the weaving industry.

Table 3. Multiple Regression Analysis on Determinants of Subcontracting

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
Constant	0.889**	0.428		2.078	0.042	
Firm Size	0.043	0.148	0.035	0.293	0.771	2.289
Heritage	0.145*	0.079	0.207	1.825	0.073	2.056
Female Workers	0.047	0.117	0.042	0.402	0.689	1.722
Skilled Workers	0.543***	0.125	0.583	4.336	0.000	2.883
R Square	0.624					
Adjusted R Square	0.599					
F	24.895					
Prob > F	0.000					

Note: ***, **, and * are statistically significant at 1%, 5%, and 10% levels respectively.
Dependent Variable: Subcontracting
Source: Survey Data (March 2019)

Skilled workers have effect on the subcontracting of weaving firms with the regression coefficient of 0.543 at a significant level of 1 percent and it implies that the degree of subcontracting among weaving firms will increase 0.543 if the contribution of skilled workers increases by one unit. Weaving firms in the study region rely on skilled workers in order to produce quality products, and the retention of skilled workers become essential for the growth of weaving firms. In addition, skilled workers mostly become subcontractors who can fulfill the daily needs of weaving products.

Heritage of weaving firms has effect on the development of subcontracting practices with the regression coefficient of 0.145 at a significant level of 10 percent and it implies that the subcontracting of weaving firms will increase 0.145 if the heritage of weaving firms increases by one unit. It can be pointed that surveyed firms include traditional weaving firms which produce weaving products that can fulfill local need. Traditional family business can be observed in the industrial districts, and those firms have high potential to outsource form other larger firms.

Firm size cannot contribute subcontracting of weaving firms, and it implies that size of firm does not matter for subcontracting. Most firms in the study area includes small and medium enterprises and these firms make subcontracting arrangements depending on personal networks and market coverage of their firms. In fact, subcontracting transactions cannot be precisely assessed through firm size.

Female workers involvement does not have significant effect on subcontracting practices of weaving firms in the study region. Although female workers contribute the large portion of weaving manufacturing process, most subcontracting activities are closely related with managing the relation between contractors and subcontractors.

In addition, the participation of both male and female subcontractors can be observed in negotiation with the parent firm which comprises the varying number of male and female workers.

Subcontracting behavior and the growth of weaving firms is measured on a continuous scale and simple linear regression analysis is used in this study. The relationship between subcontracting and the growth of weaving firms is analyzed as described in Table (4).

Table 4. Relationship between Subcontracting and Firm Growth

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	0.461	0.399		1.153	0.253
Subcontracting	0.872***	0.102	0.732	8.530	0.000
R Square	0.536				
Adjusted R Square	0.529				
F	72.766				
Prob > F	0.000				

Note: *** is statistically significant at 1% level.
Dependent Variable: Firm Growth
Source: Survey Data (March 2019)

According to the results in Table (4), the model explains that the variation in overall level of firm's growth exists as R2 value is 53.60 percent. This indicates that independent variable can explain 53.60 percent of the variations in dependent variable. The value F of 72.766 with a p-value of 0.000 indicates that the model as a whole is statistically significant at 1 percent level. According to the multiple regression results, the growth of weaving firms will increase 0.461 if weaving firms do not have subcontracting behavior and practices in the weaving industry.

Subcontracting relationships have effect on the growth of weaving firms with the regression coefficient of 0.872 at a significant level of 1 percent and it implies that the growth of weaving firms will increase 0.872 if the subcontracting of weaving firms increases by one unit. Subcontracting and industrial linkages in a specific space have contributed the collective advantage through the infusing technical specialty and innovation performance. These advantages for industrial growth are the outcome of the concentrated subcontractors and related supporting industries.

IV. Conclusion

In this study, skilled labor involvement contributes to the growth of subcontracting relation among weaving firms, this mean that skilled labor from labor market determine the fulfillment of weaving products accordingly to market demand. In addition, labor mobility in the weaving industry facilitates knowledge and skill transfer which contribute to fulfill demand through subcontracting and outsourcing. In addition, skilled workers mostly become subcontractors who can fulfill the daily needs of weaving products.

Contributing factors for subcontracting relation for weaving businesses comprise the effective network of large firms and business partners in Amarapura township. This led to the superior business growth due to the utilization of skilled workforce and business expertise such as sharing knowledge and providing financial support for fulling order form the market. Thus, subcontracting can be seen the viable strategy for local weaving firms' owners who are interested in marketing of weaving products to urban area and foreign abroad.

The subcontracting relation between parent firm and small and micro weaving firms, and firm growth is analyzed. The survey result shows that it has a positive effect on survivability, although all determinant factors does not have a significant influence on subcontracting practices. However, it is important to answer the questions of what other determinant factors for subcontracting are and what affect subcontracting practices has on a firm's performance.

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ENTERPRISE RISK MANAGEMENT OF SMALL AND MEDIUM ENTERPRISES IN NAY PYI TAW

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Abstract: This study aims about enterprise risk management of Small and Medium Enterprises (SMEs) in Nay Pyi Taw. The objectives of the study are to identify enterprise risk management practices and to analyze the effects of enterprises risk management practices on organizational performance of SMEs in Nay Pyi Taw. Primary and secondary data are used in this study. Primary data are collected from the owners of 61 firms among 247 SMEs (25%) by using simple random sampling methods. These data are gathered by using structured questionnaire with Five Point Likert scale. Secondary data are obtained from documents of SMEs, relevant text books, previous research papers and Internet Web sites. The primary data were collected in May, 2020 which is the pandemic period announced by World Health Organization. Descriptive statistics, correlation analysis and multiple regression analysis are used to analyze the collected data. The research found that communication is the maximum mean value and management support is the minimum mean value. There are positive and significant relationship between enterprise risk management practices and organizational performance. According to multiple regression analysis, communication has only significant and positive effect on organizational performance. The other practices do not have effects on organizational performance. Therefore, SMEs should manage risk by creating open and honest communication within their stakeholders to improve the organizational performance.

Key words: *Enterprise risk management, Organizational performance, Pandemic period*

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I. Introduction

Organizational performance is critical to sustainable success of every business. In today's world of globalization, businesses are facing challenges concerned with the ever-changing nature of political, economic, socio-cultural, technological and environmental factors. A business can contribute to the well-being of its society by retaining its internal and external customers, connecting with suppliers and constantly increasing its efficiency. Kaplan and Norton (2001) viewed organizational performance as a multidimensional concept, and all aspects of performance are related to the success of the organization. Several researchers use organizational performance extensively.

Enterprise Risk Management (ERM) is a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives (Fraser & Simkins, 2010). Making good decisions in the face of uncertainty and danger may well have been the earliest form of human life. These humans have to be creative in using their experience and mind to reduce the uncertainty of warmth and protection. ERM has become a top priority for management. The current pandemic period highlights the devastating consequences if strategic risks are ignored and not addressed effectively. There are numerous demands for the development of a comprehensive overview focusing on the management of business risks emerging from the economic crisis.

The challenges and opportunities for organizations are explicitly incorporating risk thinking and risk management into their activities. Expectations are growing that small and medium-sized businesses will be able to effectively manage the risks facing businesses. The ongoing Covid-19 crisis, which began at the end of 2019, is now a major highlight of the owners' business venture management process. There are now a lot of calls for huge advances in risk management. More specific risks need to be considered when businesses owners are managing the implementation of an organization's specific strategic plans. The shift to higher expectations for risk management oversight, which affects the business as a whole, is also compounded by the increasing amount and complexity of risks that can affect a business. The complexity and increased competition of business transactions encourage the identification and response of potential risks. It is more difficult for business owners to monitor the ongoing complex risks. The threats and pitfalls of a business are difficult to manage. Many dangers are not known, but they have similar effects. Managers or owners are increasingly responsible for considering the potential

possibilities and impacts associated with their business operations for unforeseen events.

In 2015, Myanmar adopted the Small and Medium Enterprises Development Law. There is controversy over the need for legislation for small and medium-sized businesses. Small and medium enterprises (SMEs) play a key role in the development of the country. In fact, small and medium enterprises (SMEs) are the mainstay of the private sector. It is the source of all creativity. In addition, they help creating job opportunities and reducing poverty. It can respond to entrepreneurship and market demand. Therefore, the real driving force for economic development can lead to development during times of economic instability. The Republic of the Union of Myanmar is trying to get industrialized from an agricultural country. In addition, the policy on the development of small and medium-sized enterprises is aimed at achieving development that supports the social and economic development of the country. It also aims to participate in the ASEAN Economic Community in accordance with the Free Trade Agreement.

Nay Pyi Taw is the capital and third largest city of Myanmar. It was located in the center of Nay Pyi Taw Union Territory. It is unusual among Myanmar's cities, as it is an entirely planned city outside of any state or region. In 2006, Yangon was officially replaced as the administrative capital of Myanmar. As the seat of the government of Myanmar, Nay Pyi Taw is the site of the Union Parliament, the Supreme Court, the Presidential Palace, the official residences of the Cabinet of Myanmar and the headquarters of government ministries and military. Nay Pyi Taw is notable for its unusual size and low population density. In Nay Pyi Taw, small and medium enterprises are thriving over time, but they face serious risks during Covid-19 pandemic period.

Enterprises risk management is about: identifying the potential risks, assessing and rating the likelihood of those risks happening, assessing the consequences and rating the impact on the organization if those risks occur, developing plans for dealing with the consequences and impacts, reporting to decision-makers about the risks, monitoring the risk potential and status throughout the operations, and implementing contingency plans. Before identifying a risk, it is necessary to know what the real risks are. The objectives of risk management in relation to the organization are defined and criteria, resources and authorities for the treatment of risks are determined. It allows the status of organization in several forms such as resource usage, equipment requirements, budget availability, stakeholder involvement, contract deliverables, strategic goals and schedule (Ahmed et al., 2007). Cooper et al. (2005) said that the opportunity identification process is similar to that used to identify threats. However, the organization needs to understand and agree on the meaning of the term danger. Opportunities often need to be identified and managed by the

same decision as threats as part of the same process.

There are tools that companies can use to guide them in risky periods. The key to any business venture is to manage the risks and recover the profits. Experts, management and other stakeholders can identify risks. Everyone has a different perspective, knowledge and experience that will help ERM significantly. In addition, the company intends to continue to monitor the risks to its operations and ensure that decision-makers are fully aware of the risks and impacts associated with them. There are three main ways to respond the risks; avoidance, postponement and reduction. Organizations can avoid certain risks by entering or not entering the market. They can wait and not make decisions or take any action. Finally, they reduce their work on protective equipment.

Management support is one of the most popular variables in ERM studies that discusses the effectiveness of ERM extensively. Management support can be defined as the commitment of senior management within the organization. This is because they are associated with a desire to allocate valuable organizational resources (Holland & Light, 1999). Commitments from management support and top management are essential for a variety of organizations and are one of the key factors in managing risk effectively. The entire risk management process requires the support of healthy stakeholders within the organization (Ahmed et al., 2007).

