

Yangon University of Economics



Research Paper Reading Proceedings

3rd January, 2023

Yangon University of Economics

Research Paper Reading

3rd January, 2023

8:30-9:00 AM	Registration
9:00-9:15 AM	Opening Ceremony
	Opening remarks by the rector
9:15 -9:25 AM	Photo Session

Parallel Session I: Management Studies

Venue: Nilar Hall

Chair: Dr. Moe Moe Khine

**Professor and Head (Retd.), Department of Management Studies,
Yangon University of Economics**

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|-----|--|--|
| 1.1 | Dr. Than Thu Zar
Professor
Department of Management
Studies | Effect of Organizational Culture on
Organizational Commitment at Private Banks
in Mandalay Region, Myanmar |
| 2.2 | Daw Khin Myo Su
Associate Professor
Department of English | The Effective Use of the 7-step Plan and the
Communicative Approach in Writing Business
Reports |
| 3.3 | Daw Chu Myat Chel
Tutor
Department of Management
Studies | Effect of Social Innovation Education on
Student Engagement in Yangon University of
Economics |

Parallel Session II: Economics

Venue: MDevS Forum Room

Chair: Dr. Khin Thida Nyein

Pro rector, Yangon University of Economics

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| 2.1 | Ko Hla Tun Khine
EMDevS (17 th Batch) | The Effect of Human Resource Management
Practices on Labor Disputes in Myanmar
(Case Study: Garment Factories in Yangon) |
| 2.2 | Ma May Myo Myint Khaing
EMDevS (17 th Batch) | A Study on Knowledge, Attitude and Practice of
Contraceptive Utilization among Reproductive
Aged Married Women
(Case Study - Hmawbi Township) |
| 2.3 | Ko Chit Zaw Myo
EMDevS (17 th Batch) | An Assessment on Food Safety Knowledge,
Attitude and Practices of Street Food Vendors in
Sanchaung Township, Yangon Region |
| 2.4 | Ko Soe Thura
EMPA (18 th Batch) | An Analysis of the English Language Needs for
Government Employees at Small Scale
Industries Department, Ministry of Cooperatives
and Rural Development |

Parallel Session III: Statistics

Venue: Room# 210

Chair: Dr. Mya Thandar

Pro rector, Yangon University of Economics

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|-----|--|---|
| 3.1 | Dr. Hlaing Hlaing Moe
Professor/Head
Department of Applied
Statistics | Factors Influencing Adolescent Fertility in
Myanmar |
| 3.2 | Dr. Khin Moh Moh
Associate Professor
Department of Applied
Statistics | Estimation of Rate of Returns on Investment in
Education in Myanmar |
| 3.3 | Daw Khin Thet Tun
Associate Professor
Department of Statistics | Modelling the Impact of Interventions on
Traffic Accidents in Yangon |
| 3.4 | Nandar Soe Lin
Tutor
Department of Applied
Statistics | Future Trends of Urbanization in Myanmar |

Yangon University of Economics

Research Paper Reading

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Effect of Organizational Culture on Organizational Commitment at Private Banks in Mandalay Region, Myanmar

Than Thu Zar*

Abstract

This study aims to analyze the effect of organizational culture on organizational commitment of the private banks in Mandalay. The research framework is developed by considering organizational culture as an independent variable and organizational commitment as dependent variable. Organizational culture involves involvement, consistency, adaptability and mission dimensions. Primary data are collected from 353 employees who are employed in private banks by using convenience sampling methods. Secondary data are gathered from relevant text books, research journals and relevant web sites. Descriptive statistics and multiple regression analysis are used to analyze the collected data. The results of this study show that private banks in Mandalay are shaping their culture according to the descriptive statistics results. Regression results indicate that all dimensions of organizational culture (involvement, consistency, adaptability and mission) have positive and significant effect on organizational commitment. Based on the research findings and research conclusions, the bank should try to strengthen the organizational culture and provide the clear direction to achieve the organizational objectives. To increase organizational commitment, it is necessary to establish proper organizational cultural dimensions.

Key words: Organizational Culture, Organizational Commitment, Involvement, Consistency, Adaptability, Mission

Introduction

Organizations operate in a constantly changing environment and predicting these changes is very difficult. Organizational culture is the set of norms and values created by the organization to adapt internal and external environment (Denison & Neale, 2011). An organization's culture includes a guide to how employees should behave and the prohibition to take an action to cope with a challenging environment. Organizational culture plays a key role in shaping organizational behavior and performance through the cooperation of individual members of the organization. A strong organizational culture creates employee commitment, organizational identity, shared beliefs and employee behavior (Azizollah et al., 2016). Managers need to build and nurture an organizational culture that benefits employees and the company, which is essential to accomplishing the overall vision of the organization. Chen et al. (2018) supported the role of leaders and outlined that the cultural orientation developed by management should be linked to innovation quality and implementation speed. In order to study organizational culture, this research uses Denison model. In this model, culture elements include involvement, consistency, adaptability and mission. This model provides employees with a clear direction and vision for the future.

Organizational commitment will be considered as the backbone of the organization as it effectively leads to its development. Employee values and ideals are based on management criteria that can provide clear directions. Skoumpopoulou and Waring (2017) stated that the cultural changes that occur within an organization impact

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on the organizational commitment. Strong organizational cultures motivate employees to get behind the scenes and work hard. A successful culture empowers employees with their peers to make a strong connection with the organization and their roles.

Today, many banks and branches have rapidly grown in Myanmar. Thus, it is more important to satisfy the customers who come to the bank. Organizational culture and organizational commitment contribute to the success of banks. In Myanmar, the government has introduced a number of diversified reforms to bring about market-oriented changes in the economy since 2011. There are still many obstacles to overcome in this industry. The banking industry plays an important role in the economic growth of countries. If the bank's actions are good, the profits will increase. Poor banking performance, on the other hand, could have a negative impact on economic growth. The Myanmar banking sector is growing rapidly and needs to be fully qualified to be sustainable. In addition, with the advent of more sophisticated products and services, banks have diversified their skills and become more and more experienced in international practice.

The city of Mandalay plays an important role in economic and cultural history of Myanmar. It is one of the most socially and economically developed cities among Myanmar's provinces and regions. With a dynamic industry and rapid changes, banks in Mandalay strive to attract new customers and retain their existing vendors and customers. In early 2020, banks and financial institutions had many reasons to be confident. The decade following the global financial crisis was marked by significant growth in both size and profitability. The COVID-19 pandemic has transformed banks' digital transformation plans as an opportunity to an urgent need. A weak process culture in an organization is difficult to adapt to these changes in the market, to follow the rules or deal with these challenges. Since different cultures come into operation, it seems that all cultural differences are a number of features can be introduced as the branches of the private banks in Mandalay. Therefore, organizational cultures such as involvement, consistency, adaptability and mission are selected to find out how the cultural factors affect organizational commitment in the private banks in Mandalay.

Objectives of the Study

This research aims to study the organizational culture and the organizational commitment of the private banks in Mandalay Region, Myanmar. The specific objectives are as follows:

- 1) To identify the organizational culture of private banks in Mandalay Region, Myanmar
- 2) To examine the effect of organizational culture on organizational commitment of private banks in Mandalay Region, Myanmar

Research Methods

This research aims to analyze the effect of the organizational culture on organizational commitment of private banks in Mandalay. In this survey, the target population is all the employees who are employing at private banks in Mandalay. There are currently 27 banks in Mandalay (Central Bank of Myanmar, 2022). Among them, twenty-five banks are private banks and two banks are state owned banks. The numbers of employees are continuously changing during the pandemic period and political crisis. The numbers of employees in these banks are about 3,000 during the crisis period. Sample respondents are 353 employees that are calculated by Yamane formula. This research uses both primary and secondary data. Primary data are collected from 353 employees of the private banks in Mandalay by using convenience sampling method with structured questionnaire. Items of these questionnaire are measured with five-point Likert scale. The secondary data are collected from academic textbooks, previous research papers, government documents and websites. Descriptive statistics and multiple regression analysis are used to analyze the collected data.

Literature Review

This research emphasizes organizational culture and organizational commitment in the field of organizations.

Organizational Culture

Many businesses show an interest in cultural dimensions that have a greater impact than other pieces of organizational behavior. The concept of organizational culture refers to a system of shared assumptions, values, and beliefs that show people what is appropriate and inappropriate behavior (Chatman & Eunyoung Cha, 2003). An organization's culture also includes a guide to how employees should behave, contains the prohibition to take an action to cope with a challenging environment. According to Robbins and Judge (2018), organizational culture can be a collective definition system in an enterprise maintained by the leader to be characterized at a competent level. This study uses the cultural dimensions of Denison model.

The Denison model includes four dimensions for improving organizational commitment. These are involvement, consistency, adaptability and mission culture (Denison & Mishra, 1995). Therefore, this research focuses on the dimensions of organizational culture such as involvement, consistency, adaptability and mission by using the Denison model.

Involvement is the extent to which employees participate in organizational decisions. Involvement is the first cultural dimension that ensures employee participation in decision making (Denison, 2000). It also depends on team effort to get the job done and continuous investment in the development of employees' skills. Organizational cultures are therefore those that strongly encourage employee involvement and create a sense of ownership and responsibility.

Consistency refers to an organization's internal systems and core values that support problem solving and effectiveness within organizational boundaries.

Consistency is the second cultural dimension where the organization focuses on maintaining the status quo through well-coordinated and well-integrated organization, and where the organization develops a clear agreement about the right way and the wrong way (Wambui & Gichangal, 2018). In addition, consistency is concerned with defining the values and systems that form the basis of a strong culture. It also provides a central source of coordination and control.

Adaptability means external adaptation and an organization's ability to assess and understand the market. Adaptability is the third cultural dimension of the Denison model to create changes in the demands of the business environment. It illustrates the organization's ability to translate the demands of the business environment into action through a customer focus and an organizational learning environment.

The **mission** describes the organization's main objectives which direct members on what is important to the organization. Mission is the fourth cultural dimension to develop a meaningful long-term direction and with this characteristic, the organization defines the strategic direction of the company. A mission provides purpose and meaning by defining a social role and external goals for the organization. It provides clear direction and goals that serve to set an appropriate course of action for the organization and its members.

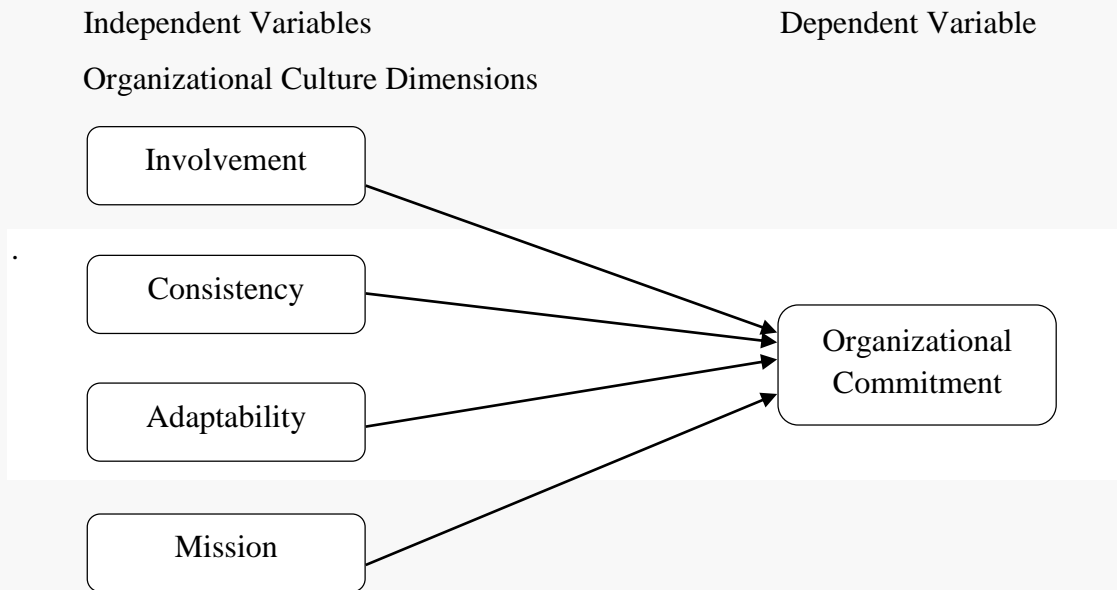
Organizational Commitment

Organizational commitment refers to the bond employees experience with their organization at work (Acquah et al., 2020). Organizational success mainly depends on employees' commitment to the organization. Organizational commitment is more than a formal relationship. It includes attitude towards the organization and willingness to pursue everything for the organization. Organizational commitment is an employee's commitment to a particular organization and to achieve its goals and desire to remain a member (Robbins & Judge, 2018). The success of an organization depends on how the organization makes the most of its people and how it encourages commitment to the organization. Increasing organizational commitment among employees is an important aspect of improving performance.

Imran and Ismail (2021) show that organizational culture dimensions such as involvement culture, consistency culture, adaptability culture and mission culture were significantly related to organizational performance in Pakistan's public banking sector. Nguyen et al. (2019) found that mission, adaptability and well-being are significantly related to employee innovation. The result show that involvement, consistency, adaptability and mission were positively related with employee commitment (Assaye, 2021). In the research of (Adisu, 2020), all organizational culture variables such as involvement, adaptability, consistency and mission were positive direct relationship with the organizational commitment. Results showed that the positive and significant correlations between overall organization culture (involvement, adaptability, consistency and mission) and organizational commitment among woman physical education teachers (Azadi, 2013). The results from the study showed that there was a significant relationship between all the components of organizational culture (adaptability, involvement, adjustment, mission) and organizational commitment

(Momeni et al., 2012). Based on the literature review and empirical studies, the following research framework is developed to find the objectives of the study.

Figure (1) Research Framework of the Study



Source: Own Compilation (2022)

In the research framework, the four dimensions of organizational culture: involvement, consistency, adaptability and mission are used as independent variables and organizational commitment is used as the dependent variable. This study expects that organizational culture will effect on organizational commitment at private banks in Mandalay Region, Myanmar.

Findings and Results

In order to study the organizational cultural dimensions of private banks in Mandalay, 353 employees are requested to answer the questionnaires. The agreement level of respondents is measured with five-point Likert scale. The mean results of the data are analyzed according to the interpretation of Best (1977). Mean values describe the employee perception towards organizational culture and organizational commitment in order to meet the first objective of identifying organizational culture of private banks in Mandalay. The standard deviation is commonly used to measure confidence in statistical inferences. A low standard deviation indicates that the data points are close to the set value, while a high standard deviation indicates that the data points are spread over a wide range of values (Lind et al., 2011). Reliability is also analyzed by using Cronbach's alpha value to measure of internal consistency. The following Table (1) shows the Cronbach alpha values and descriptive statistics of each variable.

Table (1) Descriptive Statistics of the Variables

Sr. No.	Variables	Mean	Standard Deviation	Numbers of Items	Cronbach's Alpha
1	Involvement	3.84	.576	5	0.785
2	Consistency	3.50	.625	5	0.809
3	Adaptability	3.89	.639	5	0.839
4	Mission	3.70	.618	6	0.880
5	Organizational Commitment	3.70	.647	8	0.933

Source: Survey Data (2022)

According to Table (1), the results of Cronbach's alpha values for each variable are satisfactory. It indicates scale items of questionnaire are considered acceptable and reliable to conduct further analysis. Involvement in decision making, information sharing, delegation, being part of a team and cooperation are asked to analyze the involvement. Consistent set of values, sharing a share a common perspective and consistent approach to do business are questioned to examine the consistency. In addition, quick response to changes, encouraging innovation and learning environment in day-to-day operations and viewing failure as an opportunity are observed for adaptability. Giving meaning and direction, having long term purpose and direction and continuously tracks its progress are asked for mission. The above Table shows that employee perception on all the organizational culture is at the agree level. The mean value of involvement is 3.84 which is the agree level. It means that employees believe their banks are conducting involvement culture in their day-to-day operations. The mean value of consistency is 3.50 which is also the agree level. It can be said that employees perceive the practices of their banks are consistency. Adaptability is 3.89 which is also the agree level. It can be concluded that banks are adapting in managing changes in their environment. Mean value of mission is 3.70 which is also the agree level. Thus, banks have meaningful mission to provide guidance for their employees. Mean value of organizational commitment is 3.70 which is the agree level. Hence, employees believe they are committed to their banks by practicing proper organizational culture.

In this research, multiple regression analysis is used to test the second objective of the effects of organizational culture (involvement, consistency, adaptability and mission) on organizational commitment. Multiple regression analysis is a statistical procedure for estimating the relationship between variables. When the independent variables differ from each other while other independent variables are fixed, it helps to understand how the normal value of the dependent variable changes. The results of multiple regression analysis are described in Table (2).

Table (2) Multiple Regression Analysis of Organizational Culture and Organizational Commitment

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.124	.134		.922	.357		
Involvement	.117**	.048	.104	2.462	.014	.468	2.135
Consistency	.204***	.049	.197	4.203	.000	.382	2.615
Adaptability	.114**	.057	.112	2.008	.045	.270	3.701
Mission	.533***	.059	.509	9.099	.000	.269	3.715
F	209.821***						
R	0.841						
R ²	0.707						
Adjusted R ²	0.704						
Durbin-Watson	1.852						

Source: Survey Data (2022)

P<0.01 (Significant at 1% level)

P<0.05 (Significant at 5% level)

Dependent variable: Organizational Commitment

According to Table (1), the regression analysis results provide that involvement (B=0.117, t=2.462, p<0.05), consistency (B=0.204, t=4.203, p<0.01), adaptability (B=0.114, t=2.008, p<0.05) and mission (B=0.533, t=9.009, p<0.01) are significant effect on organizational commitment. The power of the models to explain the organizational commitment of private banks are good as the values of R² are more than 70 percent. The value of F-test, the overall significant of the models, comes out well significant in private banks at 1 percent level. The models for private banks are a good descriptor of the relation between the dependent and independent variables. Thus, the independent variables (organizational culture) significantly explain the variance in the organizational commitment of private banks in Mandalay. The expected positive sign is shown in the effect of organizational culture on organizational commitment of private banks in Mandalay.

Overall, the standardized coefficient (β) of mission has the largest value among the explanatory variables for private banks. This means that proper mission culture makes the strongest contribution to increase the organizational culture of banks when the variance explained by other variables is controlled for. In general, the model for banks shows good results. All variables show the expected positive sign and has significant coefficient in private banks. It has been found that the growth in practicing organizational culture led to increase the organizational commitment of employees in the private banks.

Conclusion and Discussions

The discussions are based on the results of analysis which are obtained from the descriptive statistics and regression analysis. According to descriptive analysis results, adaptability has the highest mean value, follow by involvement and mission. The consistency is the lowest. However, all the organizational cultural dimensions are at the agree level. Therefore, employee involvement, adaptability, consistency and mission are essential elements of organizational culture in private banks. Adaptability is critical to the role of organizational members' agreement on important values and fundamental assumptions of the organization. It is important for the organization's ability to respond to external changes with internal changes.

According to the regression analysis, involvement, consistency, adaptability and mission have positive and significant effect on organizational commitment. Therefore, these variables increase the organizational commitment while increase in taking their activities. Features of involvement culture in the private banks include decision-making at all levels where valid information is available. They are sharing information widely and encouraging cooperation in various parts of the organization. Organizational culture includes making employees work as part of a team and delegating authority to employees to do things on their own. Consistency is an effective organizational culture in the activities that have values which govern the way banking works. Ease of sharing a common point of view even on controversial issues across different parts of the organization have a consistent approach to work. Adaptability is an also effective organizational culture for responding to competitors' actions and other changes in the banks. Adaptability is important for the goal of daily learning in the day-to-day work of the organization, and the bank views failures as an opportunity for learning and improvement. Mission is the most influential organizational culture dimension on organizational commitment. It is important that the employees stay focused on what is important to the organization. A clear objective can give meaning and strategic direction to the Bank.

Suggestions and Recommendations

The findings of this study indicate that effective organizational culture has a positive effect on organizational commitment. Employees from different branches of the banks share a common direction. It includes a unified set of standards that make it easy to coordinate different projects. Having a consistent approach to work across parts of the organization is especially necessary for bank employees. The bank should implement the best way of doing consistency. The bank should motivate employees to get more consensus on conflicting issues. They should be good coaches in choosing a common direction and the best way to get information to every employee. They should to have a consistent system to do business in a predictable and integrated way.