Consultation and communication are key components of risk management process that is critical to the success of any business. Organizations need to develop appropriate communication strategies to support effective communication and consultation. In addition, the focus should be on counseling. Therefore, it is important to communicate with stakeholders throughout the risk management process.

Organizational culture has been recognized as an influential factor in analyzing organizations in various contexts. Culture is essential because acting without knowing cultural forces might have unpredicted and unwanted outcomes (Ahmady, et al., 2016). Organizational culture can be defined as a complex set of values, beliefs, assumptions, and symbols that define the way that a firm conducts its business (Barney, 1986). Therefore, it is crucial to the organization to manage organizational culture because the individual in the organization responds to shared values and other aspects of organizational culture. Also, their action can have a significant impact on organizational effectiveness (Tsai et al., 2017). Moreover, knowing culture helps managers to implement suitable strategies to overcome the organization weaknesses.

Before looking at a case for a possible relationship between ERM and organizational performance, it is important to capture the concept of organizational performance that has a significant practical impact on ERM. An organizational performance is defined as the capacity of an organization through the efficient and

effective use of resources (Daft, 2015). Several researchers design an organizational performance in many ways to determine how best to measure a concept. However, it has been criticized that the traditional organizational performance measurement system based on cost accounting is not sufficient to measure the full organizational performance standard (Heys & Cler, 1988).

Many publications have shown how ERM practices affect an organizational performance. Andersen (2009) states that ERM is ultimately leading to better financial performance, such as retained earnings, return on assets and growth in market value. These results also in line with Teoh (2009) who found ERM implementation significantly has an impact on the organizational financial and non-financial aspects. In addition, Gates et al. (2012) investigated the impact of organizational performance on ERM implementation. Moreover, the implementation of ERM has a significant positive impact on the organizational performance and business strategy (Sara Soltanizadeha et al., 2014). The findings make it clear that ERM improves the management of the organization by better informed decision-making and increased accountability. Based on the above literature review, the objectives of the research are to identify enterprise risk management practices of Small and Medium Enterprises in Nay Pyi Taw and to analyze the effects of enterprise risk management practices on organizational performance of Small and Medium Enterprises in Nay Pyi Taw. The conceptual framework based on previous research studies is shown in Figure.

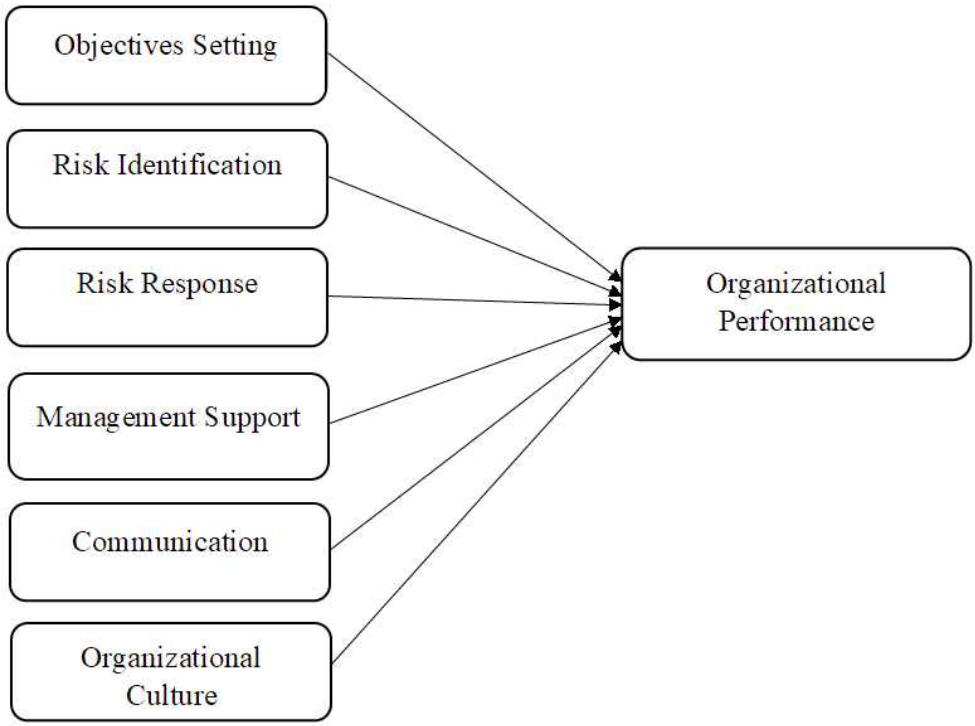

Figure 1: Conceptual Framework of the Study: Enterprise Risk Management Practices

Figure shows that enterprise risk management practices (objectives setting, risk identification, risk response, management support, communication and organizational culture) are independent variables and organizational performance is dependent variable. It is proposed that enterprise risk management practices will have positive effect on organizational performance.

II. Methods of the Study

This study focuses on enterprise risk management practices and organizational performance of SMEs in Nay Pyi Taw. According to Nay Pyi Taw Association of Micro, Small and Medium Enterprises (MSMEs) (2020), the total numbers of registration firms are 480 micro, small and medium enterprises. Among them 247 are small and medium enterprises. In this research, 61 out of 247 firms (25% of total population) are selected as the sample of this study. It uses both primary and secondary data. Primary data are collected from the owners of the selected firms by

using simple random sampling method. Structured questionnaires are distributed to these respondents via the Internet. Items of the questionnaire are measured with five-point Likert scale. Primary data are also collected by making in-depth interview with the selected owners. Secondary data are gathered from MSME's documents, relevant text books and Internet web site. Descriptive statistics, correlation and multiple regression analysis are used to analyze the collected data. Data collection period was during May, 2020 which is the period during Covid-19 pandemic periods announced by World Health Organization.

III. Analysis and Results

In order to meet the objective of identifying enterprise risk management practices, the respondent perception towards enterprise risk management practices and organizational performance are analyzed by descriptive statistics (mean and standard deviation). The standard deviation is commonly used to measure confidence in statistical conclusions. Standard deviation (S.D) is perhaps the most valuable index of spread or dispersion. A low standard deviation indicates that the data points tend to be close to the mean (also called the expected value) of the set, while a high standard deviation indicates that the data points are spread out over a wide range of values. If standard deviation is greater than 1, it means that the respondent has quite different opinion about the questions. It is very important to test reliability of the dimensions in the questionnaire before analyzing the data. Generally, the reliabilities (Alpha Value) of variables are adequate if the values are around 0.70 (Zikmund, et al., 2010). The numbers of items and the Alpha values are described to check the internal consistency among variables.

As described in Table (1), the alpha values of all variables are more than 0.60 and prove the reliability of the items. These items direct towards one dimension. The alpha values of all variables have the acceptable levels. Thus, the results of the questionnaire are suitable for further analysis.

Table 1. Descriptive Statistics and Reliability Test of the Variables

Sr. No.	Variables	Mean	SD	Numbers of Items	Cronbach's Alpha
1	Objective Setting	3.70	0.536	5	0.617
2	Risk Identification	3.75	0.492	5	0.692
3	Risk Response	3.77	0.433	5	0.650
4	Management Support	3.69	0.425	6	0.791
5	Communication	3.82	0.547	5	0.807
6	Organizational Culture	3.78	0.536	11	0.797
7	Organizational Performance	3.74	0.452	7	0.863

Source: Survey data (May, 2020)

According to Table (1), descriptive statistics are depicted before going to correlation and multiple regression Analysis. In this study, the values of standard deviation are below 1 which means that it does not deviate from the mean value of each variable. The above Table (1) shows that respondent perception on all the enterprise risk management practices are at the agree levels of the respondents. The mean value of respondent perception towards objective setting is 3.70 which is the agree level. It means that the owners are setting the objectives to manage their risks. They are awareness to manage the risks and trying to prevent the severe conditions. Risk identification has the mean value, 3.75 that is at the agree level. It implied that the owners are identifying the potential risks and opportunities during the crisis. The owners are meeting with the experts within and outside the organizations. They are trying to set the smart objectives and identify the risks and opportunities simultaneously. The mean value of risk response is 3.77 which is also at the agreement level. It can be said that the owners of SMEs are selecting the risk response carefully. At first, they are trying to avoid the risk for the covid-19 disease by closing their businesses and instructing employees to stay at home. After that they wait and see the severe situation by working from home. Finally, they mitigate the risk as possible as they can reduce not for causing the disease in their businesses while they are working both the business and home.

The mean value of respondent perception towards management support is 3.69 which is the minimum mean value. It has also still at the agree level. It can be seen that respondents think management support is good for risk management. They are trying to support their employees as much as they can. The mean value of communication gets 3.82 which is the maximum mean value among the ERM practices. It can be said that the respondents believe that communication is essential in risk management. Communication is critical during the risky period like the pandemic period. Employees are feeling afraid and don't want to come the work because they want to avoid the disease. They are waiting and listening the news from the government, the world news and the news from their employers. At that time, employees are necessary to give clear and concise information about the jobs and their arrangement.

Organizational culture gets the mean value, 3.78 which is the agree level. The owners are creating the organizational culture to mitigate the risks. Respondents perception towards organizational performance is also the agree level. It can be concluded that organizational performance is growing by managing risk. Therefore, SMEs are using large extent of ERM practices during the pandemic period. In order to meet the objective of analyzing the effects of enterprise risk management practices on organizational performance of SMEs in Nay Pyi Taw, the collected data

are analyzed by correlation analysis and multiple regression analysis. Correlation analysis of the variables is shown in Table (2).

Table 2. Correlation Analysis Among Variables

Sr. No.	Variables	1	2	3	4	5	6	7
1	Objective Setting	1						
2	Risk Identification	0.639***	1					
3	Risk Response	0.629***	0.589***	1				
4	Management Support	0.680***	0.597***	0.619***	1			
5	Communication	0.640***	0.622***	0.694***	0.839***	1		
6	Organizational Culture	0.545***	0.633***	0.697***	0.714***	0.690***	1	
7	Organizational Performance	0.564***	0.581***	0.655***	0.631***	0.733***	0.666***	1

Source: Survey data (May, 2020)
***Correlation is significant at the 0.01 level (2-tailed).
Dependent variable: Organizational Performance

According to Table (2), the correlation results reveals that risk management is positively correlated with organizational performance at the 0.01 significant level. Correlation coefficient of objective setting, risk identification, risk response, management support and organizational culture are 0.564, 0.581, 0.655, 0.631 and 0.666. They are moderately and positively correlated with organizational performance. Communication is strongly and positively correlated with organizational performance because the value is 0.733. It can be concluded that SMEs are applying enterprise risk management practices increasingly, their organization can improve the financial and non-financial performance. Multiple Regression analysis is shown in Table (3).