If the bank implements information changes in the form of communication strategies to adapt with the changing environment, their commitment will increase. The bank should reinforce its organizational learning in order to respond well to competitors' actions and other changes in the business environment and to accomplish

an important objective in the company's day-to-day operations. In addition, the bank should encourage their employees to develop risk appetite and be innovative to proactively respond to the changing needs of their customers so that ultimately, they can easily adapt to the highly competitive business environment. Managers should make sure that goals and expectations are clear and achievable so that everyone can work towards their success.

According to the findings of this study, it suggests that the organization's primary objectives should be those that keep the members focused on what is important to them. The private banks should try to strengthen the organizational culture and provide the clear directions to achieve the organizational objectives. To achieve its objective of increasing organizational commitment, it is necessary to establish proper organizational cultural dimensions.

Suggestions for Further Research

This study focuses only on the four dimensions of organizational culture on organizational commitment of private banks in Mandalay. Further studies should examine the others organizational cultural dimensions such as clan culture, adhocracy culture, market culture and hierarchy culture as the influencing culture on organizational commitment in the banking industry. In addition, further can conduct organizational culture and organizational commitment for other industries. Future researchers can also apply three levels of organizational commitment.

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The Effective Use of the 7-Step Plan and the Communicative Approach in Writing Business Reports

Khin Myo Su*

ABSTRACT

Business writing plays a vital role in business communication throughout the world. However, most Myanmar students are not familiar with business writing, especially in writing a business report due to the well-thought ideas or concepts to be included in it. The survey was conducted with a total of 30-third year- students specializing in accounting, population studies, development studies and public administration of Yangon University of Economics. The study can be categorized as a design of giving a pre-test, pilot teaching and post-test, recording the students' score of both tests and comparing them with 'Testing Paired Comparison 't' Test'. This research paper mainly focuses on how learner can be empowered and inspired to write a business report using a communicative approach and 7-step plan. The results have some good effects on the students as a key role in writing a business report with such concept and knowledge, students become proficient and confident business report-writers. It is highly recommended that they should contribute to their working environment successfully as professional business report-writers in the future.

Key Words: 'writing business reports', '7-step plan', 'communicative teaching', 'pre-test', pilot 'teaching', 'post-test'

1. INTRODUCTION

This research paper '**The Effective Use of the 7-Step Plan and the Communicative Approach in Writing Business Reports**' submitted to YUEco Paper Reading Occasion presents how to teach students to write a business report using the 7-step plan and the communicative approach. Firstly, this paper explains the '*Background of the Study*', '*Aims and Scope of the Study*' and '*Literature Review*' under the '**INTRODUCTION**' section. After that, '**METHODOLOGY AND MATERIALS**' used in the research, which also covers '*Background Information of a Business Report*', '*How can a Business Report be Created Effectively?*', '*What are the 7 Steps?*' and '*The Nature of Data and Data Collection*' are presented. Then, it is followed by the next section '**RESULTS (FINDINGS)**'. After that, '**DISCUSSION**' which also deals with '*Pedagogic Implications and Suggestions*' is presented and finally '**SUMMARY AND CONCLUSION**' section' together with '*Recommendations.*' are stated.

In fact, being skillful at writing a business report plays a key role to perform the tasks or projects, etc. better and successfully at their workplace as it can help decision-makers make plans and objectives in the company. Moreover, business owners will be able to anticipate any issues involved in making an investment or purchase, etc. by analyzing '*recommendations*' and '*suggestions*' included in a high-quality business report. This is the great significance of doing this research on teaching writing business reports.

* Associate Professor and Head, Department of English, Yangon University of Economics

1. 1. The Background of the Study

It can be assumed that business reports are forever formal, objective and heavily researched. A business report must include clear and verifiable regardless of whether the report focuses on a single situation or examines the overall performance of an entire company. As objectivity is vital in a business report, subjective descriptions should be avoided and thus a business report should remain impersonal and framed from the company's perspective.

As a good business writing skill, one of the most important requirements becomes useful and necessary, young learners should urgently learn to write a report and the term 'report' will be used to be short from now on. Therefore, if we can investigate their difficulties in writing reports and find ways to help and train them to become quality business report-writers, they can largely contribute to the business successfully.

This study hypothesizes that '*if learners are exposed to writing reports and trained how to write them by using 7-step plan, they will be able to produce quality reports.*' Being professional report-writers, they can be successful at their workplace and thus it is surely worth learning in the long run. These are the background of the study.

1.2. Aims and Scope of the Study

The aims of the study are:

1. Firstly, to identify problems in writing reports that students of YUEco encounter.
2. Secondly to examine what are to be included as ingredients ('heading' and 'sub-headings') in a report following the conventions of 'Market Leader'-Course book (Intermediate Level) – 3rd edition.
3. Finally, to do the communicative pilot teaching to students to find out whether the programme is successful in using 7-step plan for teaching writing reports.

This research aims that the findings of the present research will solve the problem of writing reports that most students of YUEco face. Furthermore, it will give teachers who are exploring more effective teaching methodology or other ways of valuable insights into not only the 7-step plan but also other more creative methods or ways of teaching writing reports.

The research area is mainly focused on teaching how to write reports. Research questions are:

1. Do students know the overall layout or appearance of a report?
2. Can the messages in a report help the person in authority make informed decisions?
3. Is this 7-step plan really effective to produce a report with a creative and well-thought out manner?

The study can be categorized as a design of giving '*pre-test*', '*pilot-teaching*' and '*post-test*' including recording the students' scores of both tests and comparing them. Both tests cover up writing reports individually based on the questions asked and this study can be put into two sections as follows:

1. Showing the subjects, a sample report first to be able to draw some ideas from it and then as a pre-test, giving them a question to answer to submit the assignments individually. Each answer of the assignments was analysed and graded at the 'Fail', 'Pass', 'Credit' and 'Distinction' categories in terms of 3 aspects: 'layout' (format), 'contents' (messages) and 'accuracy' (language, spellings and punctuations) to do the data collection. Then their grades were recorded.
2. Providing the two weeks' communicative pilot teaching to them by using 7-step plan (6 hours of teaching in total plus 1 hour each for pre-test and post-test including recording their grades to do the data collection. How each answer in their assignments of both tests is graded at four categories will be explained in '**Data Collection**' section in details.

1.3. Literature Review

'Despite the wide use of writing in today's world, learning how to master the skill of business writing does not have to be a difficult task' [**Business Writing: Clear and Simple.** – 1st edition, New York – Learning Express, LIC; 2007]. Therefore, it is necessary for business English teachers and learners to do a good and empirical research on this kind of business writing: writing reports.

'Specialized English is best learnt as a second layer built upon a firm general English foundation.' [**Teaching English as a Foreign Language**. London: Routledge; 1978 – Broughton G. Brunfit C, Pincas A.D. Wilde. R.].

Business writing, especially writing reports that support as informative and effective document is necessary and popular among other forms of writing after getting the English foundation. When producing pieces of business writing, we need to 'be creative in thought, but practical in application' [**Business Writing: Clear and Simple.** – 1st edition, New York – Learning Express, LIC; 2007]. In fact, learners have to be enlightened about the objectivity and reliability that are involved in a report to help the person in authority make informed decisions using 7-step plan.

Business writing and communication expert, Ms. Shirley Taylor, personally designed this 7-step plan and she is also a pioneer to enhance business writing skills of students. Shirley's tips and techniques are excellent models to follow for effective and successful communication. Once students learn, they will gain surprises, confidence in their ability and they will succeed later.

Alan Meyers (2005) has viewed 'writing' as an activity in a process and a way of producing language. In order to achieve goals, writers work through the writing process: describing how to discover and organise thoughts, how to write them down and how to rewrite and revise them step by step.

The review of literature shows that designing activities for writing reports depends on the principles of 7-step plan that is adopted in this study. Regarding the 7-step plan to write a report, no one has ever done research on 'writing business reports' in Myanmar.

2. METHODOLOGY AND MATERIALS

The 7-step plan personally designed by Ms. Shirley Taylor who used to be an examiner in the secretarial skills for a major examining board (LCCI-Level 2: EB) (UK) will be used and '*communicative approach*' is mainly adopted to teaching creating reports in

this study. Before starting with the communicative pilot teaching on how to create reports *using 7-step plan*, the following information used as *materials* is introduced to let the students know all about a report. *Materials* used for teaching writing reports were as follows. report should stay impersonal and framed from the company's perspective.

2. 1. Background Information of a Business Report

Basically, there are some features of a report that are introduced so as to make the students be equipped with the knowledge of a report. A report is an organised summary of the main ideas or the most important information but it does not include every fact and detail, just stating the results of meetings, discussions, research, etc. clearly and accurately. Therefore, we need to make the information easy for the reader to grasp.

In fact, depending on the types of events, first, we collect facts as materials that lead to decisions, votes, activities or actions to write a report. Focusing on the essential information highlighted in our notes, then we select and arrange the materials. After organizing the facts, we need to consider the guidelines: the purpose of the event, its outcome, main ideas to be expressed clearly. Finally, based on the guidelines we arrange the report chronologically, composing its outlines. This is how we can prepare to write a report in process.

Above all, being entirely objective, a report does not include any opinions of the writer and subjective descriptions that tell the readers how to feel should be avoided. Therefore, it can be said that reports are always assumed to be formal, objective and heavily researched. Whether the report focuses on a single situation or examines the overall performance of an entire company or not, every fact or data must be clear and verifiable. In fact, a report should stay impersonal and framed from the company's perspective.

2. 2. How can a business report be created effectively?

Basically, there are three aspects of a report to be considered and they are

- (i) layout of a report (format)
- (ii) its contents (messages)
- (iii) its accuracy (language + spellings + punctuations)

A report should be well-organised with information in a logical order. Regarding the first aspect '**Layout**' (**format**), there is no set '*layout*' (*format*) for a report but here we will follow the conventions of writing a report in '*Market Leader*' (*Intermediate Level – Page 130*). Firstly, what need to be included in the '*layout*' of a report as *ingredients* ('*Heading*' and '*Sub-headings*') are (i) title (ii) executive summary (iii) introduction (iv) findings (v) conclusion (vi) recommendations (vii) signature (the candidate's) (viii) date and these ingredients need to be put in this order too. The second aspect we need to consider before writing a report is '**Contents**' (**messages**). In a report the '*Executive Summary*' is a summary of the main points and conclusion of the report. It gives the readers a quick overview of the total situation and lets people learn the highlights quickly without having to read the whole document. The '*Introduction*' shows the points that will be looked at. The '*Findings*' are the facts and data discovered and they are relevant to the purpose stated in the background. Moreover, they should be clear and specific as the whole report depends on the information in this section. Under '*Findings*', there should be no opinions on what has been found out. The '*Conclusion*' is what we think about the facts and how we interpret them. In fact, the '*Conclusions*'

are the explanations of the findings and a discussion of what they mean to the firm or the person who asked for the report. *'Recommendations'* are practical suggestions to deal with the situation and ideas for ensuring future activities run more easily. In fact, under the *'Recommendations'*, the solutions to any problems mentioned in the *'Conclusions'* are recommended and how these solutions would work is summarized. The *'Signature'* is usually placed at the end of a report. The *'Date'* is usually the one on which the report is written.

The third aspect of a report is *'Accuracy'* that consists of *'language'*, *'spelling'* and *'punctuations'*. In general, the language must be clear and overly-complicated sentences should be avoided as they are difficult to understand. Conventions for a report are neutral language and precision. In a report, there should not have misspellings and wrong uses of punctuations too. The key to language in a report has to be factual and unemotional.

2.3. What are the 7 plans?

The following are the 7 steps used to create a business report effectively and these steps really have great impacts on teaching writing reports with objectivity and clarity in all aspects.

Step 1. Identifying the task: Writing a business report

Step 2. Layout of the report

Step 3. Contents (message) of the report

Step 4. Grouping and sequence of the messages

Step 5. Format and presentation techniques of the report

Step 6. Designing a report

Step 7. Checking – (by putting a tick for the 'yes' answer after asking the following by themselves):

- (i) Is this appropriate response to the question?
- (ii) Is the layout acceptable?
- (iii) Have we selected the messages sensibly?
- (iv) Have we organized them logically?
- (v) Does the format meet the needs of the task and is it appropriate to the message?
- (vi) Can it be read easily?
- (vii) Have we checked every step from 1 to 6? etc.

Are there any grammatical errors and obvious spelling errors? etc.

Are my alterations clear?

Have I checked the names and words given in the question?

After being taught using 7-step, the students are highly motivated and equipped with confidence, empowerment, and well-thought in writing a report. To overcome the challenge that teachers of writing reports are facing in their own context, this 7-step plan is useful and powerful in such a way that it is helping the students to become

professional and successful business report-writers. Therefore, it can be said that not only students but business people at their work place can use this 7-step plan to create a report. The following material (**Fig. 1**) is the *sample report* shown to the students to draw some ideas from it.

Business Software plc

Product report

Executive summary

We have been contacted by Lenz AG, a German manufacturer of mobile telephones, and asked about the possibility of a co-operation agreement. We would adapt our business software for use in their products. Tests show that their product is a very good one and popular with our target market.

Introduction

This report will look at:

- The hardware manufacturer and their equipment
- Software that could be used on their mobile phone
- The advantage of working together
- Recommendations for action.

Findings

1. Lenz has been developing cheap, small-scale electronic devices for 35 years. In the last five years, they have focused on more expensive mobile phones for businesspeople. These have been very successful. One in four mobile phones for the business market is a Lenz.
2. Our new Executive Organiser software has a lot of attractive features for the travelling businessperson (e.g. address book, e-mail, video & voice recorder, street-finder function, etc.).
3. Market research shows that there is a lot of interest in our products being used on machines apart from computers.

Conclusion

The two companies have products which fit well together.

Recommendation

We should have a meeting with representatives from Lenz as soon as possible to discuss a joint venture between our companies, with the aim of putting our software onto their mobile phones.

Tracy Cruickshank
Research and development Director
19 October

Fig 1. Sample Business Report ('Market Leader' – Intermediate Level – Course Book, Page 130) -3rd edition

2.4. The Nature of Data and Data Collection

In this study, the survey was conducted with a total of 30-third year- students specializing in *accounting, population studies, development studies and public administration* of Yangon University of Economics. The two-stage sampling approach is applied. At the first stage, one campus is selected among the two campuses of Yangon University of Economics. At these campuses, the English subject is taught to the undergraduate students. The selected campus is ‘Hlaing’ campus. The cluster sampling method is applied for doing this research. There are three clusters like ‘first year, second year, third year’ in which the business-report writing is taught at the ‘Hlaing’ campus of Yangon University of Economics. At the second stage, the cluster sampling method is applied. Among these clusters, one cluster is randomly selected, and the randomly selected one is ‘third year’. There are 30 third year students who are learning English subject. The study was made tangible by collecting data by means of *a pre-test, pilot teaching, post-test* design in order to investigate whether the 7-step to teaching creating reports would facilitate their business writing skill in business context. This was measured by grades of individuals obtained from each test: *pre-test* and *post-test*. The same grading systems in both tests with the same time allowance before and after pilot teaching were used so that there would not be any variations in managing the tests. After being given one hour for showing the subjects a sample business report to draw some ideas from it and for the pre-test, the experiment was started with communicative teaching writing reports using the 7-step for two weeks (6 hours) of teaching. Three-stage procedure: elicitation, highlighting and practice (controlled and free stage) was mainly focused in this method of teaching. At the elicitation stage, the subjects were introduced with the necessary information about a report mentioned above as materials. Then they were shown sample reports and the three main aspects: ‘*layout, contents and accuracy*’ of a report and some graphic devices used to be clear such as white space, bullets, number points, etc. were pointed out. Next, they were given an activity (a question) as a control practice by eliciting and highlighting the important messages using the 7-step plan. In each step, the subjects were asked to create a business report systematically and practically to make the messages clear and to be acted on being a facilitator. When completing it, they were explained in terms of the three main aspects to make them familiarize with how to create a report successfully. Lastly, they were given a question to write a report as a group activity at the *free stage*. Then, with the demonstration of their reports, they could compare their works and pay a particular attention to the features used in others’ reports. As feedback, why each of their works were placed at each category: ‘*Distinction, Credit, Pass and Fail*’ were pointed out and explained in details in **Table 1**. Please observe **Table 1** below.

Table 1

Showing marks allocation for each category and its features in a report.

Sr.	Category	Marks	Some features found in their works
1.	Distinction	≥ 75 marks 75 & Above 75	Layout – excellent in all aspects, the use of bullets and numbers being especially proficient. Forming the answer logically and precisely. Contents – excellent, being clear and well-analysed/ ‘ <i>Findings</i> ’ – the skeleton of the report, framework to the ‘ <i>Conclusion</i> ’/ ‘ <i>Recommendations</i> ’ – based on ‘ <i>Findings</i> ’ and ‘ <i>Conclusion</i> ’ Accuracy – excellent: no error of grammar or of spelling / strong answer
2.	Credit	≥ 65 marks 65 – 74	Layout – being clear/ effective use of white space Contents – precise, concise and accurate / ‘ <i>Recommendations</i> ’ – sensible and can follow from the ‘ <i>Conclusion</i> ’ Accuracy – some inaccuracies e.g. misspellings , incorrect verb forms, lack of recognition of a sentence, etc.
3.	Pass	≥ 50 marks 50 – 64	Layout – generally good / too general in title, no date, etc Contents – incomplete information about the ‘ <i>Executive Summary</i> ’ and ‘ <i>Introduction</i> ’ / no clear information / No specific ‘ <i>Findings</i> ’/ Simple & sound ‘ <i>Conclusions</i> ’ & ‘ <i>Recommendations</i> ’. Accuracy – some faults / misspellings / incorrect agreements / missing words e.g. prepositions, articles, etc.
4.	Fail	<50 marks Below 50	Layout – no clear information given under the ‘ <i>Headings</i> ’ due to the rare uses of white space, bullets and numbered points. Contents – cannot give necessary information in ‘ <i>Executive Summary</i> ’/ uncertain ‘ <i>Conclusion</i> ’ due to the faulty and unclear expressions/ no specific ‘ <i>Recommendations</i> ’ Accuracy – several weaknesses e.g. misspellings, lack of understanding of sentence formation, weak expression, misuses of words, etc.

These processes of communicative teaching writing reports can be illustrated in the following pyramid approach as in **Figure 2**. Please see **Figure 2** below.

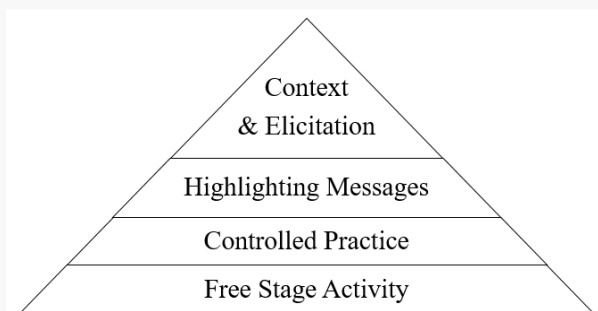


Fig. 2. The Communicative Approach to Teaching Writing Reports [Ur. (1996)]

After being given enough practices of creating reports, they were given a post-test. Then, their answers of both tests were analysed and graded at four categories and each data of both tests was collected. To do the research on teaching creating reports, it took two weeks (8 hours: 7 hours for giving a pre-test and pilot teaching and 1 hour for a post-test) using the 7-step plan.

3. RESULTS (FINDINGS)

Testing Paired Comparison ‘t’ Test

To find out the scores of the pre-test and post-test, testing paired comparison in students’ ‘t’ test using SPSS (Statistical Package for Social Science) was conducted to compare the average scores of pre-test and post-test. The mean score of pre-test is 53.5 with the standard deviation of 14.839 and the mean score of post-test is 60.9 (61) with the standard deviation 9.686. Since the paired sample correlation is 0.864 with the probability level of 0.000, there is a very strongly positive correlation between pre-test and post-test in **Table 2**. Please observe **Table 2**. It can be concluded that the mean score of the post-test is significantly different from that of the pre-test with the paired comparison in statistical t-test that is 5.001 ($p\text{-value}=0.000$) at 1% level of significance. There was a significant difference between the pre-test and post-test, and the mean difference between the pre-test and post-test scores of students was 7.4. The statistical confidence interval estimates show that the 95% confidence interval of the difference is between 4.373 and 10.427 in **Table 3**. Please observe **Table 3**.

Table 2

A comparison between the pre-test and post-test scores.