Table 3. Multiple Regression Analysis of Risk Management and Organizational Performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-0.022	0.456		-0.048	0.962		
Objective Setting	0.082	0.144	0.075	0.569	0.571	0.413	2.422
Risk Identification	0.093	0.155	0.075	0.603	0.549	0.461	2.170

Risk Response	0.180	0.174	0.142	1.035	0.305	0.381	2.626
Management Support	-0.124	0.173	-0.127	-0.717	0.477	0.231	4.326
Communication	0.485	0.173	0.484	2.796	0.007	0.240	4.162
Organizational Culture	0.278	0.170	0.234	1.638	0.107	0.353	2.833
R	0.781						
R square	0.611						
Adjusted R square	0.567						
F	14.119***						

Notes: ***= Significant at 1% level
Source: Survey data (May, 2020)
Dependent variable: Organizational Performance

According to Table (3), the power of the model to explain organizational performance of SMEs in Nay Pyi Taw is good as the value of adjusted R2 is more than 50 percent. The value of F-test, the overall significant of the models, comes out highly significant at 1 percent level. The model of organizational performance is a good descriptor of the relationship between the dependent and independent variables. Thus, the independent variables significantly explain the variance in organizational performance of SMEs in Nay Pyi Taw.

According to the Multiple Regression result, organizational performance will decrease 0.022 if SMEs are not using ERM practices. Communication has positive and significant effects on organizational performance at 1 % level. It can be said that SMEs which manage risks properly have effect on organizational performance. However, objective setting, risk identification, risk response, management support and organizational culture do not show significant effects on organizational performance. Therefore, SMEs can increase organizational performance by properly managing their risks. Among them, communication is the contributing factor to improve organizational performance.

IV. Discussion

This study analyzes the extent of enterprise risk management practices and the impact of enterprise risk management practices on organizational performance of small and medium enterprises in Nay Pyi Taw. Small and medium enterprises focus on ERM practices at the agreement level. Communication is the highest agreement level in ERM practices. Most small and medium business owners apply proper communications for their company's risk management. Open communication during

an epidemic crisis is critical for businesses. Their employees are afraid of the disease in their working conditions. They do not want to work in unsafe environment. Therefore, owners consider telecommunications to be the most important factor in risk management practices. Management support is the lowest mean value among ERM practices, but still at the agreement level. Owners believe that their support is needed to deal with the risk of infection because employees are feeling afraid of the covid-19 disease.

The correlation analysis shows that there are positive and significant relationship between ERM practices and organizational performance. Therefore, the more ERM practices are applied in SMEs, the more increase their performance. The owners should recognize and manage these risks during the crisis. Enterprise Risk Management (ERM) has been identified as an organized and systematic way of managing risk throughout an organization and recent research results have shown ERM implementation has positive significance on the businesses' financial and non-financial performance (Ibrahim, 2017).

According to the multiple regression analysis, communication has only significant effects on organizational performance among ERM practices. This finding agrees with the finding of Alawattegama (2018). He found that risk assessment and control activities have a negative impact on the firm performance. Information communication and monitoring functions indicate a significant impact on firm performance. Nevertheless, monitoring function shows a negative impact on the firm performance. The researcher believes this negative impact is attributable to the increased cost of monitoring activities that is crucial for a diversified business setup. This empirical evidence induces the researcher to conclude that, except for communication and monitoring, the adoption of ERM has no significant impact on the firm performance.

The model of the research is positively significant. Thus, ERM practices can improve organizational performance. This result agrees with the previous research studies. Ranong & Phuenngam (2009) found that a set of seven critical success factors which can be used as a guideline on how to increase the effectiveness of risk management procedures. These factors are commitment and support from top management, communication, culture, information technology (IT), organization structure, training and trust. Saleem and Zain-Ul-Abideen (2008) proved that risk management practices are not widely used by the organizations, moreover most of the organizations do not have documented risk management policy properly. Therefore, these organizations cannot deal with the risks systematically and sometimes face negative consequences for the non-systematic approaches. However, few companies have implemented certain risk management techniques and are enjoying high performance. Shatnawi (2020) found that Enterprise Risk Management (ERM) has now become an ultimate concern and a robust risk management approach

in all financial and non-financial industries and other sectors throughout the globe.

V. Conclusion

ERM practices are used in small and medium enterprises in Nay Pyi Taw. The owners set specific goals for their business and get advice from their employees on how to work during a crisis. They also identify the potential dangers and threats facing their operations. They look forward to the pandemic period and the critical success of overcoming this crisis. Owners need to avoid the disease for their employees to be safe. The owners choose to avoid the disease, mitigate and reduce the risks as possible as they can by working from home, working with social distancing and working through digital technology. They help their employees manage the risks. Most employees receive a salary during their stay at home. Small and medium enterprises are creating an organizational culture to take risks during the pandemic period. Therefore, they should continue to work on post-pandemic ERM practices to gain competitive advantage. The ERM practices they use encourage organizational performance. They should establish ERM practices in this organizational structure. Regarding ERM practices, owners should pay more attention to communication than other practices. Open communication is very important in doing business. Owners should more try to talk openly with their employees, especially during times of crisis. Inviting employees to participate in decision-making and using two-way communication are very useful in their businesses.

If ERM practices are increasingly used in business, the performance of the organization will increase during the crisis. Since uncertainty and risks in Small and Medium Enterprises are increasing over time, risk taking is a common practice in all companies. Small and medium enterprises should adopt ERM practices to effectively manage all risks to protect the value of organizations and stakeholders. The practical application of ERM is only effective and efficient by identifying factors that influence the company's performance to improve its performance. In order to fully strengthen ERM practices, small and medium enterprises should first set a smart goal to prevent risk. They should identify potential risks and be prepared to respond to serious and priority risks. Owners should set up risk response procedures with the cooperation of employees. Owners should support ERM practices to establish a culture of risk management in their organizations.

Among ERM practices, communication is the contributing factor to get the organizational performance. Management should create an open and honest communication program in their organization. This program should implement by

making staff meeting, distributing newsletters, presenting documents on the notice board, and coaching and mentoring employees. The framework for effective communication management can be used by practitioners in all organizations for successful risk management. In the future, the face of risk communications should be widened between their internal communications. Therefore, small and medium enterprises (SMEs) can increase their performance by practicing ERM practices.

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Factors Affecting the Buying Decision Process of Smartphone Users at Shwe Za Loke Quarter

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Abstract : This study focuses on factors affecting the buying decision process of smartphone users at Shwe Za Loke quarter. These survey aims to analyze factors that affected each stage of buying decision process of smartphone users. This study is conducted face to face interview with 198 smartphone users by using cluster sampling method. According to this survey, the affecting factors on problem recognition of decision process are cultural, social, and personal factors. The affecting factors on information search of decision process are marketing-mix, cultural, and social factors. In evaluation of alternatives of decision process, only marketing-mix factors affects on this stage. The affecting factors on purchase decision of decision process are marketing-mix, and social factors. According to this survey results, marketers should emphasize factors affecting on buying decision process of smartphone users. Marketers should sell good quality products with fair price. Moreover, marketers should effectively advertise their products which attracted to the customers.

Key Words: *Problem Recognition, information search, Evaluation of Alternatives, Purchase Decision, Post-purchase Evaluation*

I. Introduction

Nowadays, technology is changing and improving. In these improvements, information and communication technology is also improved. Technology is essential and very important in each sector. People in the worldwide may share information and communicate each other within a few times by using the improved technology.

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Technology has enhanced information and communication to a level undreamed of at it peak. At the new information age, smartphones are applied in various sectors such as education, business, online shopping, research etc. Smartphone has become an integral part of human daily life. With the increasing use of technology for mediating communication, smartphone is used for both personal and organizational use.

Consumer behavior is defined as the behavior that consumer displays in searching for, purchasing, using, evaluating and disposing of product or services that they expect will satisfy their needs and wants. Therefore, understanding consumers' behavior helps marketers to develop their marketing strategies.

Nowadays, consumers have a chance to choice among various smartphone brands with the improvement of smartphone usage in their every movement. Moreover, smartphone users can know daily changing and developing affairs in the worldwide during a few times by using their smartphones. Mostly people are using smartphone in their daily life. Therefore, this research will focus on consumers' buying decision process toward smartphone is influenced by marketing stimuli and external stimuli.

II. Rationale of the Study

Solomon (2007) described consumer buying behavior as a process of choosing, purchasing, using and disposing of products or services by the individuals and groups in order to satisfy their needs and wants. According to Kotler and Armstrong (2010), consumer buying behavior refers to the buying behavior of the individuals and households who buy goods and services for personal consumption.

If a consumer has a problem to buy goods and services, he/she generally passes five stages of buying decision process. If marketers want to gain the positive feedback from their customers, they must understand these five stages. In first stage, why consumers buy (needs &wants). In second stage, how they collect data about products & services. Thirdly, how they assess variety of products. Fourth stage is how they make purchase decision that satisfied their needs and wants. Final stage is whether the buyer is satisfied after a purchase depends on the offer's performance in relationship to the buyers' expectation and they interpret any deviations between the two.

Smartphone users need carefully to choose and purchase suitable smartphones for them. Marketers also need to know how buyers make decision to buy smartphone so that marketers can tailor their market offering to the needs and wants of the buyers. The respondent's decision on smartphone is associated with marketing factors and external factors. These factors are also influenced on buying

decision process of smartphone users.

The study may help manufacturers and distributors to develop the successful marketing strategies. Understanding the consumers' buying behavior and decision process would help firms in formulating strategies to fulfill the needs of the consumers and then would increase market share. Therefore, the main aim of this study is to analyze the factors affecting on each stage of buying decision process of smartphone users at Shwe Za Loke Quarter.

III. Objectives of the Study

This study has two main objectives. They are;

(1) To analyze the factors that affected on each stage of buying decision process of smartphone users at Shwe Za Loke Quarter and

(2) To examine post-purchase evaluation of smartphone users at Shwe Za Loke Quarter.

IV. Method of the Study

In this study, descriptive and analytical research method is applied. The required data in this survey are collected with two types of data. There are primary data and secondary data. The primary data is collected with the structured questionnaire and face-to-face personal interview. The primary data is collected from 198 users of 182 households. There are 910 households in Shwe Za Loke Quarter. Among them, 20% of households in which there is at least one smartphone is chosen by using cluster sampling method. The secondary data are obtained from library, other related research papers from internet websites, journals and articles. The structured questionnaires are used to analyze the factors affecting on each stage of buying decision process of smartphone users at Shwe Za Loke Quarter.

1. Consumer Behavior

Consumer behavior is a wide range of study about the decision making processes that a consumer make at the time of making a purchase. According to Kotler et al. 2009, "Consumer behavior is the study of how individuals or groups buy, use, and dispose of goods, services, ideas or experience to satisfy their needs and wants".