Paired Sample	Mean	N	Std. Deviation	Std. Error Mean	Paired Sample Correlation
Post-Test	60.9	30	9.686	1.768	0.864 (0.000)
Pre-Test	53.5	30	14.839	2.709	

Table 3

A paired comparison test difference between the pre-test and post-test.

Paired Sample	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Post-Test – Pre-Test	7.4	8.105	1.480	4.373	10.427	5.001	29	0.000

The results of the current study suggest that communicative teaching creating reports using 7-step plan has some good effects on the students. The scores of pre-test and post-test can be compared by means of multiple bar chart and line graph like these as in **Figure 3** and **Figure 4**. Please observe **Fig. 3** and **Fig. 4**.

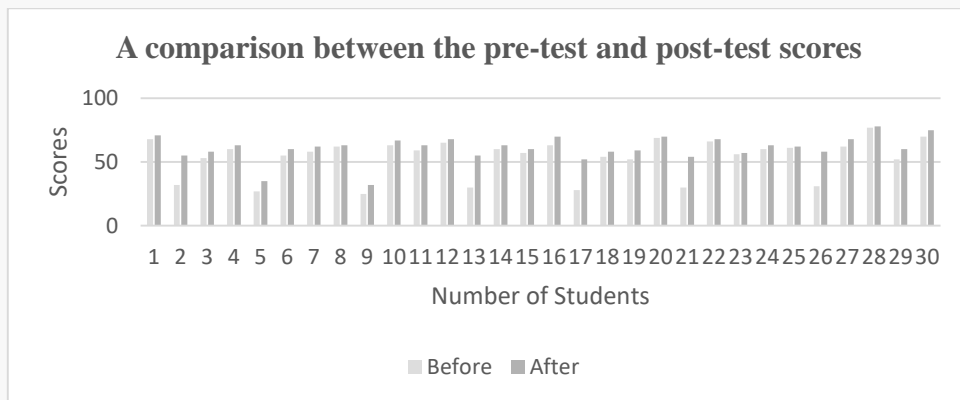


Fig. 3. A bar chart showing a comparison between the pre-test and post-test scores

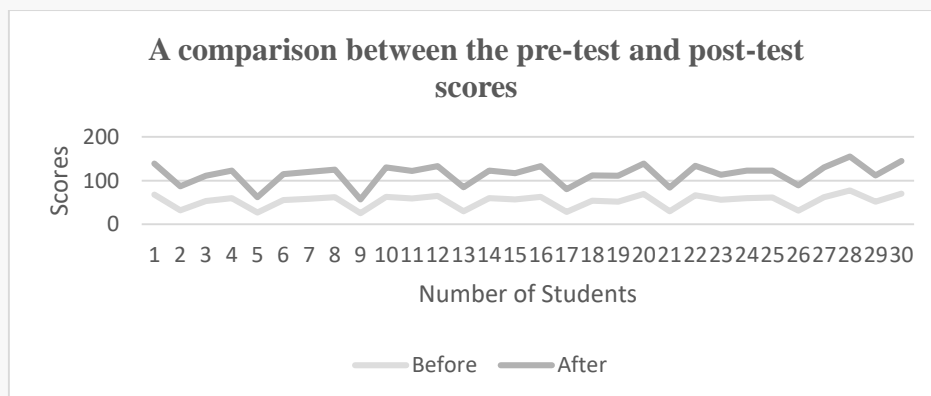


Fig. 4. A line graph showing a comparison between the pre-test and post-test scores

The number of students who were placed at ‘*Fail, Pass, Credit and Distinction*’ in pre-test and post-test can be compared and shown by ‘percentage’ as in **Table 4**. Please observe **Table 4**.

Table 4

A table showing a comparison between the number of students placed at each category in both tests by percentage

Particular	Pre-Test		Post-Test	
	Frequency	Percent	Frequency	Percent
<i>Fail</i>	7	23.3	2	6.7
<i>Pass</i>	17	56.7	19	63.3
<i>Credit</i>	5	16.7	7	23.3
<i>Distinction</i>	1	3.3	2	6.7
Total	30	100.0	30	100.0

The number of students who were placed at ‘*Fail, Pass, Credit and Distinction*’ in pre-test can be shown by ‘percentage’ as in **Figure 5**. Please see **Figure 5**.

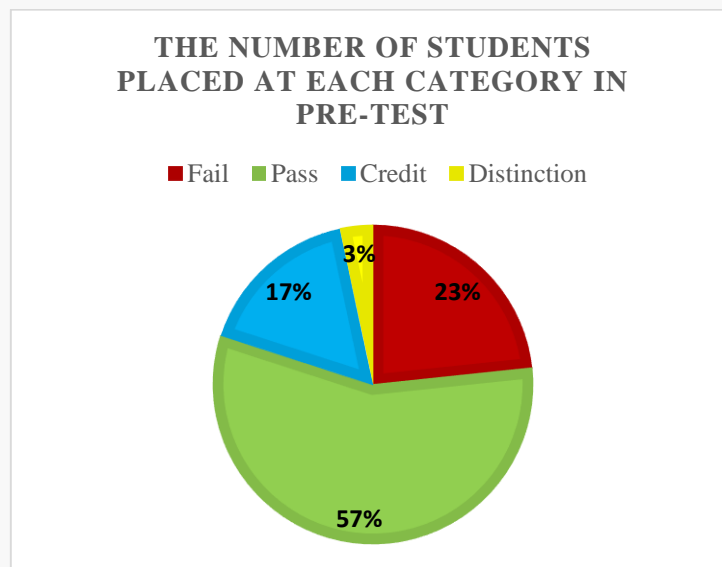


Fig. 5. A Pie Chart showing the number of students placed at each category in pre-test.

The number of students who were placed at ‘*Fail, Pass, Credit and Distinction*’ in post-test can be shown by ‘percentage’ in **Figure 6**. Please see **Figure 6**.

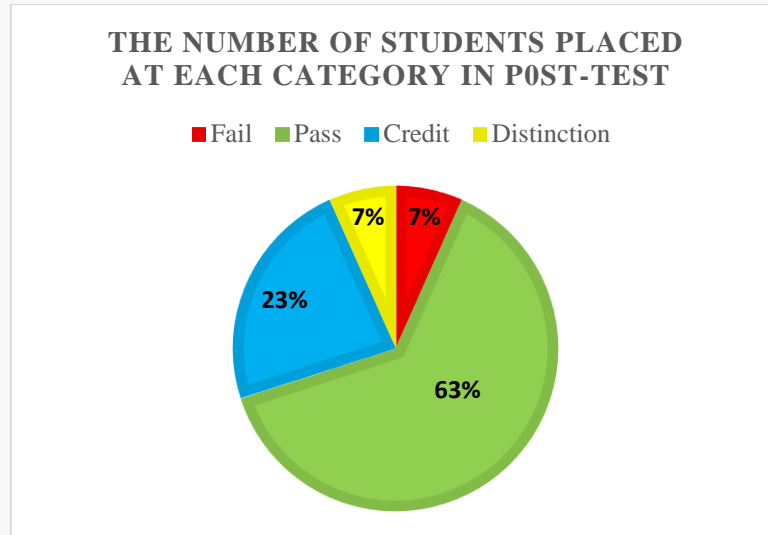


Fig. 6. A Pie Chart showing the number of students placed at each category in post-test.

4. DISCUSSION

The results of the current study suggest that two-week treatment has some good effects on their skill of creating reports. A bit more students passed and very fewer ones failed after being taught as it was highly significant that the number of subjects who passed and failed increased from 56% to 63% and 23% to 7% respectively shown as in **Figure 5** and **Figure 6**. Besides a few more subjects and quite more subjects got ‘credit’ and ‘distinction’ respectively as it was quite and rather significant that the number of ‘credit’ and ‘distinction’ subjects increased from 17% to 23% and 3% to 7% shown as in **Figure 5** and **Figure 6** respectively.

According to the results, they seem to be weak in accuracy other than the other two aspects: layout and contents. However, it can be said that they know how to make the reports clear and effective and can also convey the important messages to the company owner as most subjects *passed* and some more got ‘credit’ and ‘distinction’ due to their creativity in thoughts and ideas in their answers. Moreover, they can infer or conclude from the findings and also make suggestions and recommendations for future actions for the person in authority to make decisions easily and successfully as quite more subjects got ‘credit’ and ‘distinction’. Therefore, it can be said that this 7-step plan is really an effective method to create a report.

On the whole, the results of the present study show that they are basically aware of how to write reports. Besides, as the creativity in ideas and well-thought-out manner are found in their works, it is believed that if they train themselves using 7-step repeatedly, they will become confident and skilful and then professional business report-writers. Above all, it can be said that being professional and high-quality report-writers, they can largely and successfully contribute to the business. It can be said that this 7-plan is a really effective method for teaching writing reports as the results of the current study suggest that the adoption of communicative approach and using this 7-step plan have some good effects on the students as a key role in creating reports successfully. In fact, what they have learnt in the classroom is practically applicable to the real business

situations and is somewhat beneficial to business owners and thus upskilling the young learners in creating reports is remarkable for doing this research.

4. 1. Pedagogic Implications and Suggestions

The achievements of students in the study have a lot of implications for 7-step plan and communicative teaching creating reports. It is implied that most students need activities which are exciting, challenging and stimulating their curiosity. If they often train themselves in getting involved in something active and arousing their interest, they can gradually become professional business report-writers. In addition, useful implications can be drawn for evaluation of teaching ‘creating reports’ in the curriculum at the post-grad level. Moreover, teachers are responsible for helping students to enhance their professional skills of writing reports. It is also implied that with the use of this 7-step systematically, urgent measures or future actions to be put right or taken should surely be included in the report and thus the person in authority can take actions on it successfully and effectively due to the quality business report.

The following are suggested for teaching creating reports in business context:

1. Eliciting learners before introducing writing reports in order to arouse their interests by showing them sample reports.
2. Pointing out the three main aspects: *layout*, *contents* and *accuracy* that are important and essential to be considered in a report.
3. Putting emphasis on highlighting the graphic devices such as white space, bullets and numbered points with heading and sub-headings to make the report clear and to be worked on it effectively and successfully.
4. Making students have a lot of practice which is challenging and thoughtful in authentic situations to write a report is further suggested.

In fact, this 7-step is also useful for producing other forms of business writing as it can really up-grade the students’ proficient levels of other skills such as creativity and thinking, etc. Therefore, other forms of business writing such as business letters, memos, notices, etc. with a lot of practice are highly-recommended in the courses of business students at the higher education level. For further study, other forms of business writing mentioned above should be selected to do better research using other ways or methods as they are mostly used at their workplace.

5. SUMMARY AND CONCLUSION

This paper emphasizes the effective use of 7-step plan to develop the students’ writing skill in business: writing business reports and to help both teachers and learners to be more aware of the benefits of writing quality reports for effective and successful business communication at workplace in authentic situation in the future.

To prove the hypothesis “*if learners are exposed to writing reports and trained how to create them by using 7-step, they will be able to write quality reports*”, a total of 30 third-year students of YUEco were given a communicative pilot teaching for creating reports using 7-step for two weeks (*6 hours for teaching + 2 hours for pre-test and*

post-test) and their grades were analysed. It was found that most students received ‘**pass**’ category due to the correct layout with the ‘conclusion’ and ‘recommendation’ being simple and sound in spite of their faults that rarely interfere with communication. Besides, there were only a very small number of students placed at ‘**fail**’ category due to their faults and weaknesses in all aspects that interfere communication. There are also some more students who are more thoughtful, skilful and thus they got ‘**credits**’ and in addition to these skills, for the students who are more creative in ideas and well-thought, being excellent and quite distinguished from others, they were awarded ‘**distinctions.**’

It is highly recommended that young learners practically create business reports by using this 7-step plan engaging in the real business situation provided. In fact, it can be said that there are such benefits of learning creating reports as ‘sharpening their professional skills’, ‘getting incentives from co-operating with the business owners’ etc. in this fast-paced communication-crazy world. In fact, the more creative, thoughtful and skilful the young learners, the more engaged in and successful in writing business reports in the HEART of business communication.

On the whole, in this study, it can be claimed that this 7-step plan designed by Ms. Shirley Taylor really provided the learners with a wonderfully interactive, engaging and rewarding teaching and learning experience and helped them to create powerful and effective reports at workplace and thus contribute to business, being professional high-quality business report-writers in the future.

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Effect of Social Innovation Education on Student Engagement in Yangon University of Economics

Eaint Thet Hmoo Khaing*, Chue Myat Chel**, Phyu Phyu Phone Tint**

Abstract

This paper aims to explore the effect of social innovation education (SIE) on student engagement (SE), and to analyze the effect of SE on academic performance of Master of Sustainable Entrepreneurship and Social Innovation (MSESI) students of Yangon University of Economics (YUEco). Census sampling method is applied to collect primary data from 37 MSESI students. Questionnaire survey is conducted by distributing the structured questionnaires to all students. From descriptive analysis, it is found that students well understand that the MSESI program is with new teaching and learning style (focusing on self-learning, practice-based learning, reflective thinking, interaction in class, and knowledge to contribute to the society's sustainability). They have high emotional, cognitive and behavioral engagement, relatively low in agentic engagement. Their perception on underlying educational philosophy has significant positive effect on emotional and behavioral engagement of students. The design principles are influencing on genetic engagement. Their agentic engagement has positive influence on their academic performance.

Key Words: Social Innovation Education, Master of Sustainable Entrepreneurship and Social Innovation, Student Engagement

Background of the Study

Yangon University of Economics (YUEco) launched the new master course: Master of Sustainable Entrepreneurship and Social Innovation (MSESI) in August 2022. The vision of the MSESI programme is “to be an internationally recognized programme in research, learning, and action toward the sustainable development of the well-being of people and planet. The mission is “to develop a network of social entrepreneurs who possess integrated skills, knowledge, and experience with global vision and local commitment to shape the inclusive and sustainable Myanmar business society.

The objectives of this programme are to equip the graduates with the entrepreneurial capabilities to (1) start own social businesses, which generate innovative solutions not only for business sustainability but also for society well-being, (2) be business executives and managers with creative thinking and intrapreneurship virtue in responding to emerging challenges and to cope with new opportunities, (3) engage in independent and life-long learning for continuous improvement of value-sharing between business and society in dynamic environment, and (4) be ethical and socially responsible entrepreneurs in doing businesses to create value.

According to the expected outcomes shown in the brochure of MSESI, after the completion of the programme, the students will be able to (1) integrate the theoretical knowledge of social entrepreneurship and innovation with decision making practices

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toward sustainable competitive advantage, (2) seize the opportunities in various contexts of contemporary business environment, (3) transform innovative business ideas into economic reality toward growth of business and growth of society, (4) undertake social responsibility effectively as an individual entrepreneurs or as members of business organizations, and (5) overcome new challenges of business environment by generating innovative solutions for society.

To reach the objectives and to result the expected outcomes, at one side, the academic board members create new ways of teaching and learning with support from faculty who have experiences of practice-based teaching, reflective teaching, and students' co-creation for an ideal learning-society of good citizens. At the other side, the course structure is developed jointly the academic boards of Yangon University of Economics and Eberswalde University for Sustainable Development, Germany. To implement this course structure effectively, lecturing is lessening, and self-learning and participation in-class and outside class become crucial. The learning management system (LMS) is also supporting to effective implementation of this new teaching and learning style. However, the expected outcomes cannot be reached without student engagement. It is not sure that social innovation education (SIE) itself has attraction to students to be engaged, or it has push-force to students to quit from the programme.

Rationale of the Study

MSESI programme musters the candidates from various regions of Myanmar, if they have high social entrepreneurial intentions and highly motivated with inspiration in their careers to play a leading role in respective organizations with the consciousness of sustainability. Thus, due to the demand from applicants, MSESI uses the hybrid classroom system: students can attend the classes on site as well as online; up to their convenience. Diversity by age (from 23 to 62), diversity by occupation (from various industries and organizations), and by gender (nearly equal ratio of male and female) are distinct characteristics of MSESI. Moreover, according to the course structure, course works are for only 12 subjects, out of total 18 subjects. For credits of the rest 6 subjects, students must submit the social innovation projects (SIPs) by groups. Thus, high collaboration is a base, and high involvement is necessary.

High student involvement is necessary because students must not be absent in-group meetings for SIPs. Moreover, group members must go to the project sites if necessary. The SIP-reports must be based on the data and information of real projects to be implemented or to be improved for creating value for society, and also for business sustainability. In some projects, students need to participate personally in the stages of SIP such as feasibility study, project planning, execution, monitoring, and controlling, and closeout of the project.

Since SIPs and the course work intends to train professionals and entrepreneurs capable of meeting their great needs to create the ideal society to advance the well-being of people and planet, faculty are selected for their professional skills, experiences, quality of research works, and their ability to apply concepts and theory to practice.

They will create exclusivity in learning through experimental, interactive, activity-based, integrative, and learner-centered teaching styles. However, without student engagement, they can do nothing.

Through this new style teaching and learning, MSESI intends to construct the ensconced community of business executives, owners, and students who have the passion to contribute to society with effective business models. The social innovation education itself may have the attributes to students to be engaged. However, this SIE may need to be well organized, well structured, and well equipped. At the other hand, students must be resilient and engaged. Because of tight control for effectiveness of SIE, and also due to student's lack of engagement, the two students quitted from the programme within the first quarter of MSESI. Thus, it is urgently needed to explore the effect of SIE on SE in MSESI programme of YUEco. This paper will explore the effect of social innovation education on student engagement (SE) in Yangon University of Economics (case focusing on MSESI programme of Yangon University of Economics).

Objectives of the Study

- (1) To explore the effect of MSESI's "programme components" on student engagement in hybrid learning
- (2) To analyze the effect of MSESI's "design principles" on student engagement in hybrid learning
- (3) To examine the effect of "underlying educational philosophy" on student engagement in hybrid learning
- (4) To analyze the effect of social innovation education (SIE) on student engagement in hybrid learning of MSESI programme
- (5) To explore the effect of student engagement (SE) on student academic performance in hybrid learning of MSESI programme

Scope and Method of the Study

This study framed with three facts: SIE of MSESI programme, SE in hybrid learning of MSESI Programme, and YUEco's MSESI Programme. There are 37 students in year 2022 (MSESI's commencement year). Census sampling is applied to collect primary data from all students. All respondents filled completely in structured questionnaires distributed to them by questionnaire survey method. The data collection period is from 12 to 16 December 2022. Questionnaire consists of 3 sections: demographic profile, MSESI's SIE, SE of MSESI students. The data for their academic performance is assessed with their class participation and assignment marks given by lecturers and their mid-term and final exam marks of first quarter (from August 2022 to November 2022). The question items for SIE and SE are adapted to the concepts and model developed by (Protosaltis et al., 2021). All the question items are structured with Likert type five-point scales. For data analysis, the descriptive and analytical methods (mean score calculation and multiple linear regression methods) are applied.

Literature Review

Theories (e.g., student engagement theories) and concepts (e.g., social innovation education concepts and philosophies) are reviewed, and empirical studies are also conducted by reviewing the previous research papers.

(1) Literature Review on SE

Astin (1984) developed the student engagement theory. According to (Fletcher, 2007) defined “student engagement” as student’s interest in tasks at hand although this task is challenging and face obstacles, and student has passion to take pride in the completed work. Frondeville (2009) – Mathematics teacher – observed the factors impacting the student engagement based on his own experience. If teachers concern students’ feeling that teachers’ assigned tasks are meaningful, student engagement will be high. The second factor he mentioned is students’ interest in subjects and class activities, which will support to student engagement to be higher. Towler (2010) defined student engagement as:

“The investment of time, effort and other relevant resources by both students and their institutions intended to optimize the student experience and enhance the learning outcomes and development of student, and the performance and reputation of the institution.” (p.3).

Student engagement can be approached from four levels: emotional engagement, cognitive engagement, behavioral engagement, and agentic engagement (Protopsaltis et al., 2021). According to (Fredricks et al., 2004), student’s emotional engagement can be measured with their identification with the programme or faculty or university. DeVito (2016) explained that the student’s identification with programme reflects their feeling of being important, valued, love and been loved, and sense of ownership and belongingness.

Cognitive engagement is students’ interest and involvement in class activities, group assignments, and other learning activities: their enthusiasm to participate in difficult tasks, and in trying hard to reach educational goals (Reeve, 2012). DeVito (2016) stated the behavioral engagement that students’ cooperation, even leadership, effort not only in educational achievement but also extracurricular activities and events of the programme or faculty or university. Reeve (2012) presented that the agentic engagement is students’ prudence concept: pre-prepare or pre-effort for flawless learning environment (e.g., students prepare ease, comfortable, and convenient environment for online learning, also prepare to come to onsite class not lately, and bring necessary resources to class up to personal needs and learning needs).