2. Consumer Buying Decision Process

A buyer usually passes through five different stages to reach his/her buying decision. They are problem recognition, information search, evaluation of alternatives, purchase decision, and post-purchase evaluation. A consumer goes through all these stages while purchasing a smartphone. These stages helps buyer to evaluate his/her needs, choose the best one according to his/her need and available resources (budget) and purchase it.

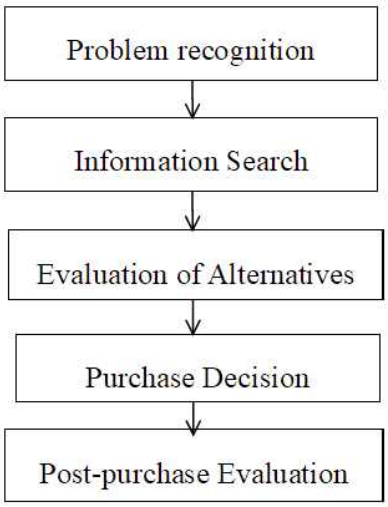

Figure 1 Five-stages Model of Consumer Buying Decision Process
Source: Kotler, P. & Keller, K. L. (2006). Marketing Management (13th ed.).

Problem Recognition: The buying process starts when the buyer recognizes a problem or need triggered by internal or external stimuli.

Information Search: At the second stage of the decision making process, the consumer engages with information search. The consumer can get information from multiple sources by talking with friends or family, reading magazines or using the internet search or handling the product.

Evaluation of Alternatives: After information is collected, the consumer will be able to evaluate the different alternatives. The evaluation of alternatives will vary among customers and purchases. (Wright, 2006)

Purchase Decision: At the fourth stage, the consumer has evaluated alternatives and is ready to proceed to the actual purchase itself. Typically, the consumer's purchase decision is to buy the most preferred brand. There are factors

that can affect the consumer's buying decision such as the attitudes of others or beliefs about the brand created by marketers.

Post-purchase Evaluation:As mentioned earlier, the decision-making process continues after the purchase decision has already been made. The last stage of the buying process is post- purchase behavior. After the consumer has purchased the product, the consumer will evaluate the satisfaction level.

3. Factors Affecting Buying Decision Process

Consumer buying decision process refers to the buying behavior of the ultimate consumer. Consumer buying decision process is influenced by many factors including marketing-mix factors, cultural factors, social factors, personal factors, and psychological factors.

(a) Marketing-mix Factors

The marketing program consists of numerous decisions on value-enhancing marketing activities to use. Marketing activities come in all forms. One traditional depiction of marketing activities is in terms of the marketing mix, which has been defined as the set of tools into four broad groups, which is called the four Ps: product, price, place, and promotion.

(b) Cultural Factors

Solomon (2007) stated that culture, sub-culture and social class are particularly important influences on consumer buying behavior. Culture is one of the most major influencers in consumer behavior.

(c) Social Factors

In addition to culture, social factors such as family, reference groups, and social roles and status affect our buying behavior. Family is one of the most important reference groups and thus a major influence in consumer behavior. Family, social roles and status as well as different reference groups are some of the social factors that, in addition to culture, affect consumer behavior.

(d) Personal Factors

Personal characteristics also influence a consumer's behavior. Examples of personal characteristics include the consumer's age and stage in the life cycle, occupation, economic circumstances, personality, self-concept, lifestyle and values. Values have such a huge impact on consumer behavior.

(e) Psychological Factors

Kotler & Keller (2011) argued that a buyer's decisions are also influenced by psychological factors. A person's buying choices are influenced by four major psychological factors: motivation, perception, learning, and beliefs and attitudes.

V. Analysis on Factors Affecting the Buying Decision Process

In analyzing the factors affecting on buying decision process of smartphone users, regression analysis is conducted to find out which factors effect each stage of buying decision process of smartphone user and how much explain the buying decision process of smartphone users.

(a) Factors Affecting Problem Recognition

To examine the significant factors on problem recognition of smartphone users, the calculated "t" value for each coefficient is examined.

Table 1 Factors Affecting Problem Recognition

Variables	Un-standardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. error	Beta		
Constant	1.168	0.304		3.840	0.000
Cultural	0.146	0.078	0.155	1.867	0.063
Social	0.163	0.057	0.194	2.843	0.005
Personal	0.183	0.072	0.189	2.544	0.012
F	11.653				

Source: Survey data (January, 2018)

Dependent Variable: Problem Recognition

According to Table 1, the F statistics value is 11.653 and statistical significant at 1% level. Therefore, there is 1% significant level and it can state with 99% confidence that social factors has positive effect on problem recognition as observed. According to the results, social factors have strongly effect on problem recognition. Therefore, it can be concluded that most of smartphone users purchase smartphone to contact with their family.

(b) Factors Affecting Information Search

To examine the significant factors on information search of smartphone users, the calculated "t" value for each coefficient is examined.

Table 2 Factors Affecting Information Search

Variables	Un-standardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. error	Beta		
Constant	1.543	0.482		3.199	0.002
Marketing-mix	0.581	0.127	0.348	4.565	0.000
Cultural	-0.210	0.124	-0.148	-1.697	0.091
Social	0.266	0.091	0.210	2.928	0.004
F	6.790				

Source: Survey data (January, 2018)

According to the results, marketing-mix factors and social factors have strongly effect on information search. Therefore, it can be concluded that most of smartphone users get information from sale-staff when they search information about smartphone and family influences also on buying decision of most of respondents.

(c) Factors Affecting Evaluation of Alternatives

To examine the significant factors on evaluation of alternatives of smartphone users, the calculated "t" value for each coefficient is examined.

Table 3 Factors Affecting on Evaluation of Alternatives

Variables	Un-standardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. error	Beta		
Constant	1.418	0.398		3.559	0.000
Marketing-mix	0.565	0.105	0.394	5.376	0.000
F	10.372				

Source: Survey data (January, 2018)
Dependent variable: Evaluation of Alternatives

According to the results, marketing-mix factors have strongly effect on evaluation of alternatives. Therefore, it can be concluded that most of smartphone users mainly evaluate price of smartphone than other factors among various alternatives.

(d) Factors Affecting Purchase Decision

To examine the significant factors on purchase decision of smartphone users, the calculated "t" value for each coefficient is examined.

Table 4 Factors Affecting Purchase Decision

Variables	Un-standardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. error	Beta		
Constant	0.422	0.279		1.513	0.132
Marketing-mix	0.525	0.074	0.439	7.129	0.000
Social	0.316	0.053	0.349	6.004	0.000
F	30.724				

Source: Survey data (January, 2018)
Dependent Variable: Purchase Decision

According to the results, marketing-mix, and social factors have strong effect on purchase decision. Therefore, it can be concluded that when most of smartphone users make decision to buy smartphone, they mainly consider price of smartphone and they purchase smartphones with the help of family.

VI. Findings and Discussion

The main purpose of this study is to find out which factors affect on the consumer buying decision process of smartphone users at Shwe Za Loke Quarter. Concerning the marketing-mix factors, being product that its price is appropriate with the quality mostly influences on buying decision of majority respondents. And then brand name and beautiful design influence on most respondents. At the cultural factors, most of respondents are purchased smartphones because of the needed for their daily life. At the social factors, family mostly influences on the buying decision of majority respondents. At the personal factors, buying decision of most respondents are influenced by the usefulness while communication with others and then appropriateness with their occupation. At the psychological factors, buying decision of most respondents are influenced by getting update information by using it and essential need for them.

The influencing factors on problem recognition are cultural factors, social factors, and personal factors. Most of respondents need to buy smartphone to contact with their family and friends. Moreover, they need smartphones to use in their business and also to use in their daily life. The influencing factors on information search are marketing-mix factors, cultural factors, and social factors. Only one factor, marketing-mix factors influence on evaluation of alternatives. Most respondents mainly evaluate price of smartphone than other factors. The influencing factors on purchase decision are marketing-mix factors, and social factors. When they make decision to buy smartphone, they look at price, brand name, and voice quality. Moreover, they

take the help of family. In examining customer satisfaction on their purchase decision (after using smartphone), customers are satisfied on their purchase decision because they can easily contact with others, and getting required information in a few times, getting more benefits than costs, and having long-lasting battery. Customers are satisfied on their purchase decision but they do not desire to repurchase smartphone. Therefore, marketers should try to attract existing customers and new customers to be loyalty customers that is followed the modern age.

VII. Suggestions and Recommendations

According to the finding of this survey, concerning the problem recognition, most of respondents purchased their smartphone to easily contact with their family and to use in their business. Moreover, most of respondents want to buy smartphones for using Facebook, Viber, and to do other social chat and to use in education. Therefore, smartphone companies and distributors should produce and sell smartphones with good phone-line quality, good voice quality and good internet connection in everywhere. In this part it is found that advertisements could not attract the customers. Therefore, marketers should try to be the advertisements more attracted to the customers. According to the finding of information search, most of respondents got information from friends and their family. Therefore, marketers should set to get good reputation among customers and should train sale-staffs who explain the best to understand by customers. Commercials do not effect on the customers and only a mite influence on their purchase decision. Therefore, marketers should advertise their products effectively to attract the existing customers and new customers.

Concerning the evaluation of alternatives, most of respondents are mainly considered the price of smartphone. Therefore, marketers should emphasize on not only to look for their benefits but also to consider for the price that is suitable with the product' quality. In the finding of purchase decision, most respondents make decision to purchase smartphone that have reasonable price. Therefore, marketers should emphasize on to give good quality product appropriate with price and information to attain the first place in customers' mind. Moreover, having good battery quality, colorful, slightly and having warranty also influenced on purchase decision of customers. Therefore, marketers should try it. As a result, marketers can get the competitive advantage among their competitors.

According to the results, cultural factors, social factors, and personal factors effect on problem recognition. It means that they need to take smartphones in everywhere

they go and every movement. Moreover, they buy smartphones to make social chat with family, friends, and others. Marketing-mix factors, cultural factors, and social factors influence on search information. It can be said that while most customers gather information to buy smartphones, they mainly consider price, how much benefits can get from that, and attain information from their friends, family and other experts. Marketing-mix factors only effect on evaluation of alternatives.In this evaluate section, although customers are considered various alternatives, they mainly evaluate on the price of product. Therefore, marketers should produce fair-price products. Marketing-mix factors, and social factors effect on purchase decision. It can be said that customers like colorful, slightly, famous brand and also look fair-price product. Concerning the post-purchase evaluation, most of respondents are satisfied on their purchase decision because they can easily contact one another in everywhere and having long-lasting product. But most of respondents do not desire to repurchase smartphone. Therefore, marketers and distributers should try to more attract on customers. Moreover, marketers should produce good battery quality, good voice quality, and good phone-line quality. Besides, marketers should more emphasize on customers' satisfaction after using their products and the prospect to repurchase their products.

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Establishment of Insurance Professional Functions for the Development of Myanmar Insurance Industry Reflecting Experiences in South Korea

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Abstract : This paper is the study of the functions, which effect the development of the Myanmar insurance industry, the objective and aim of the research, and the requirements, which must be fulfilled in the early stage of development. As the current Myanmar insurance industry is in its initial development stage, implementing sound licensing practices, dealing with the lack of technical and operational expertise in the market for insurance process, and applying strong regulatory and supervisory framework are required. On the other hand, increasing smartphone penetration and the greater use of mobile payment systems highlight the potential of digital platforms to increase insurance uptake in the longer term. However, in the short term, the focus appears set to remain on the improved use of technology within companies themselves. So, implementing a professional function is the key role in the Myanmar insurance industry. These functions were the foundation of the development of the Korean insurance industry. It is found out that the Myanmar insurance industry should utilize professional functions reflecting Korea's experience. This paper is a qualitative case study of a policy process using a mixture of participant observation and a review of public sector, media and historical records and policy documents. Based on a systematic search of available literature, this review investigates the potential and actual support of Myanmar's insurance industry. The review reveals that the establishment of an infrastructure; and a development strategy under the government's initiative is necessary, rather than allowing each individual insurance company to build to their own capacity.

Keywords: *Insurance professional function, Refelcting experiences, Myanmar Insurance Industry, Property and Casualty Insurance (P&C), Korea Insurance Development Institute (KIDI), Databased (DB)*

I. INTRODUCTION

1. Background of the Research

The insurance sector plays a critical role in financial and economic development. By introducing risk pooling and reducing the impact of large losses on firms and households, the insurance sector reduces the amount of capital that would be needed to cover these losses individually, encouraging additional output, investment, innovation, and competition.

The current Myanmar insurance industry could be considered to be in its initial development stage. Just as infrastructure in roads, factories, and professional workers are required for a nation's economic development, infrastructure in the insurance industry must be established for it to develop. There are three prerequisites for developing an insurance industry in a country: income, awareness, and infrastructure.

A country's economic growth boosts insurance development and the insurance sector fosters economic activity. To increase social awareness of insurance is to make people accept insurance as necessary to their daily lives. Policymakers have an important role in enhancing awareness. The Korean government enacted many policies to enhance public awareness, such as compulsory savings accounts, compulsory insurance, tax incentives, and consumer protection measures.

Infrastructure is the foundation needed to support the operation and development of an insurance system. Insurance professionals, statistics & IT systems, and insurance supervisory systems, are the three main infrastructures necessary for the growth of an insurance industry. Most Myanmar insurance companies are in the initial stages of development, and operate in a small-sized market. It is therefore difficult for them to analyze risks adequately with their own experience data, alone. Because of this, they are experiencing difficulties in pricing, underwriting, and claim management.

2. Objective of the Research

The objectives of the research are to study the functions, which effect the current Myanmar insurance industry, and the requirements, which must be fulfilled in the early stage of development, are included. As the current Myanmar insurance industry is in its initial development stage, the need to implement sound licensing practices, the lack of technical and operational expertise in the market for insurance processes, the need to apply the strong regulatory and supervisory framework are required.

II. LITERATURE REVIEW

1. The need for professional functions for the development of the insurance industry

The insurance sector plays a critical role in financial and economic development. By introducing risk pooling and reducing the impact of large losses on firms and households, the insurance sector reduces the amount of capital that would be needed to cover these losses individually, encouraging additional output, investment, innovation, and competition.

There are three prerequisites for developing an insurance industry in a country: income, awareness, and infrastructure. A country's economic growth boosts insurance development, as well. Higher income means stronger buying power. In a nutshell, the insurance sector fosters economic activity, and vice versa. Then what drives the development of an insurance industry, other than the income level of its consumers? Based on our own experience with the development of our insurance industry, we concluded that there are two key factors that can boost the growth of an insurance industry: social awareness of insurance and a well-developed infrastructure.

To increase social awareness of insurance is to make people accept insurance as necessary to their daily lives. Policymakers have an important role in enhancing awareness. The Korean government enacted many policies to enhance public awareness, such as compulsory savings accounts, compulsory insurance, tax incentives, and consumer protection measures. While the first two policies are mandatory, the other two policies encourage citizens to buy insurance voluntarily, by giving monetary benefits and raising confidence in the insurance system.

Infrastructure is the foundation needed to support the operation and development of an insurance system. Insurance professionals, statistics & IT systems, and insurance supervisory systems, are the three main infrastructures necessary for the growth of an insurance industry.

The objectives of a supervisory system are consumer protection, managing the soundness of the insurance industry, and maintaining balanced development between insurance and other industries. Because the insurance industry is operated based on statistics, the construction of infrastructure for the utilization of insurance information is as essential to the development of the insurance industry as the establishment of a supervisory system and insurance expert cultivation. Insurance information is the blood that runs through the veins of the insurance industry and supervisory institutions; it is what enables them to function properly.

The insurance industry sets product prices based on predictions of future

probable risks. In order to predict these risks, insurance companies require enough statistics, data, and expertise to analyze and manage the risks. Because there is a severe lack of experience and knowledge in the initial stages of any industry's development, any support, from the viewpoint of the industry as a whole, is very helpful for the industry's sound growth. In addition, an IT system through which insurance companies can share accumulated industry-wide information is a very efficient tool for ratemaking, risk analysis, underwriting, and claim processing. Insurance companies can enjoy cost-saving benefits through co- operation in the development of their own systems.

A professional insurance research organization which researches insurance systems necessary for the industry will be a huge help to the development of the industry, as the government and the insurance industry can introduce new systems or update current systems, as desirable. Because product development, sales, underwriting, and claim management are all fields requiring high expertise, the insurance industry is in constant need of professional salesmen, actuaries, underwriters, claim adjusters, and risk analyzers. Therefore, training professionals is a critical factor in both the growth of the insurance industry, as well as the growth of the nation.

2. Outline of the Myanmar Insurance Industry

In Myanmar, the insurance business started in 1826. After Burma National insurance had been nationalized in accordance with the Insurance Company Nationalization Act, the Union Insurance Board was founded on March 1st, 1952. On that day, the Union Insurance Board started to underwrite compulsory Government Service Personal Life Insurance and Military Personal Life Insurance.

The market was operated as the Uni-Polar Market by Myanma Insurance (MI) from 1952. Until 2013, state-owned Myanma Insurance Enterprise was the only player in the market, but starting from 2013, 11 private local insurance companies have been granted licenses. 27 foreign representative offices from 13 different countries are authorized and 3 Japanese companies have been permitted in the Thilawa Special Economic Zone (SEZ). In 2019, the government approved five foreign insurers to open wholly-owned life insurance subsidiaries. With regard to law in the insurance sector, the Myanmar Insurance Law (1993) empowers Myanma Insurance to engage in all insurance business activities. Insurance Business Law, which was enacted in 1996, and subsequently, the rule for that law was also issued in 1997.

Regarding the liberalization roadmap, foreign companies have been approved to enter the market. Consequently, fair competition, protecting policyholders, and the stability of the local insurance business are derived due to a liberalized market in Myanmar. The entry of foreign insurance companies will have a positive effect on

the development of the Myanmar Insurance Industry because they can bring technology, capital and expertise. In 2016, the government granted foreign insurers the ability to enter the life insurance market through fully-owned subsidiaries, and both the life and non-life insurance segments through six joint ventures with domestic and international firms. Three out of the six joint ventures are life, and remaining three are non-life segments. The Ministry of Planning, Finance and Industry (MOPFI), the Insurance Business Regulatory Board (IBRB), the Financial Regulatory Department (FRD), and the Myanmar Insurance Association (MIA) have taken part in the crucial roles in the insurance industry.

3. Review on the current status of dealing with professional functions in the Myanmar insurance industry

In order to apply the professional functions to the Myanmar insurance industry, it is needed to understand how they work to develop the insurance industry by connecting them to each other.

I) Supervisory Function
ii) Statistic and Information Function
iii) Insurance Research Function
iv) Training Function

4. Industry's Needs on Insurance Professional Organization

Insurance companies, above all else, need to co-use of industry-wide insurance information and the training of insurance professionals.Considering the current status of the Myanmar insurance industry, we believe that the co- use of industry-wide insurance information is the critical factor for achieving adequate and accurate risk analysis, pricing, underwriting and claim management. The insurance industry is deeply concerned about the probable deterioration of insurers' solvency and confidence due to current price competition.

In addition, companies are very interested in opportunities to train their professionals in the skills needed to enhance their work. Areas of interest lie in most insurance processes; from actuarial work, to product development, to underwriting, and marketing and sales.

The insurance industry as a whole needs research related to various topics for its development, including new product development, new government policies for insurance companies, strategies for insurance industry and risk analysis.

5. Implication

Myanmar must improve the function of its accumulation and use of insurance statistics and information. Adequate risk analysis and pricing in insurance requires reliable statistics. Because Myanmar is in its initial stage of insurance industry development, it is very difficult situation for individual insurance companies to predict future claims and to set prices adequately with their own experience data alone. Above all, the Myanmar government and its insurance industry must understand the required statistics and information from the viewpoint of industry-wide development and make a plan to manage them effectively.

Required statistics and information varies by use: solvency monitoring, operation management, ratemaking & risk analysis, and contract & claim management. The Myanmar government has not mentioned the need for a research institution. However, it is time for policymakers and insurance supervisors to have a domestic research supporting system in place to help with introducing new advanced insurance systems or updating current systems. There are two options: one is a government-sponsored organization, such as an independent organization or division of the government, the other is to get support from currently available insurance institutes.

The training of insurance professionals can be executed by individual companies. However, the training for the many functions necessary to run an insurance company - such as product development, underwriting, risk management, claim adjusting, and marketing & sales. It will be helpful to set up a training function, which educates the human resources necessary for the Myanmar insurance industry as a whole.

In the case of the insurance research function, it is of course necessary for insurance companies themselves to pursue their own product development expertise; however an industry-wide professional research organization for developing new products, introducing new insurance systems, updating current systems, etc., would play a critical role in the future of the industry's progress.

III. ESTABLISHMENT & MANAGEMENT OF P&C INSURANCE DB

1. Necessity to Reinforce P&C Insurance's Data Management

It is evaluated that within the Myanmar property & casualty insurance database, driver's mandatory insurance data like name, driver's license number, vehicle identification number, etc is managed in a particularly special and efficient way. Usually, insurance data is managed by individual insurance companies, who then

send the data to related organizations.

The Myanmar insurance industry has been recently seeking very compressed development, enacting the obligation of purchasing mandatory driver insurance, promoting the vitalization of P&C insurance, etc. Thus, many efforts from various fields are being put forth to reinforce the related infrastructure, such as legal and systemic infrastructure. Advanced, developed data management used in a shared insurance database should not be limited to mandatory driver insurance. Voluntary automobile and general insurance data are managed only through individual insurance companies. However, this is insufficient for improving insurance systems and calculating premiums. Especially when too many P&C insurance companies compete in proportion to the size of the market, calculated premiums become very unstable because individual insurance companies calculate insurance premiums with small amounts of data. If price- competition becomes severe, companies could set pricing irrationally, calculating premiums strategically based on the conditions of their competition, rather than by statistics.