(1) Literature Review on SIE

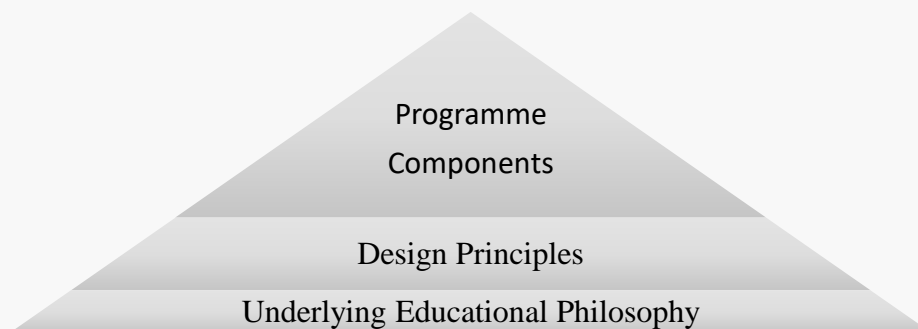
Protopsaltis et al. (2021) explained the SIE as:

“a multidimensional and interdisciplinary educational approach that shares principles from various learning theories and educational philosophies which are thought to foster the empowerment, innovation and socio-political activation of students for more sustainable societies” (p. 390).

This philosophy focused on student's own management for their effective learning and effective contribution to sustainability. According to (Diesendorf, 2000) in D. Dunphy, J. Benveniste, A. Griffiths, & P. Sutton (Eds), there are four types of sustainability: social, human, environmental, and financial sustainability. MSESI is developing teaching and learning community for these four sustainability.

Protopsaltis et al. (2021) also developed the SIE conceptualization model as shown in Figure-1. This model pointed out the SIE three-layers: programme components, design principles, and underlying educational philosophy.

Figure-1 SIE Conceptualization Model



Source: Protopsaltis et al. (2021)

Programme components are co-creation, SIPs community, teachers' professional development, and SIP open learning platform, teachers' competence in SIE, quality of interaction with SIPs, and institutional culture. Co-creation lab or co-creation learning community or learning atmosphere is required for SIE effectiveness where teachers, social innovation practitioners, and students can jointly address the needs in society for sustainability and create positive change either inside or outside the school community (Protopsaltis et al., 2021).

Design principles are student at the center, collaborative problem-solving, transformative social action. Jones (2007) prescribed the SIE is a learner-centered by changing the crucial role of teachers into students' initiatives as major role. Students can learn by their own pace and interest, and must try for reflections to real-life cases, eventually to create real change in sustaining society.

Piaget (1980) in M. Piatelli-Palmarini (Ed.), also supported to this point with self-determination theory (SDT): students can create their learning effectiveness by themselves with support from teachers to their motivation, interest, and to tuning their ways with own pace and preferences. Teachers just need to try to empower students in effective ways. Teachers should build the learning culture for students to personalize their learning to be ease, convenient and effective. The second point of design principles is co-creation by teachers and students for better results (Bovill et al., 2015). Students must involve in making disciplines and guidelines for learning and teaching.

Jones and Perkins (2005) added one thing, which is student's participation in problem solving with their self-confidence. The last point of design principles is

students' social activity in line with good citizen practices (Wood et al., 2013). (Wood et al., 2018) also supported to this point by stating the "Justice-oriented citizens": SIE must encourage students to act with civic duty to take collective responsibility for better society.

Underlying educational philosophy consists of students' motivation activities, real-life social innovations to address community and programme concerns, creating social values, leading to sustainability: four types of sustainability (Kalemaki et al., 2019). Thus, SIE teaching culture enforced the combine action, personal development with collective efficacy, entrepreneurial mindsets with sustainability values, and individual competences with collective competences (Protosaltis et al., 2021).

From empirical studies, there is a significant positive effect of SIE on SE. Protosaltis et al. (2021) proved that the SIE has positive effect on student engagement: on emotional engagement, cognitive engagement, behavioral engagement, and agentic engagement. Hart (2008) in A. Reid, B. B. Jensen, J. Nickel, & V. Simovska observed that design principles is strongly relating to student commitment and engagement. Fredricks et al., (2004) presented that the students' ownership (underlying educational philosophy) has positive support to student engagement.

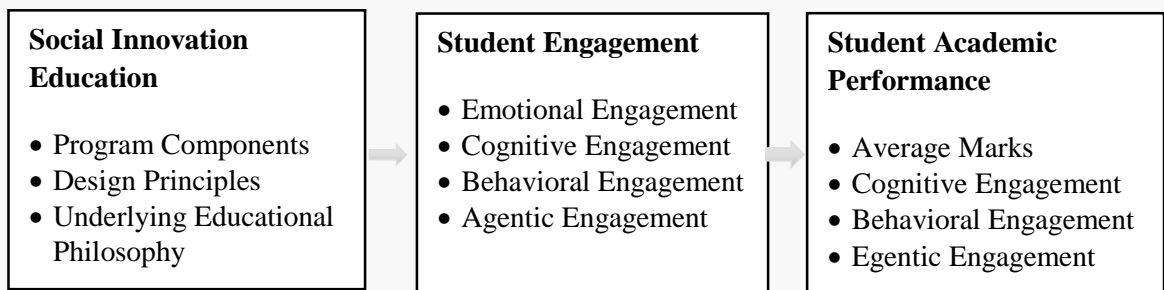
Woodman (2011) also proved that the design principles (providing flexibility under school control) is relating to the student engagement. Cleveland (2011) proved that the innovative learning environment encourage students to be engaged in learning. Kuntze et al., (2015) proved that the SE has strong effect on student academic performance.

Conceptual Framework of the Study

The conceptual framework for this study is developed based on the SEI conceptualization model of (Protosaltis et al., 2021), and findings from some previous papers. This conceptual framework is shown in Figure-2.

Figure-2 Conceptual Framework of the Study

Source: Developed for this Study



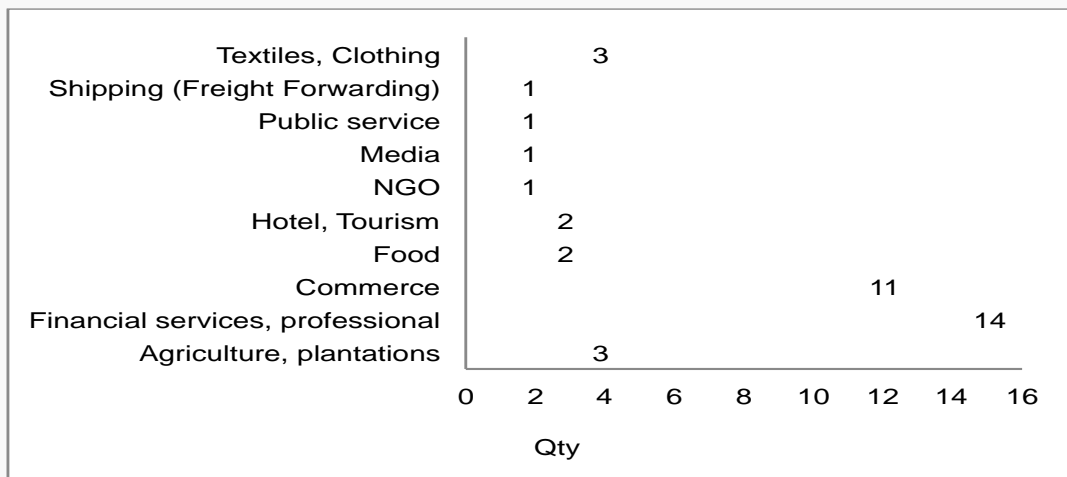
In this study, the social innovation education is measured with three variables such as programme components, design principles, and underlying educational philosophy, presented by (Protosaltis et al., 2021). Student engagement is evaluated

with four types of engagement: emotional, cognitive, behavioral, and agentic engagement, according to (Fredricks et al., 2004), (Reeve, 2012) and DeVito (2016). Student academic performance is measured with marks given for class activities, mid-term test, and final exam of the first quarter since they have completed only first quarter. The relationship between SIE and SE is according to the research works of (Protopsaltis et al., 2021), Hart (2008), Paris et al., (2004), Woodman (2011), and Cleveland (2011). The effect of SE on student academic performance is also adapted from the research of Kuntze et al., (2015) to develop the conceptual framework.

Demographic Factors of MSESI Students

MSESI students are from various industries. The distribution in industries can be seen in Figure-3.

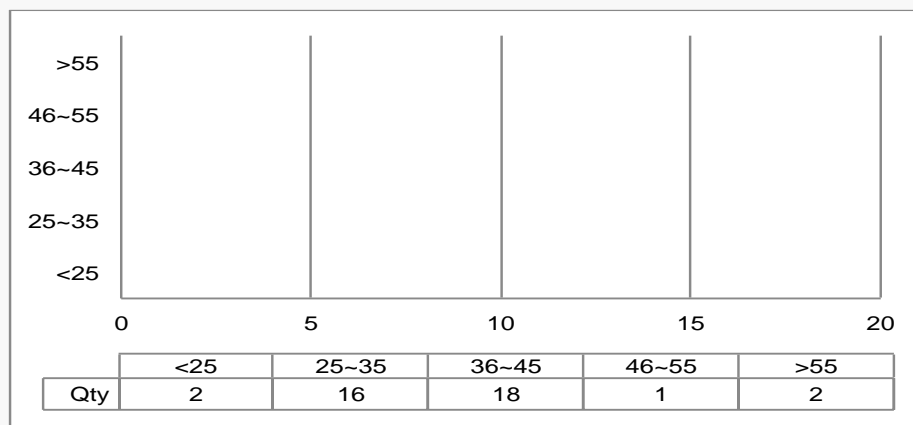
Figure-3 MSESI Students by Industry



Source: Survey Data, 2022

Most of the students are from financial sector and commerce sector. In Myanmar, these sectors create jobs more than other industries. Students by age can be seen in Figure-4, and students by gender can be seen in Figure-5.

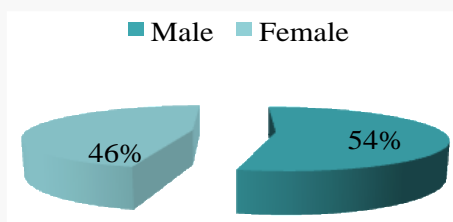
Figure-4 MSESI Students by Age



Source: Survey Data, 2022

As shown in Figure-4, MSESI students are in diverse age ranges (from under 25 to over 55).

Figure-5 MSESI Students by Gender



Source: Survey Data, 2022

In MSESI class, there are 20 male and 17 female, after 2 students quit.

Findings from Descriptive Analysis

In this section, description analysis is conducted and the mean values for each question items of each variable are calculated. According to (Getasew, 2020), the mean values can be interpreted as follows:

From 1 to 1.80 represents “strongly disagree”

From 1.81 to 2.60 represents “do not agree”

From 2.61 to 3.40 represents “true to some extent”

From 3.41 to 4.20 represents “agree”

From 4.21 to 5.00 represents “strongly agree”

(1) Descriptive Analysis on SIE of MSESI

In this study, the social innovation education provided by MSESI programme is analyzed from student’s perception approach. Students’ perception on programme components of SIE is shown in Table-1.

Table-1 Student Perception on Programme Components for SIE of MSESI

Sr. No.	Question Items	Mean Value	Interpretation
1	Student center teaching	4.30	Strongly agree
2	Being prepare ahead the class time to participate in class	4.11	Agree
3	Teaching hours less than learning hours	3.63	Agree
4	More group works than individual work	4.26	Strongly agree
5	Focusing on idea exploration	4.30	Strongly agree
6	Transferrable knowledge and abilities gained from class	4.48	Strongly agree
7	Students’ co-creation with teachers	4.30	Strongly agree
8	Being teachers capable to create the social innovation project community with students	4.44	Strongly agree
9	Trying for professional development through teaching in MSESI	4.26	Strongly agree
General Mean		4.23	Strongly agree

Source: Survey Data, 2022

MSESI students perceived that teacher are teaching with cases, assign group tasks, and more emphasis on self-learning instead of teaching much. Thus, they believe that they can transfer the skills gained from this learning into their real workplace. Students also perceived that the MSESI push high involvement from them, and they must co-create the learning community and social projects for effective contribution to the society. They are sure that they are developing their professional skills through learning at MSESI programme. In general, MSESI students strongly agree that the programme components of MSESI highly focus to elicit the creative ideas from students through new style of teaching: group projects for real change in society, and high involvement and co-creation.

The second element of SIE is design principles: students’ perception on this element is shown in Table-2. As shown in Table-2, students just agree with learning platform’s support to interaction each other and with teachers, as well as they just agree having quality of such interaction. They strongly believe that teaching principles are effective for knowledge and skills to sustain human, social, and environmental quality. However, they do not agree strongly that teaching principles are supporting to their spirit and skills for financial sustainability of their businesses.

Table-2 Student Perception on Design Principles for SIE of MSESI

Sr. No.	Question Items	Mean Value	Interpretation
1	Opening the learning platform to discuss among students each other and also with teachers	4.07	Agree
2	The quality of interactions each other is higher due to teachers’ teaching social innovation subjects	4.11	Agree
3	Teaching to transform students’ mind-set to consider more about sustainability (human and social sustainability)	4.26	Strongly agree
4	Teaching to transform students’ mind-set to consider more about sustainability (environmental sustainability)	4.30	Strongly agree
5	Teaching to transform students’ mind-set to consider more about sustainability (financial sustainability)	4.11	Agree
General Mean		4.17	Agree

Source: Survey Data, 2022

In general, MSESI students agree that the MSESI programme is designed with the principles of experimentation (flexibility) and interaction with major purpose of broadening perspective on sustainability. The underlying educational philosophy is last element of SEI. Students’ perception on this element is shown in Table-3.

Table-3 Student Perception on Underlying Educational Philosophy of MSESI

Sr. No.	Question Items	Mean Value	Interpretation
1	Learning improve the reflective thinking	4.26	Strongly agree
2	Inspiring students to make change for society sustainability	4.44	Strongly agree
3	Instilling students to address community issues	4.44	Strongly agree
4	Applying the practice-based learning	4.41	Strongly agree
5	Gaining personal development due to collective efficacy equipped by MSESI's SIP works	4.15	Agree
6	Achieving both collective competencies and individual competencies	4.26	Strongly agree
7	Having strong institutional culture, focusing on value sharing between society and business	4.26	Strongly agree
8	Mustering good citizens to create ideal society	4.37	Strongly agree
General Mean		4.32	Strongly agree

Source: Survey Data, 2022

As shown in Table-3, students are sure that they are learning through practice-based philosophy encouraging reflection into real world. Thus, they develop both individual competencies and cooperation and collaboration capacities. They are sure that they are in an ideal learning society where good citizens are trying for better society regarding economic, social, human and environmental sustainability philosophy.

(2) Descriptive Analysis on SE in MSESI

In this study, student engagement (SE) is evaluated with four aspects: emotional, cognitive, behavioral, and agentic engagement. Students' emotional engagement can be seen in Table-4.

Table-4 Student Emotional Engagement in MSESI

Sr. No.	Question Items	Mean Value	Interpretation
1	Feeling value of programme and university	4.74	Strongly agree
2	Loving programme and university	4.81	Strongly agree
3	Being proud to be member of MSESI family	4.81	Strongly agree
4	Feeling important in society	4.67	Strongly agree
5	Identifying with MSESI (they are eager to say positives of MSESI)	4.52	Strongly agree
General Mean		4.71	Strongly agree

Source: Survey Data, 2022

The descriptive analysis results prove that MSESI students love much their programme and their university. They will protect their programme from negatives, and they will sustain the positives of this programme. The second type of engagement is cognitive engagement: student cognitive engagement can be seen in Table-5.

Table-5 Student Cognitive Engagement in MSESI

Sr. No.	Question Items	Mean Value	Interpretation
1	Being hesitate to take leave or to be absent	4.07	Agree
2	Being hesitate to close the video camera	3.81	Agree
3	Felling happy to go to the school campus	4.15	Agree
4	Voluntarily engaging in school activities	4.22	Strongly agree
5	Having strong desire to participate in extra curricula activities	4.11	Agree
6	Being eager to contribute to reaching motto of our programme	3.96	Agree
7	Trying to achieve high score/good recognition from teachers in the class activities	4.30	Strongly agree
General Mean		4.09	Agree

Source: Survey Data, 2022

As shown in Table-5, students are hesitating to take leave, or absent. They are strong to participate in school activities and they are enthusiastic to discuss in class. However, they are not strong to open the video cameras during class time. They are also not strong to attend classes in-person, and also not strong to participate in extracurricular activities although they agree to participate. They lack self-confidence to contribute to reach the motto of MSESI: mustering good citizens to create an ideal society.

In general, students agree that they are trying to attend classes regularly, and have desire to participate in class work, for achieving recognition from teachers. The third type of student engagement is behavioral engagement. The MSESI student behavioral engagement can be seen in Table-6.

Table-6 Student Behavioral Engagement in MSESI

Sr. No.	Question Items	Mean Value	Interpretation
1	Having right to experiment some activities (dress code, class attending medium, assignment style, etc.)	4.00	Agree
2	Allowing for complaints or defense directly to teachers	4.19	Agree
3	Having the right to present transparently to the authorities	4.33	Agree
4	Contributing in kind or in cash to programme development or society development	4.15	Strongly agree
5	Controlling personal behavior not to affect negatively on programme's image or value	4.48	Agree

6	Controlling own desires if this desire will lead to programme's negative outcome	4.33	Agree
7	Choosing way which will shape good image of programme, even though don't personally like this way	4.07	Strongly agree
General Mean		4.22	Agree

Source: Survey Data, 2022

As shown in Table-6, students strongly agreed that they will avoid behavior if it harms for the programme, even they will pay priority to the programme's development by sacrificing their own desires. They agree that they have the right to present their difficulties transparently to the top management of this university, if they have right reasons. They also agree that they can do complaints for good reasons.

They will contribute to the programme, and they will favor the programme development even though through the way they do not like it personally. In general students engage behaviorally in the MSESI programme. Table-7 shows the student agentic engagement in MSESI.

Table-7 Student Agentic Engagement in MSESI

Sr. No.	Question Items	Mean Value	Interpretation
1	Preferring to attend the classes in-person (onsite) although the school give option (in-person or online).	4.00	Agree
2	Manage learning environment: to be quiet, comfortable, and easy to learn online with full attention	4.19	Agree
3	Preparing well before the class: to be ready for note taking	3.33	True to some extent
4	Preparing ahead the class: read the cases and concepts in chapters	3.15	True to some extent
5	Trying to discuss in online class: note questions relating to respective lectures to ask in class	3.90	Agree
6	Devoting time to attend classes regularly: manage balance between work, class, and family	3.36	True to some extent
General Mean		4.22	Agree

Source: Survey Data, 2022

From the results of descriptive analysis on student agentic engagement, students would like to discuss the cases in class, and they are also eager to ask questions to teachers in class.

Although they prefer to come to the campus, due to their personal and business constraints, they manage their learning environment for convenient and effective online learning. They have many stresses and pressures to devote enough time to attend classes, and to trade-off between work, family and class. However, in general, it is found that they agree that they have agentic engagement in MSESI.

Findings from Linear Regression Analysis

Findings from analysis on effect of SIE on SE (emotional engagement) are shown in Table-8. The three elements of SIE (programme components, design principles, and underlying educational philosophy) are independent variables and first SE element (emotional engagement) is dependent variable.

Table-8 Effect of SIE on Emotional Engagement of MSESI Students

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	VIF
	B	Std. Error	Beta			
Constant	1.977	0.691		2.859	.009	
Programme Components	0.282	0.181	0.348	1.561	0.132	2.061
Design Principles	-0.046	0.115	-0.070	-0.400	0.693	1.272
Underlying Educational Philosophy	0.401*	0.239	0.401	1.677	0.107	2.364
R Square	0.445					
Adjusted R Square	0.373					
F Value	6.154***					

Source: Survey Data, 2022

Dependent Variable is “Emotional Engagement”

*** Significant at 1 percent level

** Significant at 5 percent level

* Significant at 10 percent level

In MSESI programme, students are emotionally engaged due to its underlying educational philosophy. They love MSESI, and they are highly committed to this programme because this programme provides the opportunity to them to do effective contribution and real change for better society, and they can involve in projects of human, social, environmental, and economic sustainability. Findings from analysis on effect of SIE on SE (cognitive engagement) are shown in Table-9.

Table-9 Effect of SIE on Cognitive Engagement of MSESI Students

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	VIF
	B	Std. Error	Beta			
Constant	1.919	1.230		0.748	0.462	
Programme Components	0.518	0.321	0.404	1.614	0.120	2.061
Design Principles	-0.127	0.205	-0.122	-0.621	0.541	1.271
Underlying Educational Philosophy	0.349	0.425	0.220	0.821	0.420	2.364
R Square	0.299					
Adjusted R Square	0.208					
F Value	3.272**					

Source: Survey Data, 2022

Dependent Variable is “Cognitive Engagement”

*** Significant at 1 percent level

** Significant at 5 percent level

* Significant at 10 percent level

In MSESI programme, students’ cognitive engagement is not depending on the programme components, design principles, and underlying educational philosophy. Just depending on their personal and business constraints, they will come to campus, or they will attend online with full attention (opening the video cameras) or without interaction (closing the video cameras). Their time devoting to attend classes and to participate in school activities is not depending on the programme’s components, design and underlying philosophy. Findings from analysis on effect of SIE on SE (behavioral engagement) are shown in Table-10.

Table-10 Effect of SIE on Behavioral Engagement of MSESI Students

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	VIF
	B	Std. Error	Beta			
Constant	-0.417	1.104		-0.378	0.709	
Programme Components	0.006	0.288	0.005	0.020	0.984	2.061
Design Principles	0.189	0.184	0.181	1.027	0.315	1.271
Underlying Educational Philosophy	0.887**	0.381	0.558	2.326	0.029	2.364
R Square	0.441					
Adjusted R Square	0.368					
F Value	6.039***					

Source: Survey Data, 2022

Dependent Variable is “Behavioral Engagement”

In MSESI programme, students’ behavioral engagement is depending on the underlying educational philosophy. They are contributing to MSESI, and they will try for future brighter programme because this programme provides the opportunity to them to do effective contribution and real change for better society, and they can involve in projects of human, social, environmental, and economic sustainability. Findings from analysis on effect of SIE on SE (agentic engagement) are shown in Table-11.

Table-11 Effect of SIE on Agentic Engagement of MSESI Students

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	VIF
	B	Std. Error	Beta			
Constant	1.668	0.999		1.669	0.109	
Programme Components	0.399	0.261	0.392	1.529	0.140	2.061
Design Principles	0.314*	0.167	0.380	1.884	0.072	1.271
Underlying Educational Philosophy	-0.214	0.345	-0.171	-0.621	0.541	2.364
R Square	0.264					
Adjusted R Square	0.168					
F Value	2.754*					

Source: Survey Data, 2022

Dependent Variable is “Agentic Engagement”

Because of the design principles (focusing on interactions among students and between teachers and students, and because of focusing on instilling the mind-set and attitude towards social, human, environmental and economic sustainability of the society), students will prepare ahead the class: read cases, note questions to discuss in class, and prepare environment for effective online learning, and devote time to attend classes regularly with full attention (agentic engagement).

Multiple linear regression analysis results from effect of SE on student academic performance are shown in Table-12.

Table-12 Effect of Student Engagement on Academic Performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	VIF
	B	Std. Error	Beta			
Constant	1.394	1.277		1.092	0.287	
Emotional Engagement	-0.248	0.314	-0.153	-0.789	0.439	1.941
Cognitive Engagement	-0.227	0.211	-0.223	-1.075	0.294	2.198
Behavioral Engagement	0.158	0.216	0.156	0.732	0.472	2.320
Agentic Engagement	0.895***	0.184	0.695	-0.621	0.000	1.043
R Square	0.571					
Adjusted R Square	0.493					
F Value	7.321***					

Source: Survey Data, 2022

Dependent Variable is “Academic Performance”

Performance”

Students’ academic performance (grades or marks received at exams) is depending on their agentic engagement. To gain high academic performance, they have to prepare for learning environment to be convenient for effective online learning. When they learn in person or online, they need to prepare ahead by reading cases and concepts, they need to devote time for regular classes, and they also have to participate in group tasks.

Conclusion

This study focuses on the effect of SIE on SE, and influence of SE on academic performance of YUEco’s MSESI students. It is found that students are very positive with the programme components (e.g., student-centered and practiced based teaching, and co-creation between teachers and students, and providing transferrable skills and knowledge), and with the design principles (encouraging interactions and involvement, and major intention is sustainability of society), and they perceived that the educational philosophy of MSESI is to be good citizens and to contribute effectively to the better future of the society. This underlying educational philosophy has significant effect on students’ emotional and behavioral engagement. The design principles have positive effect on their agentic engagement. Their preparation ahead the class time is due to the design principles of encouraging interactions and enforcing sustainability of the society. However, their cognitive engagement (pay full attention to lectures and participating in extracurricular activities) are totally up to their personal concerns and

limitations. Their academic performance is largely depending on their agentic engagement.

Acknowledgement

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THE EFFECT OF HUMAN RESOURCE MANAGEMENT PRACTICES ON LABOR DISPUTES IN MYANMAR

(Case Study: Garment Factories in Yangon)

Hla Tun Khine*

ABSTRACT

Labor disputes are an important issue for the labor-intensive industry, and it creates workplace unstable and dissatisfaction between employers and employees. It directly impacted the industry's productivity and the country's economy. This study focuses on "the Effect of Human Resource Management Practices on Labor Disputes in Myanmar". The objectives of the study are to identify the factors that caused labor disputes in garment factories in the Yangon Region, to study the HRM practices, and to examine the effects of Human Resource Management practices on labor disputes in garment factories. This study applies a qualitative approach by using the Key Informant Interview (KII) method with the selected 25 key informants. The study finds the most common workplace disputes (conflicts) were demission or termination, factory shutdown and redundancy, and asking for increased wages. HRM practices are poorly exercised in most garment factories such as a lack of HR Planning analysis, no specific HR Department, and no systematic HRM practices. As the suggestions, the factory should set up the full-fledged Human Resource Department with competent and relevant officials who have expertise in various department functions and should apply systematic Human Resource Management practices. It might reduce labor disputes and support conflict resolution processes in the workplace.

KEYWORDS: Labor Dispute, Labor-Intensive Industry, Human Resource Management

I. INTRODUCTION

From 2010 to 2020, Myanmar was undergoing a rapid transformation. As Myanmar undergoes fast socio-economic and political transformation, the country's ability to foster business growth will rely in part on how it acknowledges and defends the rights of both employees and employers. After some decades of isolation, change has come quickly to the political and economic environment, including the country's labor market. As the investors evaluated their alternatives and risks, a dispute resolution system that helped to address employer-worker conflicts promptly and effectively was required to build confidence in long-term business prospects, particularly for industries that rely on a large workforce. The effect of these labor disputes is detrimental to the employers as well as to the workers. The employers are affected as their production is hampered, the machines and equipment are damaged, more time is wasted while sending goods to the buyers, and their image in the international market is diminished. The workers are affected as they lose their wages and jobs, which also impacted their social life. All these effects hamper the economic growth and development of the country needed to attain the "Sustainable Development Goals (SDGs)" by alleviating poverty, hunger, and inequality by ensuring decent work, peace, and justice by 2030.

Rationale of the Study

According to rapid changes in the political situation, as well as the consequences resulting from the socio-economic conditions, it is of great importance to establish a cooperative relationship between employers and workers to succeed in the competitive business world. During this time, the employer and employee have to support each other.

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The employer and employee can achieve two goals at once: increase productivity and improve the quality of work life. Empirical studies suggest that productivity and quality of work life go hand in hand.

Many qualified human resources are urgently needed in various sectors; political, economic, and social fields for the development of a country. In addition to formal education, skills development training is needed to prepare for the emergence of qualified human resources. Better on-site human resources can be created by arranging for on-the-job training to be provided by HRM officials in the relevant industries upon arrival at the workplace. As well as the need for vocational training, there is a great need for technical training in each field. Human Resource Management (HRM) is essential in all economic and social spheres in terms of workplace requirements. Systematic application of Human Resource Management practices in the relevant work is essential to manage workplace happiness and well-being. In addition to increasing productivity, it is also essential for reducing workplace conflicts. The most common problems in various sectors of the economy in Myanmar are a lack of skilled labor, ineffective employer-employee relations, lack of systematic management of workplace disputes, very poor workplace rules with legal compliance, weak policies, and very poor adherence to labor laws. These incidents are most often caused by poor Human Resource Management practices in the workplace and employers' and workers' disputes due to poor management of workplace issues. Employer-employee disputes can affect not only the progress of the workplace but also the family life of each employee. Businesses are affected by mass disputes, not just individuals. In addition to declining workplace productivity, these could hurt the productivity of the country itself, disrupting its GDP growth, and even affecting per capita income.

However, the garment sector is facing some common issues: the lack of skilled-labor is a major challenge, and turnover is significant; neither workers nor employers have significant experience in social dialogue and factory-level engagement. There is a lack of awareness of Labor Laws and Human Resource Management practices by employers and employees alike, and compliance with Labor Laws and Rights is not properly practiced. There is the issue of a lack of enforcement of factory rules and regulations as well as the dismissal process which is improper in many cases.

These points are specific issues related to employers and employees in the garment industry, which have been sources of conflict, many of which have gone unnoticed because of socio-economic impacts. Garment factories are facing many issues in the workplace, such as low productivity, high expenses, and more conflicts. Regulations concerning Employment Contracts (EC) with fixed terms are difficult in principle, and labor strikes have occurred, affecting several employers who failed to follow the factory's rules and regulations. Moreover, it has been found that there are many problems with HRM practices, or even a complete lack thereof.

Consequently, this study needs to examine the causes of the labor dispute and HRM practices in garment factories. Therefore, this study investigates the effect of Human Resource Management practices on labor disputes in garment factories in Yangon.

Objectives of the Study

The objectives are to identify the factors that caused labor disputes in garment factories in the Yangon Region, to study the HRM practices, and to examine the effect of Human Resource Management practices on labor disputes in garment factories.

Method of Study

In this study, the qualitative methods were applied by conducting Key Informant Interviews (KII). Face-to-Face Interviews technique is used in key informant interviews. The study consisted of 25 key informants in face-to-face interviews including the factory owners and HR executives of certain garment factories, Human Resource Experts, the authorized persons of the Myanmar Garment Manufacturers Associations (MGMA), the mediators from Township Conciliation Body, the Arbitrators of Labor Dispute Settlement Arbitration Body and Council, and the officials from the Ministry of Labor, to collect primary data on real situations through their particular knowledge and understanding related with the interview topics. Existing data are also gathered and received from books, research articles, reports, newspaper articles, and other documents from official websites, and the Ministry of Labor to determine what additional information needs to be collected from key informants.

II. LITERATURE REVIEW

Human Resource Management (HRM) deals with the people who are working in an organization by designing and coordinating different employee management activities. HRM is a critical aspect of every organization's long-term competitive edge and success (Khan, 2010).

According to Devenyi (2016), effective HR negotiations are required completely in HR management situations such as employment discussions, corporate team building, labor and management talks, contracts, managing disputes, and employee compensation. Based on unique social interactions, negotiations can be of extraordinary types, and business negotiations are one of the most regularly met sorts of negotiation practice. Business negotiations also vary relying on the sorts of transactions that they serve. HR negotiations are sorts of business negotiations. Therefore, Human Resource Management plays an important role. Labor relations are the term used to define processes between employers and employees, and management and trade unions make decisions within an organization. The decisions made refer to wages, working conditions, working hours, workplace safety, and complaints. For organizations/industries without unions, disputes involve directly (Ana-Maria Bercu and Ana Iolanda Vodă, 2017).

An additional, HR role in labor disputes is conflict resolution. Most of the time, the HR department acts as a mediator between the employer and the employees. It creates quick responses to conflicts and ensures that the employer does not violate employee rights. In their capacity as mediators, HR managers act the labor relations disputes through the interpretation of organizational policies, employment, and labor laws. HR's role in dispute resolution involves balancing a confluence of issues, including labor relations, allegations, and workplace injuries. As a mediator, HR acts as a bridge between the management and labor unions/employees in resolving issues that may lead to strikes or layoffs of employees as well as litigation (Mask, R. & Osnat Adler, M.A, 2018). Similar to HRM like the procedure on justice within the workplace, HRM also ensures that there is a compensation mechanism for such cases. When an injury occurs as a result of employer negligence, HRM must ensure that it mitigates potential claims by providing compensation and medical treatment for the lost income and injuries (Roni Mash, 2018).

According to Rahman (2020), the labor dispute was regarded as the most critical issue that the Bangladesh readymade garment sector was facing. Labor dispute (LD) created a lose-lose situation and harmed the interest of both the employees and employers, hence posing challenges to obtaining sustainable development goals (SDGs) by impeding the country's economic development. This study investigated the "Effects of Human

Resource Management Practices on Labor Dispute of Readymade Garment Sector of Bangladesh”, to meet SDGs on schedule, Harmonious Industrial Relations (HIR) is needed in the readymade garment industry. both the employers and workers change their mindsets and build an environment of mutual understanding and trust. Highly motivated and committed workers consider the interests of their employers as their own and always try to avoid disputes.

According to Lulu, Meng, et al., (2017), in terms of employers and employees are frequently inharmonious, and conflicts are inevitable and an essential part of organizational life. The three studies reported in this paper addressed issues related to aspects of workplace conflict in organizations and found suitable conflict resolution methods. The first study linked and developed three aspects of conflict in labor relations, including interest-based, rights-based, and emotion-based conflicts. The second study examined two sets of individual outcomes of labor relations conflicts and discovered that labor relations conflicts harmed employee job satisfaction and affective commitment and had positive effects on employee turnover intention and counterproductive work behavior. The third study examined the efficacy of partnership practices as an alternate approach to settling labor disputes. Future study ideas on the dimensions of labor relations dispute, as well as its results and solutions, are provided in these papers.

Cassoni et al., (2012) studied the effects of Human Resources Management Practices on Organizational Performance in Uruguay since 2005. It does this by looking at the different ways that industrial relations have changed. It is used in the CRANET Survey. The CRANET Survey is used to assess the impacts of union variables on performance in the different sectors by multivariate models, as well as the effects and interactions of calculative or collaborative HRM practices on the performance of the firm, as measured by gross benefits, productivity, and quality. Last, the different effects of these HRM practices under different levels of union influence are looked at. The results show that there are many different plans (bundles) and different complementarities under different regimes, as well as the importance of introducing the destination between calculative and collaborative practices.

Functions of Human Resource Management

Human Resource Management is an important function in a company. The fact that organizations have employees makes it a necessity within a firm. The involvement of individuals in the organization means that conflicts are unavoidable among employees and between employers and employees. HRM plays an important role in labor relations disputes within organizations. The department acts as a mediator and a liaison between the employers and the workers either directly or through labor unions. The role of HRM extends beyond wage negotiations to conflict management and negotiation in bargaining. HRM concerns with policies and practices that assure the best use of human resources for achieving the organizational objectives as well as individuals’ goals by providing them with enough motivation to remain committed, qualified, and flexible. The HRM practice is defined and split into the following groups as the functions of Human Resource Management in the organization.

- HR Planning and Analysis
- Recruitment and Selection
- Training and Development
- Compensation and Benefits
- Employee’s Health, Safety and Security
- Employee Relations

III. OVERVIEW OF THE GARMENT INDUSTRY

In Myanmar, almost garment manufacturing is woven products. The majority of garment factories can still take place in the domestic market and need to improve efficiency, processes, quality, and compliance. The main garment export markets are Japan, Korea, Spain, Germany, the United Kingdom, and Turkey. Before 2020, the garment industry of Myanmar was rapidly developing. It was at a juncture where it had the opportunity to develop and transform itself into a leading garment manufacturing hub in the world. MGMA and other industry-based initiatives are working to establish benchmarks and standards designed to improve the conditions of workers apparently; recognizing those good labor standards and health and safety practices will prove key in ultimately building a garment industry in Myanmar that can compete well on the global stage. For the time being, 543 factories are actively involved. Most Yangon Industrial Zones provide for the agro-based industries, wood-based industries, textiles and garment industries, food production industries, machine tools and spare parts industries, and porcelain and chemical industries. These zones contain a mixture of domestic and foreign investment. Many workers in the garment sector live in the related industrial zones. In 2005, the Myanmar government introduced a scheme of industrial zones to encourage increased investment in manufacturing. In 2012, there were over 20 designated industrial zones around the country.

Table:1 - Numbers of Factories in Yangon (Membership in MGMA, Oct 2022)

Sr. No.	Region	Industrial Zone	No. of Factories	Total
1	Yangon	East Yangon	90	476
2		West Yangon	6	
3		South Yangon	4	
4		North Yangon	376	

(Source: MGMA)

The garment sector is one of the main driving forces for economic development in any developing country. The enhancement of conditions in garment factories is a key factor due to the vital role they play in export earnings, the labor market, job opportunities, and sustainable business development in terms of GDP. Therefore, it can support GDP growth as well as job opportunities through labor-intensive operations. The garment industry thus performs best when employers, workers, and other stakeholders work together. (Ministry of Labor, 2022). The garment industry is the main source of domestic employment in Myanmar. It has created job opportunities for citizens. The garment industry of Myanmar has a huge potential to contribute to national economic growth as a significant source of employment and attracting foreign investment. To achieve its full potentials success, the garment industry needs to overcome some major challenges, such as poor infrastructure, lack of management skills, a weak banking system, a lack of skilled labor, lack of training and development, lack of technology, economy and political stability, low productivity, an underdeveloped supply chains, laws enforcement, and regulations. It needs a comprehensive strategy and government support to overcome these challenges. In general terms, a dispute is a disagreement or conflict between two persons or parties for a particular interest. The causes of labor disputes are related to the variables consisting of interest disputes. As per data from MOL, the most common disputes in the

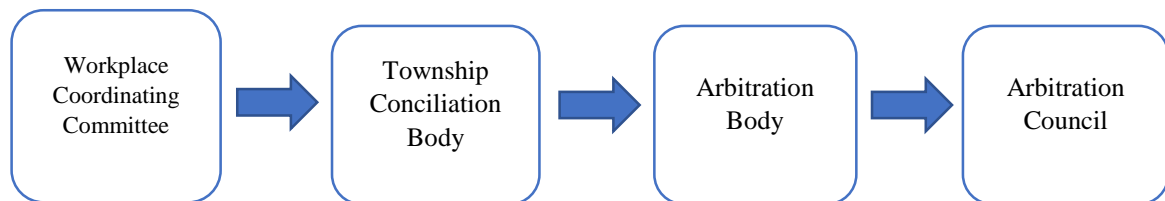
workplace of the Garment Sector can be classified types of disputes such as termination issues, wages for skillful, Annual bonus, attendance bonus, bonus for productivity, asking for an increase in wages, factory shutdown, redundancy, asking for basic salary increment and allowance, and Discrimination issues.

This refers to the socio-economic impact and lack of Human Resource Management practices that affect labor disputes in the organization. Lack of management and poor procedures affect industrial peace to a large extent. Most labor disputes occurred in Yangon where so many factories were located and including local and international garment factories. Among labor disputes, termination cases are the most occurrence between employees and employers.

The Process of Labor Dispute Settlement

The International Labor Organization (ILO) in their Guide to Myanmar Labor Law defines labor disputes as ‘disagreements between workers or Labor Organizations and one or more employers or their organizations concerning workplace issues such as employment, working, termination(s), all forms of compensation and benefits, health and safety issues, injuries, accidents or deaths as well as leave and holiday issues’ (Checkley, Jason Judd, and Janet C., 2017). Therefore, disputes are considered to be a component of labor relations. Myanmar’s Settlement of Labor Dispute Law (2012), or SLDL, and the dispute resolution system have been in place in Myanmar for a decade. Numerous disputes have been submitted to the Township Conciliation Bodies, and some disputes have progressed from the township level to Region or State Arbitration Bodies, and then to the Arbitration Council. Workers and employers agree that having this mechanism is helpful as a channel for negotiation and expert intervention outside of the courts, but they also express irritation and difficulty with how decisions are made and carried out. (Pyidaungsu Hluttaw, Myanmar, 2012). The SLDL outlines a process with mechanisms for resolution at the workplace, township, regional and national levels through which parties can bring interest disputes of both parties, and receive inputs and support from knowledgeable parties to reach an agreement.