There must be an effort to establish a shared database for voluntary insurance businesses based on the experience of mandatory driver insurance. Also, there must be a reinforcement of Myanmar P&C insurance companies' databases in order to protect the insured and enhance companies' efficiency. With this condition, there is a necessity to set reasonable premiums and pay reasonable benefits when accidents happen. The policymaking authorities or insurance companies must constantly grasp market trends, and use them as a basis to improve the insurance system when the authority is needed.

To look at this in depth: First, there are too many insurance companies competing compared to the size of the current Myanmar P&C insurance market. Small-sized insurance companies have very few insurance contracts, which make a very unstable basis for them to set premiums when using their data alone. By strengthening a database and letting the data be shared, individual companies will be able to make a rate with a sound statistical method. In some cases, the average premium rate could even be set to a reference rate, and insurance companies with few contracts could use this as a guideline.

Secondly, the accumulation and sharing of data can promote appropriate insurance benefits. This has a dual effect: causing the insurer to pay sufficient insurance benefits, and preventing excessive insurance benefits from being paid by insurance companies. In this way, insurance companies can also check whether they can pay reasonable insurance benefits or not when claims occur. However, insurers must monitor afterwards whether or not they are paying excessive insurance benefits due to insurance fraud.

Lastly, the insurance supervisory authority and insurance companies both use a

main statistic index to continuously observe the trends of the market. The supervisory authority must quickly deal with irregular symptoms found in the trends of the insurance market, such as insurance companies' low solvency margin ratio. As stated before, the Myanmar insurance industry is seeking compact development, which means constantly looking for new ways to improve the system by, for example, researching and introducing new advanced systems. In this premise, analysis based on statistics becomes concrete evidence when judging whether the system needs improvement or not. Main market statistics is an important financial indicator for insurance companies, because insurance companies must use the index to constantly monitor their position and their competition's position in the market, and to modify their business strategies at just the right times.

2. Korean Experience and Issues

1) Background and Basis of Database Establishment

In South Korea, KIDI was established in 1983, to collect and use P&C insurance data. KIDI began collecting data of major products such as automobile insurance including compulsory automobile liability insurance, fire insurance, and marine insurance. The main purpose of data collection from insurance companies was to form databases to which industry can get information about different customer-related trends and patterns. In the initial stages, statistics were collected on a simple form for several insurance products only, as mentioned above. Later, as the amount of data increased, computerization was pushed forward to collect data by individual cases. Lines of business data collected by KIDI have been expanded to worker's compensation, engineering, liability, comprehensive insurance, etc., and computer-processed statistics became standardized in 1998's information system renewal. The basis on which KIDI established its database for ratemaking and statistical analysis was the Korean Insurance Business Act. This law set the basis for supervision of the business conduct for insurance companies, and set forth the role of relevant agencies, such as KIDI.

2) Composition and Operation of Line of Business Database

(1) Collection of Raw Data

KIDI began automobile insurance raw data accumulation in 1985. The raw data of P&C insurance began accumulation in 1987. These days, automobile insurance data is classified into two types: contracts and claims data collected monthly; as is the same for fire insurance. Marine insurance data is divided into hull insurance and cargo insurance data, and these lines of business are also collected monthly, with contract

and claim data separately. Within accident insurance, various types of data are compiled, such as general accident insurance and overseas travel insurance. Additionally collected are worker's compensation insurance, engineering insurance, liability insurance, comprehensive insurance, and burglary insurance data. There are currently nine different databases being compiled. Details are shown in the table below:

Table 1. Status Quo of Korean P&C Insurance Databases

Insurance	Classification
Fire	Houses, Factory, Others
Marine	Hull, Cargo
Automobile	All Automobiles
Engineering	Machinery, Assembly, Architecture, Electronics
Workers' compensation	Domestic/Foreign, Sailor, Job Training
Liability	Commercial General Liability, Product Liability, etc.
Accident	General, Overseas, Student Safety
Comprehensive	Inland Floater
Others	Burglary, Damage from Storm and Flood
Long term	All Long Term

KIDI initially collected data from insurance companies using simple forms. Data was next stored on magnetic tape (MT), or real tape, and then sent to KIDI. This method was maintained for a while, but with advances in information technology, and the emergence of information security as an important social issue, an internal network of information exchange was established. Today, the INTAS (Information Transmission Automatic Service), a dedicated internal network, is used for information exchange. Using the internal network prevents information leakage, strengthens security, and reduces the cost and time of sending data by using a network. The INTAS thus greatly enhanced KIDI efficiency.

(2) Making Relevant Databases

Raw data is received and turned into a database according to the layout of the insurance company's line of business. Turning data from an insurance company into a database occurs in the following process: receiving the raw material, searching for errors through editing, returning incorrect data to the insurance company, receiving and editing the data again, and transforming the data into a database. Among these processes, the editing process, the process of searching for incorrect data, is the most important.

When an insurance company uses INTAS to send its data, KIDI must first perform an error check to determine whether to receive or return the data. First KIDI edits by doing a basic physical error search, and then, a logical error search by performing a range check, cross check, balance check, etc. After KIDI chooses to accept the data, the data is written in the database within KIDI, and it is divided into the Database and Data warehouse, which are used to calculate premiums and analyze statistics.

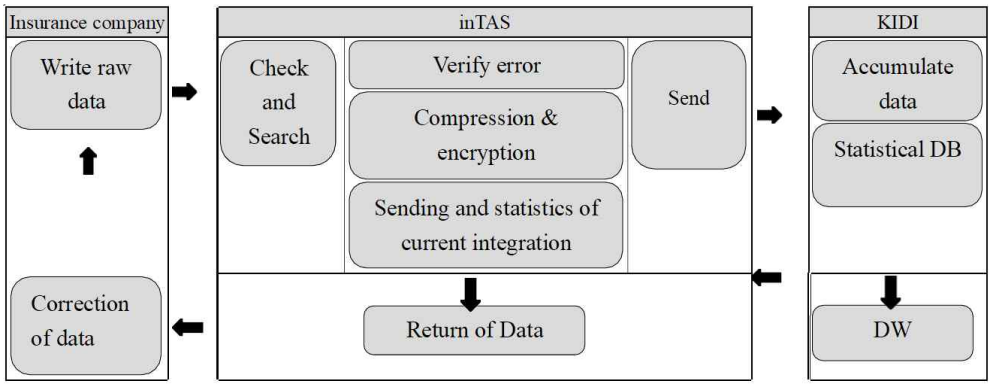

Figure 1. Flow of receiving DATA

3) Usage of Database

The database is established according to line of business, and is used to calculate and verify insurance premiums, and manage insurance product costs. In addition, the database can be used as a reference for underwriting when insurance companies write contracts, and as evidentiary data for checking claim payments. The database also can hold evidence for the policy engine and supervisory institution when making political decisions and improvements to the system, when needed. KIDI uses the database above to produce all sorts of statistics, such as business operations, risk classifications, ratemaking, etc.

By connecting insurance companies with the insurance information network, KIDI supplies data for insurance companies with which they can analyze data such as claims, merit-demerit information, and joint underwriting, and even make insurance contracts.

(1) Ratemaking

KIDI does the ratemaking for P&C insurance and other lines of business based on its collected data. KIDI can also combine national statistics and other statistics for use in ratemaking. When KIDI was first established, insurance companies used the

rates that KIDI made based on this system, and earned approval from the relevant authorities. As the insurance market was vitalized, however, the rates that were once made by KIDI and provided to insurance companies were deregulated, beginning in 2001. In this way, the role of KIDI has changed. Now by using all of the industry-wide experience data, KIDI calculates the reference premium rate, checks its verification annually, and provides it to insurance companies. KIDI provides a calculated merit-demerit rate for automobile insurance, hull insurance, cargo insurance, and workers' compensation insurance. To set the merit-demerit rate, the contract data and insurance compensation data of individual policyholders must be collected. Although KIDI's role changed with the maturation of the insurance market, it still performs the function of maintaining a scientific system of ratemaking in Korea, and provides guidelines for insurance companies and the government.

Aside from reference premium rate calculations, there are many regulations to maintain fair premium rates and prevent excessive competition between insurance companies in Korea. Insurance companies generally freely decide the premium rates for products. However, in special occasions rates must be approved by the supervisory authority. For instance, where there is a premium calculation that does not have experience statistics or objective statistical data background, or when a premium price increases or decreases more than 25% from the original premium rate, prior approval from the supervisory authority is needed. All statistical data for calculating premium rates is required to have duration of over 5 years, and the maximum range of a changing premium rate is defined in the regulations. For certain cases, insurance companies must have the adequacy of their premium rate approved by an outside agency.

(2) Supporting Underwriting and Verification of Insurance

KIDI uses collected data to support insurers' underwriting claim management. Insurance contracts and claim data are provided to check whether a person has double policies with the same coverage, and whether a person has caused many accidents for fraud. In addition, through insurance fraud prevention methods such as the analysis of medical expenses at medical institutions, or fraud detection methods in the Insurance Claims Pooling System (ICPS), KIDI supports claim management staffs, such as an insurer's special investigation unit, to find fraud effectively.

(3) Proposal of Insurance Industry Statistics

Accumulation of statistics is not only used for setting adequate premiums and verification measures. The data can also be used to support product development. Because insurance risks have a tendency to differ by region, occupation, gender, and age, KIDI compiles and provides statistics based on region, the insured's occupation,

sex, and age, to help the reasonable consideration of these factors during product development. An individual company's statistics show only a partial view of the overall insurance industry market, which could cause distortions for them in the analysis of statistics, and in premium modification results. There is a great necessity for a comprehensive view of the insurance industry's statistic results. The provision of these statistics by KIDI is a main reference for small and mid-sized companies.

KIDI's work is delegated into the regulation of supervision (standard amount of damage and calculation of indemnity earnings ratio), assisting policy-making authorities in the improvement of the related system and managing insurance soundness, and constantly monitoring changes in the market environment. Also, in order to enhance accessibility, KIDI created a system named INSIS, Insurance Statistics Information Service, which allows insurance companies to check and print out the statistics they need. INSIS also contains the Summary DB, a tool for analyzing statistics, allowing insurance companies to freely calculate statistics as needed.

(4) Management of insurance companies' financial solidity

The supervisory authority, through the standard reserving system, requires insurance companies to save more than a certain level of reserve, in order to secure a minimum solvency margin. Also, when insurance companies calculate minimum reserve amounts, they must use standard rates.[7] KIDI uses collected experience statistics to calculate and provide standard rates for coverage. These measures enhance financial solvency, and lend to the protection of the policyholders. The Korean supervisory authority requires insurance companies to possess a certain level of capital assets in case unexpected losses incur. This is called 'Risk Based Capital (RBC)'. This policy requires insurance companies to not only prepare necessary funds to pay policyholders in times of need, but also to possess a certain degree of additional net assets in order to insure solvency. Solvency serves as a buffer, or surplus, which allows insurance companies to prepare for unexpected risks. The solvency system has thus operated in multiple forms in the past, but recently has switched to a RBC method, which can analyze the comprehensive risks insurance companies' face, by evaluating various factors.

Focusing more specifically on changes over time in risk assessment of the solvency system, insurance companies were initially required to possess a certain amount of capital funds regardless of their size or business conditions. Later on, since risk has a correlation with premium reserves or risk premiums, the system was changed to secure a certain amount that must be proportional to premium reserves

7) Insurers calculate their standard reserve using standard rates

and risk premiums. Currently, the system has been modified to consider various risks that insurance companies face, such as insurance risks, interest rate risks, market risks, credit risks, operation risks, etc. Now risk assessment of the solvency system must not only evaluate premium and reserves, but also indexes of business performance, such as loss ratios, the shares of interest rate-linked products, credit rankings, default rates, shares of variable insurance, and even some management indexes, for instance appropriateness of internal controls and accident prevention system must be included in the evaluation.

IV. PROPOSAL FOR MANAGING AND ACCUMULATING MYANMAR'S P&C INSURANCE DB

1. Roadmap

The P&C insurance market in Myanmar continues to show development, but there is intense competition among insurance companies. In addition, because P&C insurance is divided into mandatory driver's insurance markets and voluntary insurance markets, there are large differences in premium calculations and database processing methods. The voluntary insurance market database development plan must consider these differences and should be promoted with the following four steps as its roadmap.

First, the purpose of industry-wide statistics use must be well defined and mutual understanding between insurance companies should be formed. There are multiple reasons for collecting statistical data; however, purposes must be prioritized by necessity of utilization within the insurance industry. This allows involved insurance companies to show continued interest and support more easily, and allows increased utilization of the statistics in the future. As seen in the case of Korea, KIDI started collecting statistics with the purpose of ratemaking, which insurance companies needed to execute insurance contracts, and eventually increased their range of statistical data utilization.

However, forming mutual understanding between insurance companies in the early stages of promoting data accumulation could prove challenging. At the least, there must be agreement in the general direction of promotions. In the case of Myanmar, agreement among insurance companies is not expected to have any problems since there is the experience of the mandatory driver insurance database construction.

Unlike mandatory insurance, individual insurance companies have formed voluntary insurance databases freely, so there are notable differences from the mandatory

driver insurance database. To develop a comprehensive database, insurance companies might need to add extra fields into their own database, and there is great possibility of requiring additional funding to develop a sufficient data transport program and data processing infrastructure.

Secondly, preparation of the legal basis for data accumulation and exchange must be considered while promoting a database construction plan, because accumulated data more often than not involves personal information, which requires protection. In order to eliminate potential problems in the long term of using personal information for public purposes to develop and sell insurance products, constructing a legal basis for related fields and the strict management of personal information protection is required.

Third, database construction processes are required, such as selecting data accumulation categories and standardizing the accumulation process. These processes must reference an accumulation information selection manual on the MIIS (mandatory information insurance system) written by the Myanmar Association of Mandatory Insurers. P&C insurance data accumulation must initially focus on 2-3 specific type of insurance that have a large market or the potential to expand in market size in the future, which have a large effect on the public. Data must be accumulated to construct a database of a few types of insurance only, at first, and then data accumulation can expand into other areas of P&C insurance, gradually.

Lastly, after established data has been stabilized, seeking ways to increase the efficiency of utilizing the information must begin. First, research must begin to determine whether expansion in the range of data accumulation is necessary to meet the demands of insurance companies, and the insurance supervisory authority. Once the database has spread in range, all statistical data must be utilized fully to meet insurance industry demands. After insurance industry demands have been met, the management of uninsured persons and insurance fraud prevention systems must be established to further accelerate the usage of statistical data, by collaborating with outside related organizations (most often the government).

From this point on, working-level database construction and utilization methods will be analyzed using previously mentioned database development directions as the roadmap.

2. DB Establishment and Utilization

As stated above, Myanmar's insurance premium calculating system, in the case of driver's mandatory insurance, is a single-rate system managed by the government, while voluntary insurance has a ratemaking system managed by each insurance company, individually. Therefore, the necessity of insurance premium calculations

through risk analysis is much greater for voluntary insurance. However, most P&C insurance contracts are for business entities, so the number of risk exposures is few. Moreover, in the case of small and medium-sized companies that only have a few contracts, risk measurement target cases are even fewer. The calculation of premium rates using a company's own statistics is almost impossible if the company's insurance contract cases are few or non-existent. If a small amount of the company's own data is used or an external database is utilized to calculate premiums, there is a possibility that calculated premiums could be unstable, excessive, or underestimated.

The problem of a lack of data in lines of P&C insurance is not unique to Myanmar's P&C insurance market. Because other countries, including Korea, have all faced the same problem, they have strived to accumulate P&C insurance statistics into one common resource for insurance companies to use and to suggest standard premium rates. Now Myanmar must also make an effort to accumulate all of the statistics within its P&C insurance industry, and through that effort calculate the industry-wide average premium (reference premium rate) with the purpose of calculating reasonable premiums.

In the case of voluntary general insurance, however, because there is no data sharing system in place, setting data accumulation categories and the standardization of compiling methods are both necessary in order to make premium calculations. It is also necessary to refer to the data accumulation category of the MIIS (Mandatory Information Insurance System), the current mandatory driver insurance data processing system, while collecting the data for insurance premium calculations for P&C insurance. However, some of the system's applied categories require the supplementary details below.

First, because only the minimum information related to contracts and claims paid is currently being accumulated, it is necessary to expand the target information for accumulation. That is, in addition to information that is not related to ratemaking - such as the name of the insured, address, phone number, email, etc - categories that enable comprehension of risk characteristics of targets in insurance contracts, such as policy holder characteristics (gender, age), insured object characteristics (location, type of business, size of the business), etc., should be added. In the case of Korean fire insurance, for instance, contract data includes coverage, type of building (house, apartment, factory, etc.), type of business (inn, office, restaurant, etc.), type of factory, building structure, location of building, and presence of a fire extinguishing system, as well as details such as the insured, policy period, insurance premium. Claim data fields are similar to those of contract data. The database for premium calculations of insurance should thus be composed of categories that can extract the insured's degree of accident occurrence risk (accident occurrence

frequency and severity).

Second, the method of standardization of database categories requires supplementation. In mandatory driver insurance, coverage does not differ for every insurance company, which makes standardization possible. In voluntary insurance, however, product types and premiums vary by company, so it needs to be identified if there is a common coverage for all companies. Coverage differs greatly by product, even in the same lines of business, so it is necessary to arrange an accumulation standard with a center on common coverage, rather than product category.

Third, the categorical method of accumulation should be code mode, rather than character mode, and the database should be designed so that matching between contract and claim paid data is possible. Database build-up operations are only possible through coding and matching between contract and claim data, and are an important factor in risk evaluations, such as loss-ratio calculations. Additional management of premium and claim-paid categories is necessary for matching between contract and claim data. Because insurance premiums characteristically follow a prepaid system, it is necessary to manage data by calculating earned premiums at the point of data extraction as well as premium income, so that only earned premiums are calculated. Categories such as partial payment and outstanding other than final claim-paid data, should be accumulated. Because the amount of damage claims paid should be managed according to accrual basis accounting principles, it is necessary to accumulate data by categorizing outstanding (reserves) and final claims paid at the point of accident occurrence. That is, if an accident occurs, the amount of damage should be calculated at the point of accident occurrence by adding outstanding (estimated claims paid), and because the first accumulated estimated claim-paid amount can be corrected later, the two should be categorized separately when managed.

Fourth, the database should be subdivided by objective when managed. It is necessary to separate the database into contract and claim data, after which the database can be further subdivided by coverage, as needed. In the case of Korean automobile insurance, because the contract database requires categorizing risk depending on coverage contents, the database is separated into two different categories: bodily injury damage and property damage coverage. The database is also categorized by bodily injury damage accidents and property damage accidents, and further categorized into cases by the insured or by the driver. Such data processing serves to distinguish premiums and claims paid by policyholder or driver's characteristics.

As shown above, it is necessary to extract and provide accumulated statistics to insurance companies for their premium calculation. If the supervisory authority or

authorized institutions evaluate the adequacy of premiums that insurers are applying, or at least provide objective premium rate guidelines, individual insurance companies will be able to calculate premiums much more reasonably. This ultimately protects not only the insurance companies, but the insurance consumers as well. It will allow insurance companies to operate better businesses, and consumers to purchase insurance at more reasonable prices that had better match their risk levels. The Myanmar P&C insurance database analysis flow chart and database composition system's concept map are suggested as follows:

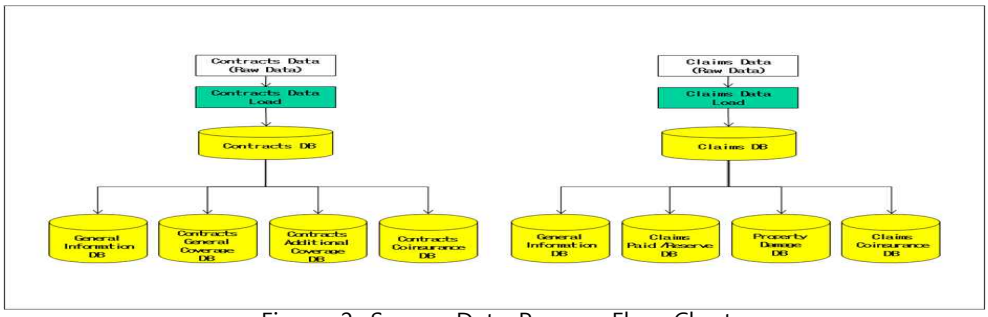

Figure 2. Source Data Process Flow Chart

Management by vision of objectives, such as ratemaking, system improvement, and market trend analysis, is shown in figure 2.