Figure:1 - The Steps of Labor Dispute Settlement



Source – Ministry of Labor

When grievances arise between labor and management, the first attempt at resolution is through direct negotiation between management and labor. Under the SLDL, the employer with more than 30 workers requires to establish a Workplace Coordinating Committee (WCC) to negotiate collective agreements and resolve grievances.

IV. ANALYSIS OF RESEARCH RESULTS This chapter mainly focuses on the data analysis and finding from 25 Key Informants as respondents who are related to Garment Industry by using Key Informant Interviews (KII). The interviewing questions focus to examine the effect of Human Resource Management Practices on Labor Disputes in Garment Factories, in Yangon. The 25 Key Informants participate in the face-to-face interviews; 7 are garment factory owners, 3 are HR executives from garment factories, 3 are Human Resources Experts, 3 are officials from the Myanmar Garment Manufacturers Association (MGMA), 6 are Arbitrators who resolve labor disputes, and 3 are officials from the Ministry of Labor. In this study, why those 25 Key Informants are selected, because all the Key Informants link with the research topic, they have specific backgrounds, and they can support the idea and information for every single question of the study. The study is designed with the use of both quantitative and qualitative data collection tools. The quantitative method is used from secondary data sources to study the Garment Factories in Yangon and the labor dispute settlement processes. In this study, the KII method is used for primary data analysis for human Resource Management Practice and also got the secondary data source (reviewed books, Laws, journal articles, reports, and data from the Myanmar Garment Manufacturers Association (MGMA) and Ministry of Labor (MOL) which are collected to be reviewed to reflect and meet with the objectives of the study.

Purpose of Key Informants Interviews

Key Informants Interviews were qualitative in-depth interviews with 29 questions. The purpose of the key informant's interviews was to collect data about the effect of human resource management practices on labor disputes in Garment Factories through their knowledge and understanding to get insight information.

Planning the Key Informant Interviews

According to the UCLA Center for Health Policy Research, key steps of KII interviews such as planning, implementing data collections, and reviewing the results accordingly of key informants are step by step. There were collected and reviewed on the existing data and reports to determine what additional information needs to collect from key informants. The necessary information was gathered for grouping together collected information about Human Resource Management Practices in garment factories, and causes of Labor Disputes in Garment Factories. There were prepared for the key informant interviews to identify what kinds of information wanted to gather and how to prepare for the best and formulate primary questions to get the answers. After drafting the primary questions, there were determined what types of data is needed which helped to identify the best informants to interview. Before selecting key informants, it is mapped out the targeted representatives who are from the garment industry related to the research, HR Experts, arbitration processes, and the concerned Ministry. Key Informants are carefully selected who are linked with the research-targeted representatives from the garment industry and who can provide relevant knowledge and information related to the research title "The Effect of Human Resource Management Practices on Labor Disputes in Garment Factories". Selection processes are done step by step.

Analysis of Key Informants Interviews – KII Results

The study approached the qualitative method for data collection to meet the objectives. The data included information about HRM practices, the number of labor disputes in garment factories from 2020 to 2022 August, the causes of the labor dispute, and HRM practices in garment factories, in Yangon. In this study, qualitative data are

gathered from the key informants interviewed to examine the effect of Human Resources Management Practices on labor disputes in garment factories in Yangon, Myanmar.

Table: 2 - KII results for whether the HR department in garment factories should have or not

No.	Types of Respondents	Support	Oppose	Don't Know
1	Factories Owners	6	1	0
2	Members of the Township Conciliation Body, Arbitration Body and Council	6	0	0
3	Human Resource Experts	3	0	0
4	Human Resource Executives from Garment Factories	2	1	0
5	The officials from the Ministry of Labor	3	0	0
6	Authorized Person from Myanmar Garment Manufacturers Association (MGMA)	3	0	0
7	Total	23	2	0

(Source - Author's Contribution)

Most of the respondents supported “It should have the HR department in garment factories” because they agreed absolutely HR Department is to be supportive to develop employees’ skills and performance, to increase productivity, and to get workplace stability and peace.

Some respondents principally agreed to strengthen Human Resources Management, but they additionally discuss that disputes occurred to not only the lack of Human Resource Management Practices but also other factors are needed to consider. Although they also principally accept that Human Resource Management Practices are important to reduce disputes and to prevent potential disputes occurrences in the workplace, the other issues also include the consideration factors such as financial support, technologies, infrastructures, effective operational management, moreover rules and regulations, directives, law enforcement by concerned Ministry which still needed to be more streamlined and supportive, especially for the labor-intensive organization.

“Support”

“If we can manage full of capacity in our factory, yes, of course, HR Department should have in factories. But, for the time being, we are not yet operating with a specific HR department for employee affairs and only manage through the admin department.”

“I would like to say agree that every factory should have an HR department or unit for daily employee affairs. In our factory, we have an HR manager and two staff, they were managing the whole factory’s employee affairs according to the management instructions. Although we don’t have a specific HR department, we could manage as much as we can for employee affairs.”

“Oppose”

“It is not necessary to form the HR Department separately, it can be managed by General Manager together with Admin and HR”. “The nature of the garment sector is not the same as others, therefore HR department did not need to form separately.”

V. CONCLUSION

This research paper mainly focuses on the Human Resources Management practices in the garment sector and how affect labor disputes. This paper is concerned with HRM practices, that is very important for the garment sector in terms of getting high-productivity of factories through HRM practices in a factory and reducing labor disputes in the garment factories.

The most common problems in various sectors of the economy in Myanmar are a lack of skilled labor, ineffective employer-employee relations, lack of systematic management of workplace disputes, very poor workplace rules with legal compliance, weak policies, and very poor adherence to labor laws. These incidents are most often caused by a lack of Human Resource Management practices in the workplace and disputes between employers and employees due to the lack of management on workplace issues. In order to meet workplace requirements, Human Resource Management is very important in all economic and social spheres. Employer-employee disputes can affect the progress of the workplace, and affect the family life of each employee and employers as well. In addition, HRM practices are important to increase productivity and reduce workplace disputes. Systematic application of Human Resources Management practices in relevant workplaces is essential to gain business growth and to get well-being, and to be happy in the workplace.

Businesses are negatively affected by mass disputes occurring in day-to-day operations, it could not only affect the individual employer, or an employee but also impact productivity decline. Moreover, it could also hurt and disrupt the country's GDP growth, and even affect per capita income. The Ministry also spends a lot of the extra budget on labor disputes. These data indicate that there is no HR planning in the garment factories and there is a problem in the implementation of HR practices as well. It means that there is a lacking of HR planning and analysis in this sector.

Findings

In garment factories, Human Resource Planning is not operating properly because there has no specific HR Department in most of the factories. They only have so-called manpower planning as a part of the HRM practices. All the employee affairs are handled by the Administrative Department, which could not analyze the impacts of the factories and identify the needs of Human Resources and availability of human resources. Also, most factories are lack performance appraisal practices, very weak in job analysis in internal transfer processes, and have no proper Human Resource Development Processes in most factories although most respondents agree that HR Department should be formed specifically, and HRM practices also should be applied in factories. Some factories pretend to have the role of HR in the workplace because they want to show up their factories how are smart even though they have no specific HR Department and HRM practice systematically.

According to the interview result, all the respondents concern with training which is very important for the productivity of factories. The skilled-labors are needed at all levels of factories' operations to workplace effective and efficient. The factories have orientation programs for the employees as on-the-job training is conducted for lower-level

employees in every unit of the factories. A few numbers of supervisors and above level only have a chance to join in Skills Development Training, Management Training, and other relevant training. Those training is conducted in the factory occasionally and sometimes outside by MGMA and by other professionals. But, all of the employees at every level do have no access to the training and only a few people who are supervisors and above level can get the chance to join. It also has no sufficient training facilities in factories. Some factories conducted workplace safety training, fire safety training, and another job-related training program if necessary, but not much.

Most factory owners follow the minimum wage policy and pay basic salaries and benefits according to promulgated laws. Although employees get the basic salary and benefits as per law and regulation, employees are still struggling for their survival and work-life balance as well as inflation. In Yangon, living costs are very high. Some factories provide lunch and others allowance for employees, but not much at all. In terms of a happy working environment, some factory owners arrange special bonuses and yearly retreat programs, and entrainment programs for the employees for stress reduction. There were some compensation and benefits programs practiced for the employees according to the factory's rules and regulations. But, not much fully provide at all levels.

Security, Health, and Safety issues are very important for all Garment Factories. Most Garment factories have factory clinics for workers. Every garment factory follows the rules and regulations related to workplace safety and security morally and legally. The workplace must be equipped with all safety equipment and materials for all workers to be safe. All garment factory owners have responsibility for the sake of security, health, and safety. But, most of the employees are not follow the workplace disciplines related to health and safety in their safety and precaution practices.

Although most of the local-owned factories' management have engaged with employees while observing in the workplace, they could not meet regularly as scheduled meetings. When the WCC representative informs management about employee affairs and other workplace requirements, the management team contacts WCC as much as possible in respect of coordination processes. Those kinds of practices occur in some factories and it is good practice for employers' and employees' relations. Also, discriminations in the workplace are very rare, it is good for employers' and employees' reputations and images.

WCC has to coordinate the disputes for getting peaceful conditions between employees and employers. But there is a very rare satisfied issue at the WCC level and most disputes continue with Township Conciliation Bodies (TCBs) for better results. Every one-fourth of disputes go to the Arbitration Bodies (ABs) because whether employees or employers are not satisfied with the mediation result in Township Conciliation Bodies (TCBs). Over 60 percent of disputes also conduct by the Arbitration Council (AC), if not satisfy the decisions of (ABs), the employer or employee can get the decisions of the Arbitration Council as the final stage of the arbitration process. The dispute should take a good resolution at the WCC level if the issues are not much difficult as ever. It concerns only the way how employees and employers approach disputes, their negotiation skills, and the role of HR a vital role for getting results and satisfaction.

These all findings demonstrate that some of the garment factory owners have well knowledge and understanding of Human Resource Management practices, but they do not want to apply yet in the business for the reason of expenses and the controversy of Human Resource Management functions. They interest more in business profits through productivity rather than to activate Human Resource Management functions. And also, they assume that Human Resource Management functions are merely one of the factors for factory operation. The reason why the role of Human Resource Management is not functioning at all in the garment industry.

Suggestions

Based on this study, we would like to suggest to the garment industry that they should set up the full-fledged Human Resource Department with competent and relevant local personnel who have expertise related to various functions of the department instead of appointing an international expert who did not know local contents and traditional norms, particularly recruitment and selection so that organizations will be able to conduct full scale of job analysis and prepare the updated job descriptions and specifications.

All the employees should take the responsibilities and accountabilities related to their specific duties, should obey all the rules and regulations stipulated by the factory, should create good communication channels with factories management and employers, and should conduct the relevant training program such as on-the-job training, skills development training, workplace safety training, and labor laws awareness training, etc. The factory management and employers need to handle problems as soon as possible to keep them from simmering and giving birth to recurring conflicts. While they try to solve the disputes in the first step, WCC is a very important role. The representatives of WCC have to participate in conflict resolution and function with good faith.

The factory owners, management, and HR team need to understand well the legal obligations, and the implementation of labor-management procedures. Therefore, the factory should arrange awareness training on the existing labor laws for the management and employees. Employers and employees should work with trade unions to raise awareness of existing labor laws and workers' rights and to revise the standard Employment Contract to make it workable for business sectors. It improved the dispute resolution process by cooperating more closely with labor organizations and civil society organizations to resolve labor disputes promptly. The lack of applying the proper HRM Practices in the workplace will lead to the increasing number of disputes. If it occurs a labor dispute, employer and employee relations are affected. Consequently, it can negatively impact employers, which means that the factory's productivity will be reduced. As the employees, their income can decrease and also will have risk in employment. If those conditions are repeated, the factory also can be a negative impact on workplace stability. Moreover, to reduce the labor disputes in garment factories, the employees and employers need to practice the following points, as well as the other concerned persons and the departments of the Ministry respectively.

To reduce labor disputes, employers needed to engage regularly with employees to understand the real situation of the workplace and to know their requirements at the operation level, in that case, HR can also provide necessary information to the employers. If mutual understandings are active in the workplace as corporate culture, information flow will be systematically operated and its impact that workplace disputes will be reduced definitely. If both sides commit and follow accordingly as per their responsible, all the actions are an approach to all person well-being, and the workplace will become full of happiness and success. All concerned persons need to take the lessons learned from the disputes that have occurred in the workplace and should prepare for the prevention of potential disputes in the future. Mutual understanding, good relations, and trust-building mechanisms should be activated between employees, employers, and factory management. These all practices might be supportive of conflict resolution processes and reduce labor disputes in the workplace.

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**A STUDY ON KNOWLEDGE, ATTITUDE AND PRACTICE OF
CONTRACEPTIVE UTILIZATION AMONG REPRODUCTIVE AGED
MARRIED WOMEN (CASE STUDY - HMAWBI TOWNSHIP)**

May Myo Myint Khaing*

ABSTRACT

Knowledge, attitude and practice of contraceptive utilization was done with the married women from Hmawbi Township who were interviewed with structured questionnaires. Participants were between 18 to 49 years with the mean of 38.7 (± 7.79) years. About 60 % had high school level education and above. Majority of the married women (77%) were housewife and only 23.3 % were employed. Over half of their husband were above 40 years old and majority of them were government staff. The most common contraceptive methods knew by the respondents was oral contraceptive pills (88 %) followed by injection depo (85.3 %). The most common sources of knowledge for contraception were health care provider. Current contraceptive use was 74% but only 25 % of the women with no children used contraceptive. It also found that the age of the respondents and their husband, total number of children and their attitude on contraceptive are the factors that directly effect on the contraceptive use. Based on the findings, it was recommended that the health information regarding contraceptive methods should be more shared to the married women in order to reduce maternal mortality and morbidity among the married women.

Key words: Contraceptive, Contraceptive utilization, reproductive age women

I. INTRODUCTION

Contraception is an integral part of reproductive health. Moreover, it widely accepted that contraception use is one of the most important determinants of fertility, mortality, material and child health. The level of contraceptive utilization is an obvious and widely accepted measure of achievement of reproductive and birth spacing programs. On the other hand, utilization of contraceptive methods can help reduce the number of material deaths. Contraception utilization is a practical method for reducing poverty but family planning and contraception are still do not fully use. The study of knowledge, attitude and practice on contraceptive use among married women in Hmawbi Township Area was done. The findings from this study may provide some information to improve birth spacing services to some extent with an ultimate goal in order to reduce maternal mortality and morbidity resulting from abortion.

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II. LITERATURE REVIEW

Jain, & Muralidhar defined contraception as “the intentional prevention of conception through the use of various devices, sexual practices, chemicals, drugs, or surgical procedures” (Jain, & Muralidhar, 2011). Obtaining the highest ease and privacy with the lowest cost and side effects is also the aim of contraceptives (Jain, & Muralidhar, 2011). Some barrier methods such as condoms give the protection of transmission of sexually transmitted diseases (Jain, & Muralidhar, 2011). Mainly Methods of contraceptive can be divided into traditional method, modern method and surgical methods (Jain, & Muralidhar, 2011). Traditional contraceptive method are abstinence, the lactational amenorrhea method, calendar method coitus interruptus (withdrawal method), and cervical mucus method. Male condom, female condom, oral contraceptive pills, injectable contraceptive, and pills for emergency contraception are modern contraceptive methods. Moreover, intrauterine devices (IUDs), female sterilization (tubectomy) and male sterilization (vasectomy) are surgical methods (Aung Thu, 2014).

According to the World Health Organization “In 2019, there are 1.1 billion women of reproductive age group (15-49 years) worldwide have a need for family planning”. (WHO, 2022). Ofonime stated that “there are 842 million of reproductive age women who are using any contraceptive methods, and 270 million of women have an unmet contraceptive need among the 1.9 billion. The women who had desired to use family planning has increased markedly from 900 million in 2000 to nearly 1.1 billion in 2020” (Ofonime, 2017). The proportion of women who need family planning fulfilled by using modern contraceptive methods has gradually increased from 77% in 2000 to 77% in 2020. The reasons for this slow increase are inadequate choice of methods and access to services, fear or experience of side-effects, cultural or religious disagreement, poor quality of available services, and gender-based barriers to accessing services (WHO, 2022).

There are also increasing in the modern contraceptive methods’ utilization. However, the women population with unmet need for modern methods among those wanting to avoid pregnancy was decreased from (29 percent) 210 million in 2003, to (26 percent) 222 million in 2012 (Jain, & Muralidhar, 2011).

According to Report on Situation Analysis of Population and Development, Reproductive Health and Gender in Myanmar (2010), approximately one million women give birth each year in Myanmar, and the maternal mortality ratio (MMR) remains high; for every 100,000 live births were an estimated 316 maternal deaths in 2004-2005. In Myanmar, the population of women is 53.2% of total population according to 2019 Myanmar’s Inter-census survey. In Myanmar, the unmet contraception need in 2021 for the married women was 15.5%. Nationally, the unmet contraception need in 2006 was estimated at 17.7 percent of all currently married women of reproductive age (4.9 percent for spacing and 12.8 percent for limiting), a slight reduction from 19.1 percent in 1997 (5.8 percent for spacing and 13.3 percent for limiting). The choice of one modern contraceptive method is usually influenced by the availability of options locally and the influence of the method promoted by national family planning programmes (FRHS, 2016).

III. OBJECTIVES OF THE STUDY

The objectives of the study are:

- (i) To identify the knowledge and attitude of contraceptive and contraceptive utilization among married women
- (ii) To examine the association between the sociodemographic characteristics of married women, maternal characteristics, husband characteristics and their contraceptive utilization among married women
- (iii) To identify the association between knowledge and attitude of contraceptive and contraceptive utilization among married women

IV. DATA AND METHODOLOGY

Cross-sectional descriptive study design was used to explore the knowledge, attitude and practice of contraceptive use among the married women from Hmawbi Township. Study Area was Hmawbi Township. It is located at the Northern District in Yangon Region. Hmawbi Township is organized with four wards, 39 village tracts and 195 villages. Sample surveys are the most commonly use method for the primary data collection. The household survey is conducted to obtained the required information.

Married women residing in the selected one ward of Hmawbi Township Area was included as a survey population. Hmawbi area in Yangon Region was selected as study area. The study period was from July 2022 to October 2022.

There were (4) wards in Hmawbi township and (1) ward was selected purposively due to the limitation cost, transportation and communication. Ward 4 was selected and it has a total of 751 house hold and among them, (150) Households were selected by systematic sampling. Data summarization was done by using table and graphs and analyzed by using appropriate statistical tests such as Chi square.

The questionnaire was used to collect the required information. Data was collected by interviewing method in which interviewers administered questionnaire in Myanmar language, visited house to house and conducted face to face interview with the helps of three assistant interviewers. The questionnaire basically consists of three parts: (Part 1) socio-demographic characteristics of respondents and their husbands, (Part 2) knowledge and attitude on contraceptive and (Part 3) Contraceptive use among the respondents. Informed consent was taken explained about the questions how to answer multiple response questions.

In this study, knowledge, attitude and practice on contraceptive use among the married women are assessed and it also asked about sociodemographic characteristics of married women, husband characteristic and marital characteristic such as respondent's age, race religion, education, working status of the respondent, their family monthly income, age of their husband, their husband's race, religion, education and occupation, age of the first marriage, number of living children and age of first pregnancy of the married women.

Regarding scoring, correct knowledge is set as one and incorrect and don't know response are given zero. In practice questions regarding contraceptive use, there was no scoring. However, it was shown by frequency. Knowledge level of the respondents

regarding contraceptives was divided into two groups, low and high based on mean score. Below mean was set as low knowledge but medium and equal mean were set as high knowledge groups. Regarding attitude toward contraceptive use of the respondents was divided into positive attitude and negative attitude group based on mean attitude score. Below 38 score was negative attitude group and 38 score and above 38 was positive attitude group.

V. FINDINGS

A. Sociodemographic characteristics of study population

Table (1) Sociodemographic characteristics of reproductive aged women

Sociodemographic characteristics	Frequency	Percentage
Age		
≤30 years	27	18.0
31 to 40 years	58	38.7
>40 years	65	43.3
Total	150	100
Education		
Illiterate, Read and write	7	4.7
Primary school	20	13.3
Middle school	34	22.7
High school	53	35.3
University & Graduate	36	24.1
Total	150	100
Occupation		
Housewife	115	76.7
Manual worker/ seller	13	8.7
Skilled/ professional	5	3.3
Others	17	11.3
Total	150	100
Monthly family income		
≤200,000 MMK	44	29.3
200,001 to 300,000 MMK	79	52.7
>300,000 MMK	27	18.0
Total	150	100

(Source: Survey Data)

About 44 % were over 40 years, 38.7 % were 31 to 40 year's age group and the remaining were 30 years and below. Majority of the participants were Myanmar, and Buddhist. Regarding the education status, one respondent was illiterate and 6 respondents (4 %) were only read and write. However, about 60 % were high school level and above.

In terms of occupation, majority of the married women (115, 77%) were housewife and only 23.3 % of the respondents were employed.

Table (2) Maternal characteristics of study population

Maternal characteristics	Frequency	Percentage
Age at first marriage (n= 150)		
≤20 years	53	35.3
21 to 30 years	90	60.0
31 to 40 years	7	4.7
Total	150	100
Age at first pregnancy (n= 142)		
≤20 years	22	15.5
21 to 30 years	104	73.2
31 to 40 years	16	11.3
Total	142	100
Total number of children (n= 150)		
No children	8	5.3
1 to 2 children	95	63.4
≥ 3 children	47	31.3
Total	150	100

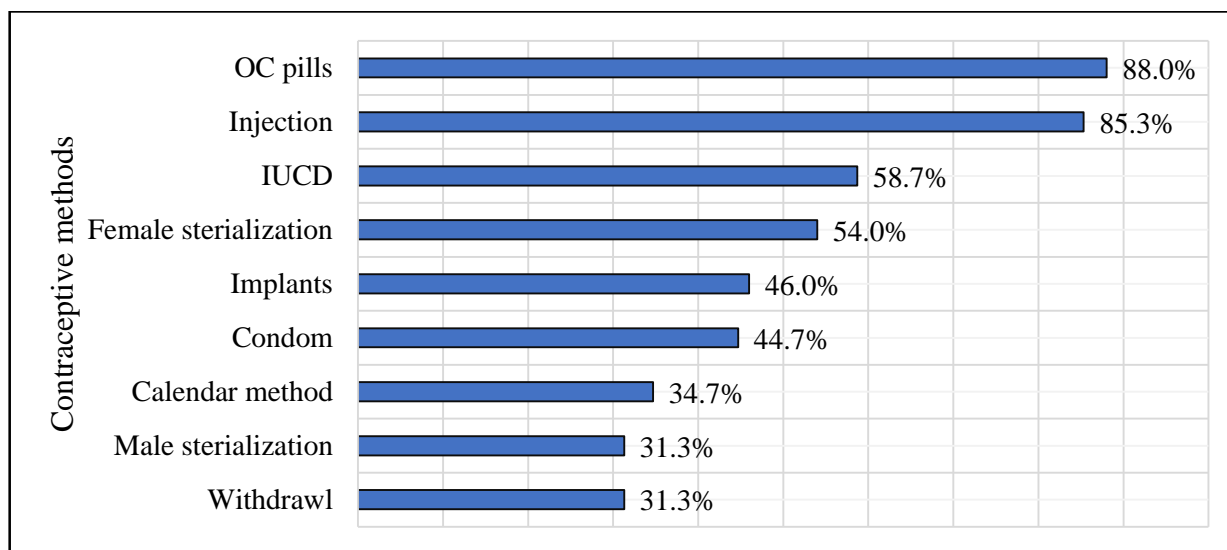
(Source: Survey Data)

About one third of the respondents married ≤20 years of age and 60 % of the respondents married at the age of between 21 to 30 years. There was only 4.7 % who were married over 30 years of age. Mean (SD) age at first marriage was 22.97 (4.16) years with the minimum age of 16 years and maximum age of 38 years.

Among the respondents, 8 women had never given birth to a child. Minimum age at first pregnancy was 18 years and maximum age was 40 years with the mean (SD) age of 24.87(4.63) years. Among a total of (142 participants who had children, majority of the participant became pregnant between their age of 21 to 30 years. Among a total of (142 participants who had children, two third of the participants had one or two children and 31.1 % had three children and more.

Husband characteristic of the participants were also assessed such as their husband's age, race, religion, education level, and occupation. Age distribution of the husband ranged from 25 to 59 years with the mean (SD) age of 42.29 (8.69) years and median age of 42 years. Nearly 55 % of husband were over 40 years of age. Similar to the participants, majority of the husband were Myanmar, Buddhist. Regarding the education status, more than 60 % were high school level and above. In terms of occupation, majority were government staff.

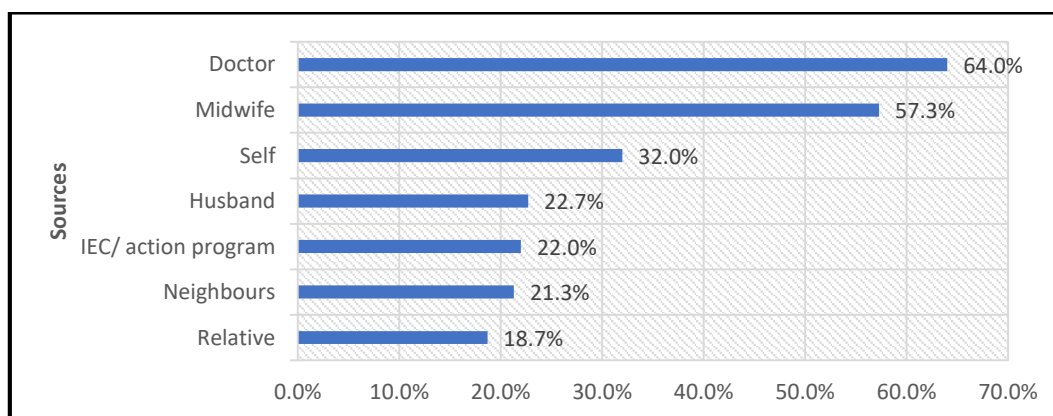
B. Knowledge of the respondents regarding contraceptive



(Source: Survey Data)

Figure (1) Knowledge on different methods of contraceptive

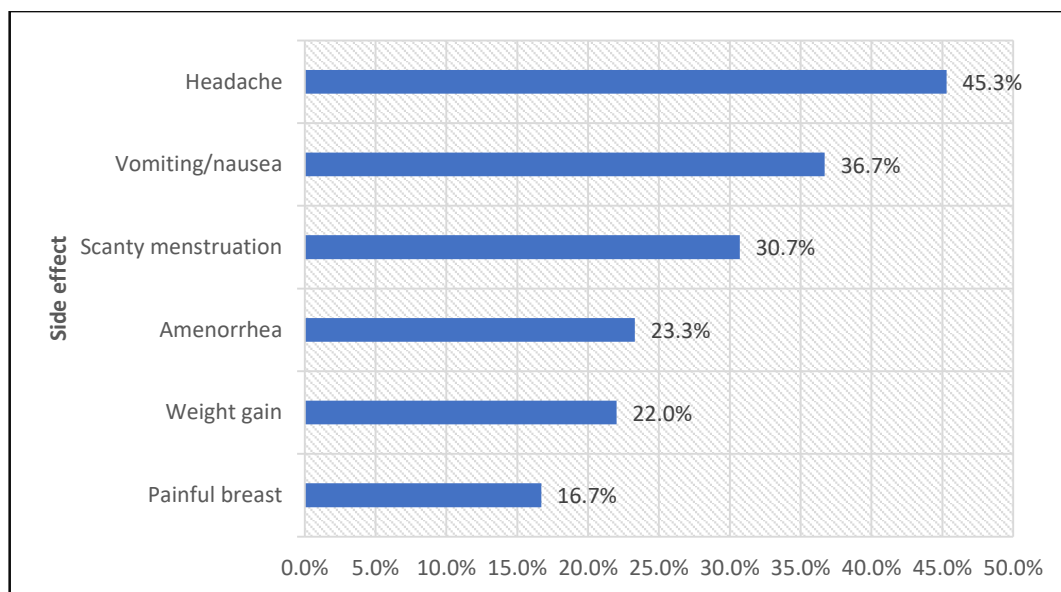
All the participants already heard about the methods to prevent pregnancy. Among the methods oral contraceptive pills were the most common methods (88 %) and which was followed by injection depo (85.3 %). Only 46% know about implants and 45% heard about condom. Both male sterilization and withdrawal were the least common method of participants’ answer (31%).



(Source: Survey Data)

Figure (2) Sources of knowledge for contraception among the participants

The most common sources of knowledge for contraception among the participants were health care provider (doctors and midwife) which was followed by self (32 %), husband (22.7 %), IEC/action program (22 %), neighbors (21.3%) and relatives (18.7 %).



(Source: Survey Data)

Figure (3) Side effect of contraceptive drug

Among the respondents, 123 (82 %) heard the side effects of the contraceptives. The side effect that they mentioned were headache (45.3%), vomiting/nausea (36.7 %), scanty menstruation (30.7 %), amenorrhea (23.3 %), weight gain (22 %) and painful breast (16.7 %).

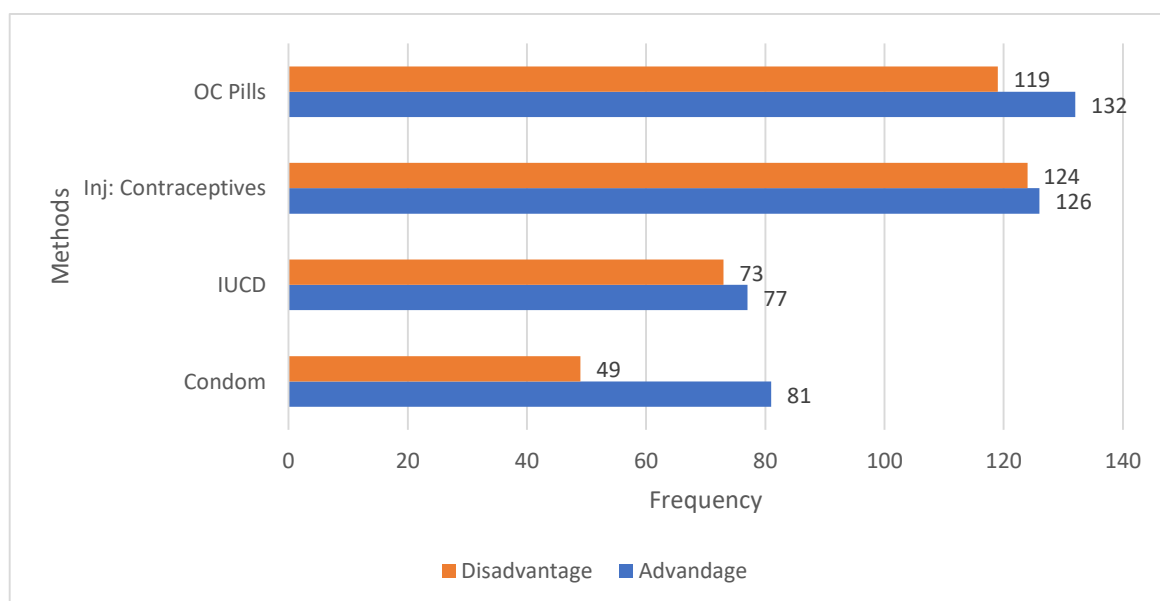


Figure (4) Knowledge of the women on advantages and disadvantages of contraceptive methods

Although 88 % of the respondent had knowledge on advantages of OC pill, only 79.3 % had knowledge on disadvantage. Regarding condom, 81 women knew advantages of condom but only 49 women knew disadvantages of condom.

C. Attitude on contraception

Table (3) Attitude on contraception (n=150)

Attitude	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean
	n (%)	n (%)	n (%)	n (%)	n (%)	
Contraception is needed to get the healthy family life	71 (47.3)	74 (49.3)	3 (2.0)	2 (1.3)	0 (0)	4.43
Contraceptive can improve the mother health	25 (16.7)	83 (55.3)	27 (18.0)	15 (10.0)	0 (0)	3.79
The use of contraceptive is against the human nature*	18 (12.0)	31 (20.7)	40 (26.7)	59 (39.3)	2 (1.3)	2.97
Condom is comfortable to use	7 (4.7)	33 (22.0)	104 (69.3)	5 (3.3)	1 (0.7)	3.27
Condom has fewer side effects than other methods	7 (4.7)	43 (28.7)	98 (65.3)	2 (1.3)	0 (0)	3.37
Use of one month O.C pills is the reliable methods of contraception	24 (16.0)	84 (56.0)	34 (22.7)	8 (5.3)	0 (0)	3.83
O.C pills increase the risk of cancer	2 (1.3)	19 (12.7)	119 (79.3)	10 (6.7)	0 (0)	3.09
Use of three-month Depo-injection is the reliable methods of contraception	18 (12.0)	91 (60.7)	36 (24.0)	5 (3.3)	0 (0)	3.81
The use of emergency contraceptive methods is the reliable methods of contraception	5 (3.3)	50 (33.3)	85 (56.7)	8 (5.3)	2 (1.3)	3.32
The use of IUCD is the reliable methods of contraception	9 (6.0)	62 (41.3)	76 (50.7)	2 (1.3)	1 (0.7)	3.51
The use of contraception is the best consequence for health	11 (7.3)	32 (21.3)	57 (38.0)	48 (32.0)	2 (1.3)	3.01
Total Attitude Mean Score with SD	38.39 (\pm 3.27)					

(Source: Survey Data)

*Negative statement

The eleven attitude questions regarding contraceptive were used to assess the respondents' attitude on the contraceptive. The score was given using the Likert scale. For the positive question, the strongly agree was given one, disagree was two, neutral was three, agree was four and strongly agree was five. And the score was reversed for the negative question.

D. Knowledge and Attitude level on contraception among the married women

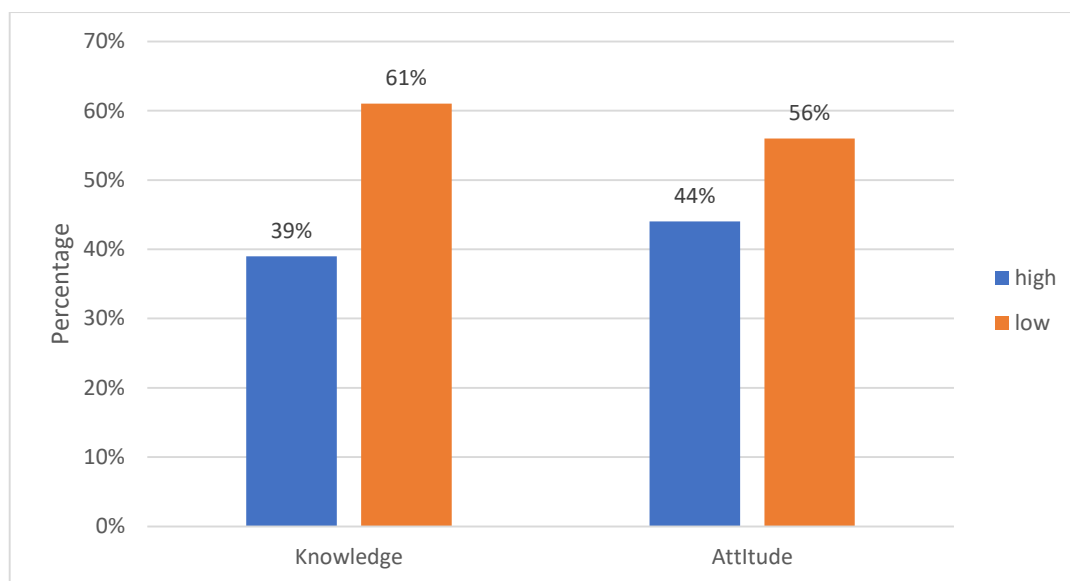


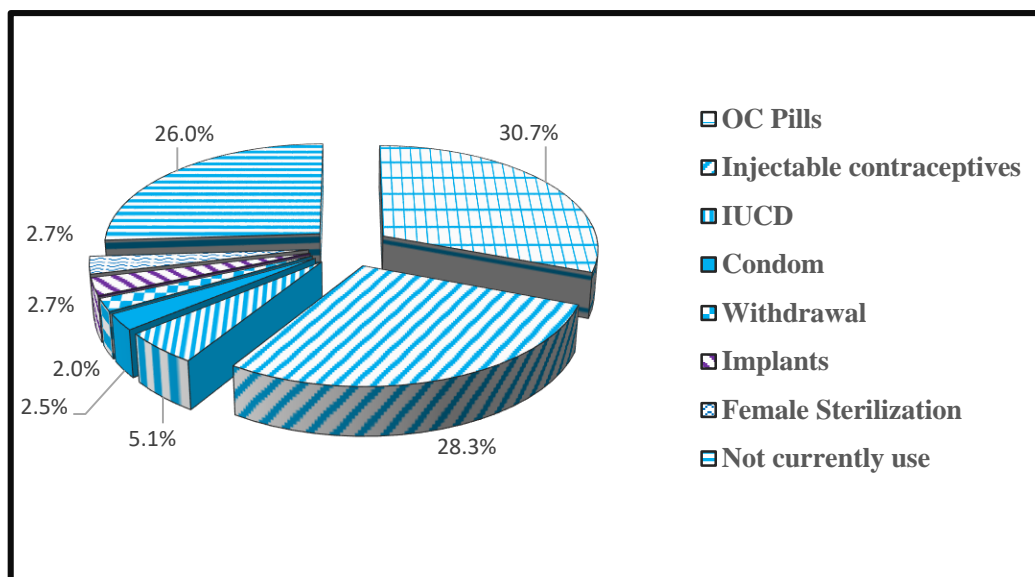
Figure 5. Knowledge and Attitude level on contraception among the married women (Source: Survey Data)

Maximum given score of knowledge was 70 and minimum score was 0. Knowledge score of study population ranged from 2 to 70 with the mean score of 27.3 (± 14.9) and median score was 24. Knowledge score of the respondents' regarding contraceptive was divided into two groups: high and low group, based on the mean knowledge score. Knowledge score of 28 and above was defined as high knowledge and < 28 was defined as low knowledge group. According to this cut off point, 59 (39%) had high knowledge level on contraception.

Maximum given score of attitudes was 55 and minimum score was 11. Attitude score of study population ranged from 31 to 52 with the mean score of 38.39 (SD ± 3.27) and median score was 38. Attitude score of the respondents regarding contraceptive was divided into two groups: based on mean attitude score. Attitude score of 38 and above was defined as high attitude and < 38 was defined as low attitude. According to this cut off point, 66 (44%) had positive attitude on contraception.

E. Practice of currently contraception use among the respondents

Out of 150 respondents, 111 (74 %) currently used contraception of any type currently and 39 (26%) were not using currently. In this survey, 39 (26%) respondents out of 150 respondents were not currently using any contraceptive methods. The methods of contraception used among the married women were OC pill (30.7 %), injection (28.3%), IUCD (5.1 %), condom (2.5%), withdrawal (2 %), implants (2.7 %), female sterilization (2.7 %).



(Source: Survey Data)

F. Relationship of sociodemographic characteristics, maternal characteristics,

Table (4) Association between sociodemographic characteristics and contraceptive use

Sociodemographic characteristics	Contraceptive use		Chi square test	P value
	Yes n (%)	No n (%)		
Age				
≤30 years	23 (85.2)	4 (14.8)	7.278	0.026
31 to 40 years	47 (81.0)	11 (19.0)		
>40 years	41 (63.1)	24 (36.9)		
Education				
Up to Primary school	16(59.3)	11 (40.7)	4.021	0.259
Middle school	26 (76.5)	8 (23.5)		
High school	40 (75.5)	13 (24.5)		
University/graduate	29 (80.6)	7 (19.4)		
Occupation				
Housewife	84 (73.0)	31(27.0)	2.508	0.429*
Manual worker/ seller	9(69.2)	4 (30.8)		
Skilled/ professional	3 (60.0)	2 (40.0)		
Others	15 (88.2)	2 (11.8)		

(Source: Survey Data)

*Fisher’s exact test

Regarding the demographic characteristic, age of the respondent was significantly associated with the contraceptive use with the p value of 0.026. The younger the age, the more the contraceptive used. Among the women with ≤30 years age group, 82.5 % used contraceptive and it was reduced to 81 % among the women with 31 to 40 years age group and reduced to 63.1 % among over 40 years age group. Even though women with higher

education level were more contraceptive used, it was not statistically significant. Other demographic variables such as race, religion, occupation and income were not significantly associated with the contraceptive use.