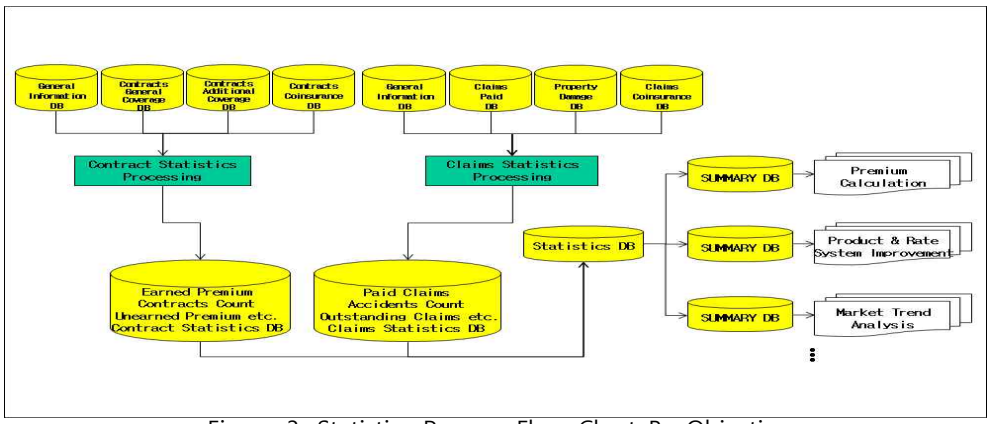

Figure 3. Statistics Process Flow Chart By Objective

3. Contract & Claim Management

Myanmar's P&C insurance industry has demonstrated a rapid growth trend in the past three years. As seen above, premium incomes of the last three years show approximately a 17% growth, and the number of accidents and claims paid show an average of 40% to 60% growth. Considering the rapid growth of the market, it is more necessary now than ever for Myanmar insurance companies to fully utilize insurance information to examine in advance the appropriateness of insurance contracts and claims paid. Korea, as well, uses insurance industry information for contract and claim payment evaluation, centered on mandatory insurance products and other products of high demand (auto insurance, accident insurance, etc.).

Underwriting information can be provided in relation to the contracts. This is a common method referenced when setting a marketing strategy, used for example to evaluate the risk of a certain class, or the company's target consumer. The method of subdividing to distinguish unruly policyholders that make frequent claims or have higher risk evaluation scores than average policyholders can be used to share specific case information between insurance companies.

For the examination of claims paid, examination-supporting data can be made into a rough index, centered on evaluation and individual cases.

In Korea, in order to share examination data related to claims paid between insurance companies, the data calculated by KIDI is provided to insurance companies and the supervisory authorities. Also, the ICPS was constructed to administer contract and claim data as a DB, and to provide insurance claim tendencies by analyzing the data periodically.

In order to conduct the underwriting and examination of claims paid, it is necessary to modify and reinforce existing accumulated data. The establishment of a DB through the categorization of contract and claim data separately, and the step-by-step reinforcement of the categories needed for insurance contract and claim paid evaluation, are both necessary. In order to distinguish between policyholders with general risk and those with unusual risk, past policyholders' records and insurance claim tendencies should be consistently managed, and other than insurance statistics, related external statistics should also be reinforced.

However, reinforcing statistics categories with the purpose of insurance contract and insurance claim paid evaluation is not an easy task to take on during the early stages of database construction. It is difficult to expand accumulation categories during the early construction process, and it can be challenging to achieve a high level of accuracy of data.

Therefore, in the early stages, it is necessary to set data items at a level where the analysis of the main characteristics of policyholders' contracts and claim data is

made possible. That is, categories focused on data related to claim paid should be expanded, however items should be set which show the process of the claim paid and the change of reserves, instead of only showing final claim results. If only the final claim paid data is managed, it is impossible to know the details of the process of payment for specific cases, such as the characteristics of insurance claims paid according to injury level, the amount of payment in relation to accident degree, and the amount of processing time from the day of the accident.

If it is made possible to clearly see if an insurance company is taking the proper steps for a claim paid in an insured accident, and whether they paid a proper amount to the victim and property, later, it would be possible to utilize this instance as reference data for future judgments of claim paid examinations, by comparing statistics of individual insurance companies' data with data of the insurance industry as a whole.

4. Solvency Monitoring & Operation Management

A function to investigate the flow of the P&C insurance market by utilizing a major statistics index is necessary. As described above, the Myanmar P&C insurance market is growing rapidly, and will create a highly competitive market. From the supervisory authority's point of view, it is important to establish fair competition among insurance companies, and to maintain the financial soundness of the P&C insurance companies who have joined the market.

As introduced in the RBC case of Korea above, the method of establishing a certain amount that exceeds reserves for claims paid considers the condition of each insurance company. However, detailed evaluation standards should first consider the current status of Myanmar's P&C insurance industry, and reflect on the past system-changing experiences of leading countries, by stage. Possible methods to review and objectify an evaluation index enforceable under Myanmar's current status must be considered, in accordance with the FRC's decision.

In the meantime, it is necessary to continuously observe market flow in the eyes of the Financial Supervisory Commission and insurance companies, because it is important to continuously search for systematic improvement plans for Myanmar's P&C insurance market development. Analysis data that has a basis in statistics is an important decision factor in the improvement of the system. Insurance companies must frequently monitor market trends and observe their competitors' flows of change.

Various forms of data extracted and analyzed through the current MIIS can be referenced for statistics to observe market trends.

Although the analysis statistics produced by the MIIS are limited to mandatory

driver insurance, the reporting system is categorized separately inside of the MIIS. This analytical system is composed of 23 items of contract and accident records (contract cases, premium income, number of accidents, claims paid) assorted by insurance company, location, and period of inquiry (month or year).

In order to improve the statistical analysis function, it is necessary to first supplement the evaluation index as well as the statistical analysis inside the reporting system. Fundamentally, with accumulated data as a basis, index extraction such as take-up rate, average insurance premium, accident rate (accident frequency), loss ratio, average amount of claims paid (accident severity), etc., is needed. This index enables the evaluation of insurance companies and the market, and will be a step forward from the analysis of the current report system's aggregate indicator, making it possible to evaluate the characteristics of contracts and claim data. Various statistical analysis items must be created, such as growth rate, sales depending on products or distribution channels, claim paid depending on reason of accident, etc.

Second, in the early stages this database should enable functions to provide results of data analysis based on the standardized form. These standardized data can be used not only insurance companies but also the supervisory authority to get information regarding future. In developmental stages, however, a user-centered statistical analysis system should be established which allows users to combine analysis subjects and receive results.

In other words, a user-centered statistical analysis system should be developed in which compiling institutions determine various items of analysis to turn into a database, and users access the system to receive analysis results by combining necessary items and the time period.

The production and announcement of various indicators can be used by insurance companies as a reference for product development and appropriate ratemaking and verification. The supervisory authority can also utilize it as a reference for determining insurance companies' financial soundness and improvements for the system. Providing various statistical indices may be a great help to the government and supervisory authority, not only by identifying basic profit and losses of insurance companies, which are currently managed in private business records, but also for reinforcement of insurance companies' financial soundness identification, and reinforcement of understanding of market trends for policy making, such as for laws and systems.

V. Summary & Conclusion

1. Summary of Research

Myanmar's insurance industry needs to have a self- developed foundation, as they are still in the early stages of their evolution. Therefore, to develop the insurance industry effectively, it is necessary to first establish an infrastructure that can serve as a foundation. To establish an infrastructure, development strategy under the government's initiative is necessary, rather than allowing each individual insurance company to build to their own capacity. This method has proven the most efficient in the developmental cases of the initial industrial nations of the early 20th century, such as the United States and Germany, and in more recent developmental cases like that of South Korea. We would like propose a summary for the development method, presented below:

2. Overview of Korea Insurance Professional Certificates

1) Actuary

To attain the Actuary designation in Korea, one option available for candidates is to successfully complete the requirements shown below. Requirements include examinations, and a training session. After passing two exams and completing a six-month training session in actuarial tasks, the Actuary designation can be awarded.

Actuary Examination	Subject	Qualification for Examination	Note
1st Exam	- Insurance Laws - Principle of Economics - Insurance Math I - Principle of Accounting	-N/A	-Multiple choice -Must achieve more than 40% on each subject and 60% on overall average to pass -Not able to pass by individual subjects
2nd Exam	-Actuarial Risk Management -Insurance Math II -Pension Math -Actuarial Modeling -Financial Management and Math	- Passed the 1st exam within the past 5 years -Worked in actuarial tasks more than 5 years at FSS, Insurer, Insurance Association, or KIDI -Completed either of the requirements above	-Essay -Must achieve more than 60% on subject to pass -Able to pass by individual subjects

2) Claim Adjusters: Property Damage, Automobile Damage, and Bodily Injury Claim Adjuster

To attain the Claim Adjuster designation in Korea, one option available for candidates is to successfully complete the requirements shown below. Requirements

include examinations and a training session. After passing two exams and completing a six-month training session in claim adjusting tasks, the Claim Adjuster designation can be awarded.

Claim Adjuster Examination	Subject	Qualification for Examination	Note
1st Exam	**Property Damage** : -Insurance Laws - Insurance Contract Law - Principle of Claim Adjustment **Automobile Damage** : -Insurance Laws - Insurance Contract Law - Principle of Claim Adjustment **Bodily Injury** : -Insurance Laws - Insurance Contract Law - Principle of Claim Adjustment	-N/A	-Multiple choice -Must achieve more than 40% on each subject and 60% on overall average to pass -Not able to pass by individual subjects
2nd Exam	**Property Damage** : -Principle of Accounting -Theory & Practice of Marine Insurance -Theory & Practice of Liability, Fire, Technology Insurance **Automobile Damage** : -Theory & Practice of Automobile Insurance -Theory & Practice of Automobile Structure and Repair **Bodily Injury** : -Medical Theory -Theory and Practice of Liability and Workers' Compensation Insurance -Theory & Practice of Health & Accident Insurance -Theory & Practice of Automobile Insurance	- Passed the 1st exam within the past 2 years -Worked in claim adjusting tasks for more than 5 years at FSS, Insurer, Insurance Association, KIDI, or National Agricultural Cooperative Federation -Already attained Claim Adjuster designation in a certain subject -Completed one of the requirements above	-Essay -Must achieve more than 40% on each subject and 60% on overall average to pass -Not able to pass by individual subjects

3) Broker: Life Insurance, Non-Life Insurance, and Health & Accident Insurance Broker

To attain the Broker designation in Korea, one option available for candidates is to successfully complete the examinations shown below.

Broker Examination	Subject	Qualification for Examination	Note
Life Insurance	-Insurance Law -Principle of Accounting -Life Insurance I -Life Insurance II	-N/A	-Multiple choice -Must achieve more than 40% on each subject and 60% on overall average to pass -Not able to pass by individual subjects
Non-Life Insurance	-Insurance Law -Principle of Accounting -Non-Life Insurance I -Non-Life Insurance II		
Health & Accident	-Insurance Law -Principle of Accounting - Health & Accident Insurance I - Health & Accident Insurance II		

4) Agent: Life Insurance, Non-Life Insurance Agent

To attain the Agent designation in Korea, one option available for candidates is to successfully complete the examinations shown below.

Agent Examination	Subject	Qualification for Examination	Note
Life Insurance	-Life Insurance -Health & Accident	-N/A	-Multiple choice -Must achieve more than 60% on subject to pass -Able to pass by individual subjects
Non-Life Insurance	-Non-Life Insurance -Health & Accident	-N/A	-Multiple choice -Must achieve more than 60% on subject to pass -Able to pass by individual subjects

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