Table (5) Association between maternal characteristics and contraceptive use

Maternal characteristics	Contraceptive use		Chi square test	P value
	Yes n (%)	No n (%)		
Age at first marriage				
≤20 years	43 (81.1)	10 (18.9)	2.825	0.243
21 to 30 years	64 (71.1)	26 (28.9)		
31 to 40 years	4 (57.1)	3 (42.9)		
Total number of children				
No children	2 (25.0)	6 (75.0)	16.6	<0.001
1 to 2 children	79 (83.2)	16 (16.8)	51	
≥ 3 children	30 (63.8)	17 (36.2)		

(Source: Survey Data)

Among the women with no children, only 25 % used contraceptive. Otherwise, women with children used contraceptive from 64 to 83 %. There was significantly association between total number of children and contraceptive use with the p value of less than 0.001. The younger the age of youngest child, the more the contraceptive used. However, it was not statistically significant. Other maternal characteristics such as age at first marriage and age at first pregnancy were not significantly associated with contraceptive used.

The statistical association between husband characteristics such as their husbands' age, race, religion, education, occupation and contraceptive use of the respondents were calculated with Chi square test and/or Fisher's exact test.

Table (6) Association between husband characteristics and contraceptive use (n=150)

Husband characteristics	Contraceptive use		Chi square test	P value
	Yes n (%)	No n (%)		
Age				
≤30 years	14(73.7)	5 (26.3)	13.549	0.001
31 to 40 years	46 (92.0)	4 (8.0)		
>40 years	51 (63.0)	30 (37.0)		
Education				
Up to Primary school	9 (60)	6 (40.0)	5.246	0.153
Middle school	21 (63.6)	12 (36.4)		
High school	40 (76.9)	12 (23.1)		
University/Graduate	41 (82.0)	9 (18.0)		

Occupation				
Manual worker/ seller	11 (64.7)	6 (35.3)	3.672	0.269*
Skilled/ professional	15 (75.0)	5 (25.0)		
Government staff	84 (76.4)	26 (23.6)		
Others	1 (33.3)	2 (66.7)		

(Source: Survey Data)

*Fisher's exact test

Similar to age of respondents, age of husband was significantly associated with contraceptive use. Women with husband of younger age groups were more contraceptive used.

Similar to the education level of respondents, women with husband of higher education level were more contraceptive used. However, it was not statistically significant.

Other husband characteristics such as race, religion and occupation status were not significantly associated with contraceptive used.

Table (7) Association between knowledge, attitude and contraceptive use (n=150)

Knowledge and attitude	Contraceptive use		Chi square test	P value
	Yes n (%)	No n (%)		
Knowledge level			0.347	0.556
High	31 (77.5)	9 (22.5)		
Low	80 (72.7)	30 (27.3)		
Attitude level			5.336	0.012
High	55 (83.3)	11 (16.7)		
Low	56 (66.7)	28 (33.3)		

(Source: Survey Data)

Although women with high knowledge level were more used the contraceptive, it was not statistically significant. In this study, it was found that there was the statistical association between the attitude level of the married women and their contraceptive use. Therefore, married women with high attitude level more used the contraceptive than women with low attitude level regarding contraceptive.

Conclusion and Recommendations

Contraceptive use helps couples and individuals realize their basic right to decide freely and responsibly if, when and how many children to have. The growing use of contraceptive methods has resulted in not only improvements in health-related outcomes such as reduced maternal mortality and infant mortality, but also improvements in schooling and economic outcomes, especially for girls and women. Therefore, all the married women should know about all types of contraceptives and their advantages and disadvantages. The easy ways to explain the contraceptive methods to the married couple should be done so that different education level of the community could understand these methods clearly.

In this study, nearly half of the respondents didn't know about IUCD, condom and female sterilization methods. Moreover, only 10% to 28% of the respondents knew the advantages and disadvantages of IUCD and female sterilization. Therefore, information sharing about these methods should be done more for the community.

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AN ASSESSMENT ON FOOD SAFETY KNOWLEDGE, ATTITUDE AND PRACTICES OF STREET FOOD VENDORS IN SANCHAUNG TOWNSHIP, YANGON REGION

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ABSTRACT

Street food vendors are considered legal businesses without a license but under the control of the Yangon City Development Committee (YCDC). Temporary sales are permitted from 3:00 PM to 8:00 PM without registration fee and zone restrictions. The main objectives of the study are to examine the level of knowledge, attitude and practice on food safety of street food vendors in Sanchaung Township, Yangon Region. The quantitative methodology used for this investigation was simple random sampling. In order to preserve personal hygiene, all street food vendors believed in hand washing before work. Surprisingly, mostly street food vendors knew that personal protective equipment such as mask, gloves, and caps are the parts of personal hygiene. The mean value shows that mostly respondents have agreed to the knowledge questions, attitude questions and most of the respondents have sometimes practice. The study suggested that public health department, and the Yangon City Development Committee to be encouraged on food safety training with specialized courses according to the global health guidelines for street food vendors. The local authority should implement the motivational campaigns and food safety advocacy programs that target street food vendors to encourage the use of hygienic practices.

Keywords: Food safety, Street Food Vendor, Food-borne disease, Knowledge, Attitude, Practice of food handling

I. Introduction

1.1 Rationale of the Study

The term street food refers to a wide variety of ready-to-eat foods and beverages sold and sometimes prepared in public places. Street food may be consuming where it is purchased or can be taken away and eaten elsewhere (WHO, 1996). Street food vending is a prevailing and distinctive part of a large informal sector. Worldwide increase of unemployment and poverty are the key factors behind people tend to run street food businesses because it requires minimal experience and capital to set up (Addo, Gyimah, Vampere, 2020). Street food plays a vital socioeconomic role by providing food and nutritional supports to the lower and middle-income people at a reasonably low price and is value for the unique taste of its food items. Around 2.5 billion people worldwide consume street foods per day (Fellows & Hilmi, 2011).

There are different types of food vending sites including mobile stalls, roadside stands and hawkers depending upon the ingenuity of the individual, resources available, type of food sold and the availability of other facilities.

It is becoming a key public health priority because a large number of people take their meals outside the home. As a result, the people exposed to foodborne illnesses that originated form food stalls, restaurants and street food vendors.

The World Health Organization (WHO) estimates that as much as 70% of diarrhoeal diseases in developing countries are believed to be of foodborne origin (WHO, 2002). WHO recognizes that foodborne diseases include a wide spectrum of illnesses which are a growing public health problem worldwide and are a major contributor to

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illness, compromised nutritional status, less resistance to disease and loss of productivity. According to the latest WHO data published in 2020 Diarrhoeal diseases Deaths in Myanmar reached 7,237 or 2.01% of total deaths.

Street food safety is a critical public health issue in the developing countries, including Myanmar. Many people live in urban areas are eating outside their homes in restaurants, fast food stalls and street food vendors. In Yangon Region, street food vendors are typically cluster in overcrowded areas including residential areas, near the workplaces, bus and railway stations due the hope of sales.

1.2 Objective of the Study

The main objective of this study is to investigate the knowledge, attitude and practice of food safety and hygiene among local street food vendors in the Sanchaung Township, Yangon Region area.

The specific objectives are:

- (a) to identify current business situation of street food vendor at Sanchaung Township, Yangon Region;
- (b) to examine the level of knowledge, attitude and practice on food safety of street food vendors at Sanchaung Township, Yangon Region; and
- (c) to find out the relationship between sociodemographic and knowledge, attitude and practice on food safety in Sanchaung Township.

1.3 Method of Study

This study mainly focuses on 150 street food vendors using random sampling method and conducted in Sanchaung Township, Yangon Region. The study used the descriptive analysis method based on both primary data and secondary data. Primary data is collected 150 respondents with self-administered, structured questionnaires from street food vendors who are serving food for consumers in Sanchaung Township, Yangon Region. The secondary data is obtained from reports and fact from Ministry of Health and Sports, Yangon City Development Committee, Food and Drug Board of Authority, World Health Organization, Sanchaung Township General Administration Department, libraries and websites.

1.4 Scope and Limitation of the Study

The study is only one Sanchaung township selected as sample area of Yangon Region because this region consists forty-five townships. Among them, collected of 150 street food vendors. Therefore, the findings were not generalizable to Yangon Region Street food vendors.

II. Literature Reviews

2.1 Trade in Street Foods

The street food industry plays an important role in cities and towns of many developing countries both economically and in meeting food demands of city dwellers. Street foods are defined by the Food and Agricultural Organization (FAO) as ready to-eat foods and beverages prepared and sold by vendors and hawkers in streets and other similar

public places (FAO, 1997). Street food trade has emerged as an economic activity and a source of income for the poor in many developing countries. All stakeholders in street food trade including the street vendors, consumers and governments must be involved in ensuring the safety of the sold and consumed food (Alimi, 2016).

2.2 Street Food Vendors

Street food vendors are defined as consumables such as beverages and foods sold in public places, which may be eaten elsewhere (Bhattaharjya and Reang, 2014). The street food vending businesses contribute significantly to income generation for many individuals from low-income households involved in the street food vending (Choudhury, Mahanta, Goswami, Mazumder & Pegoo, 2011).

Most street food vendors possess low educational training and often lack adequate food safety knowledge and skills (Samapundo, Thanh, Khaferi & Devlieghere, 2016). Street food vendors are considered a food safety hazard to consumers, since vendors often lack basic food service infrastructure and equipment such as storage facilities, food reheating equipment, refrigerators and waste disposal facilities (Rane, 2011).

2.3 Safety of Street Foods

Food safety is one of the most important issues in public health, and it contributes significantly to the cost of health care (Scallan and Hoekstra, 2011). Globally, it is estimated that 600 million people become ill, 549 million suffer from diarrheal disease, and 420,000 die each year after eating contaminated food. Good knowledge and a positive attitude among the food handlers and proper food handling practices can help control the foodborne disease occurrence in some circumstances (Sharif and Al-Malki, 2010).

2.4 Personal Hygiene of Street Food Vendors

Good personal hygiene is essential to ensure food is not contaminated. To prevent contamination, every person in a food handling area, even if not actively handling food, must maintain a high standard of personal hygiene and cleanliness.

2.5 Knowledge, Attitudes and Practices on Food Safety and Foodborne Diseases

The relationship between knowledge, attitudes and practices is often explained through the KAP model (Simelane, 2005). Knowledge accumulates through learning processes and these may be formal or informal instruction, personal experience and experiential sharing (Glanz & Lewis, 2002). Attitude involves evaluative concepts associated with the way people think, feel and behave (Keller, 1998). Practices further add that a number of factors can influence one or more of the KAP variables such as self-esteem, self-efficacy and misconception (Ajzen, 2002). Foodborne diseases are a significant and growing public health problem in both developing and developed countries (Bhattacharjya & Reang, 2014). The globalization of the food supply system has presented

new challenges for food safety and has contributed to the international public health problem of foodborne disease.

2.6 Review on Previous Studies

Khin Ma Gyi (2000), found that improvement of personal hygiene and sanitation in the manufacturing, storage and sale of street foods is necessary so that they would be safer from consumers to eat.

Zayar Htein Win (2007), shown that knowledge, attitude and practice of food handlers is different mentioned based on type of food preparation.

Tin Aung Soe Htwe (2019), found that most vendors have good food safety knowledge, but that their hygienic practices require improvement.

Ferdous, Lina, Das and Baman (2020) suggested that overall food safety knowledge of suppliers in Jashore Region is good but they need to improve their attitudes and practices.

Alemayehu, Anderw, Giza and Diress (2020), found that the level of food safety knowledge and handling practices were relatively low. Therefore, it is still needing further intervention and investigation of food handlers' education level, food safety training and attitude were identified as factors associated with food safety knowledge.

III. Findings

3.1 Profile of Sanchaung Township

Population density in Sanchaung Township is also crowded and most of their lifestyles is to eat fast food in food stall and food vendor. Therefore, it's possible to get food safety's problem concern with street food vendors. Consequences of food safety problems are widespread and growing public health problems in developing countries. Food safety is depending on food handlers and their habits in food preparation. Food-borne diseases are preventable diseases. If food handlers are not attention in food preparation, it can be contaminated and leads to cause food borne diseases. It may also increase morbidity and mortality rate of food borne diseases in the community.

3.2 Survey Design

This study used the quantitative method based on primary data and secondary data. The primary data was collected by conducting a survey using simple random sample method. Primary data were collected from 150 street food vendors providing food services to consumers in Sanchaung Township, Yangon Region calculated as follow.

Sample Size Formula

$$n = \frac{(Z\alpha/2)^2 (p)(1-p)}{d^2}$$

Where; n = sample size

p = the probability of having poor knowledge, attitude and practice towards food safety = 50%

Z = the standard normal score set at 1.96 (95% confidence interval)

d = 8% margin of error

Therefore,

$$n = \frac{(1.96)^2 (0.5)(1-0.5)}{(0.08)^2} = 150$$

The secondary data is obtained from reports and fact from Ministry of Health and Sports, Yangon City Development Committee, Food and Drug Board of Authority, World Health Organization, Sanchaung Township General Administration Department, libraries and websites.

Data are collected randomly by face-to-face interviews with 150 street food vendors at Baho Street, Kyauntaw Street and Sanchaung Street were conducted in the field and helped to understand the practical conditions of the study within July and August 2022, through questionnaires administered with a well-structured questionnaire.

3.3 Survey Data Analysis

3.3.1 Characteristics of Respondents

The distribution of gender for 150 respondents, female is higher than male. Mostly respondents have between 21 years to 30 years and high school level. The majority of respondents have lived in Sanchaung Township followed by Kyeemyindaing Township, Hlaingtharyar Township, Kamayut Township and Insein Township.

3.3.2 Business Situation of Street Food Vendor

This section presents the business situation of street food vendors such as main selling product, initial investment of business, average monthly income of business, working experience, number of labors, cost of business space and business space area.

Regarding from 150 respondents, the majority of respondents said that their main selling product was Myanmar Traditional Foods (64 respondents or 42.7%), Chinese Foods (20 respondents, 13.3%), Fast Foods (58 respondents or 38.7%) and Shan Traditional Foods (8 respondents or 5.3%) respectively.

According to the initial Investments of business, 22 respondents (14.7%) have invested less than Kyat 100,000 for their business, 76 respondents (50.7%) invested between Kyat 100,000 to Kyat 500,000, 35 respondents (23.3%) invested between Kyat 500,000 to Kyat 1,000,000 and 17 respondents (11.3%) invested more than Kyat 1,000,000. And also, their daily income of between Kyat 30,000 to Kyat 50,000. So that, 82 respondents (54.7%) answered that their average monthly income have less than Kyat 1,000,000 and 68 (45.3%) have received more than Kyat 1,000,000 from their business. The mostly respondents are between 5 years to 10 years street food working business. So many respondents said that they are selling their products on main streets of Sanchaung

Township such as Baho Street, Kyauntaw Street and Sanchaung Street. According to the number of labour they have as 72 respondents (48%) answered that they have one helper or assistance person for the street food business activities. If the street food business is large, it is found that a large number of labors are employed in the study area.

According to result of 150 respondents the mostly respondents said that they have not charges for the business space area. Only a few respondents have to pay the daily market tax to the municipal staff.

3.3.3 Assessment of Knowledge of Street Food Vendor

In order to preserve personal hygiene, 100% of the 150 street food vendors believed in hand washing before work, while 96.6% believed in hand washing after work.

91.5% had the awareness that washing hands reduce the risk of contamination, while 8.5% felt that washing hands could not effectively reduce the risk of contamination with food handling. 86.7% of total street food vendors have agreed that water could not clean hand properly.

Surprisingly, about 73.3% of the 150 street food vendors knew that personal protective equipment such as mask, gloves, and caps are the parts of personal hygiene. 68% of vendors were not touching their hair after washing hands but 32% of vendors were touching their hair.

90% of street food vendors knew that proper cleaning and handling of cooking utensils reduce the risk of food contamination and 80% of street food vendors were aware that their long nails could contaminate food. 73.3% used gloves for reduce the risk of contamination to consumers and 65.3% replaced with new ones for damaged gloves. And also, 90.7% street food vendors have known the cooking utensils can reduce contamination after cleaning and 74.7% of street food vendors were using hot water to clean equipment reduces the risk of contamination. But 56.7% of street food vendors have not agreed the contamination can be reduced by separating the contaminated zone from the clean zone. 85.3% have contaminated foods always have some change in color, odor or taste and 57.3% of street food vendors have agreed that reusing of oil is dangerous to health. Although, 64.7% of street food vendors have not agreed that reheating cooked foods can cause food borne diseases and 76% of street food vendors used polythene packs for food packaging.

3.3.4 Assessment on Attitude of Street Food Vendors

Regarding from 150 street food vendors, 60% of street food vendors agreed to food safety knowledge would benefit their personal lives but 40% of street food vendors have not agreed. And also, 53.3% of street food vendors agreed to knowledge of food safety will benefit consumers but 46.6% of street food vendors disagreed to this statement.

64.7% of street food vendors agreed with safe food handling is an important part of their job responsibility and 58.7% of street food vendors agreed with good personal

hygiene. Although, 43.3% of total street food vendors were washing hand prior to food handling can reduce food poisoning.

Moreover, 51.3% of street food vendors agreed that producing safe food than made it tasty. Only 32% of street food vendors kept nails short to reduce the risk of food contamination. In addition, 83.3% of street food vendors have not touch food with injured hands.

About 57% of street food vendors agreed that reusing oil is harmful to health but the rest of street food vendors recycle the cooking oil. Within 150 street food vendors, 63.3% of street food vendors answered that they did not touch their hand on face, hair, etc. while working and 90.7% of street food vendors used tissue or cloth when coughing or sneezing. In addition, 93.3% of street food vendors agreed that Using mask, gloves and cap is important in reducing risk of food contamination. 92% of street food vendors have known the usage of cover on prepared food reduces the risk of food contamination and 30% of street of vendors did not know that foodborne diseases can have devastating health and economic impacts on society.

Moreover, 75.3% of street food vendors disagreed that food hygiene training for workers is an important issue in reducing the risk of food contamination. All of street food vendors agreed that properly cooked food is free from contamination. They have made raw and cooked foods should be stored separately to reduce the risk of food contamination. But 72% of street food vendors used the polythene bags for food packaging.

3.3.5 Assessment on Practice of Street Food Vendors

According to result of 150 street food vendors, 24.7% of street food vendors have always washing hands before processing food, 58.6% have sometimes washing their hands before processing food and 16.7% have not washing their hands. About 62% of street food vendors have not Washing hands before touching unwrapped raw foods but 8% have washing hands before touching unwrapped raw foods and 30% have sometimes washed their hands. 90% of street food vendors used soap/detergents for washing their hands. Only 30.7% respondents kept their nails short before beginning food preparation activities. Moreover, 13.3% respondents answered that they have always wash hands before handling to prepare food and 38.7% have sometimes made it. Although, 48% of street food vendors were not washing their hands before handling to prepare food.

During the observation the question of handling foods at work while having diarrhea, 40% of street food vendors have always worked when they had diarrhea and 48.7% respondents sometimes were working. About 85% of street food vendors have always cleaned the work area before starting work. This study also found that all of respondents washed their washing hands after going to the toilet. Besides, over 75% of street food vendors did not use mask, gloves and cap during daily working activities. Disappointingly, when they were washing hands before using gloves. But all of respondents were washing and cleaning work clothes and about 70% used a tissue/cloth when coughing or sneezing. Mostly respondents said that they have always used detergent to clean the knife after cutting raw chicken or meat or other raw foods.

Moreover, most of the respondents answered in using one common bowl for washing dishes and all respondents reused the cooking oil. And also 76% of street food vendors have always touched their hands-on face, hair, etc. while food cooking or preparation.

3.3.6 Relationship between Sociodemographic and Knowledge, Attitude and Practice on Food Safety

(A) Mean Value of Sociodemographic and Knowledge, Attitude and Practice

Regarding from the study of sociodemographic mean value, the gender mean value indicates mostly street food vendors were female. The mean value of age mentioned that the most of street food vendors were between 31 years to 40 years. The mean value of street food vendors education level reported that they were high school level. The mean value of street food vendors working experience mentioned that they have 5 years to 10 years working experience.

The food safety knowledge section includes 18 questions with two possible answers. According to result of the street food vendors' knowledge mean value 1.74 with standard deviation 0.451 showed that mostly respondents have agreed to the knowledge questions.

The food safety attitude section includes 18 questions with two possible answers. According to result of the street food vendors; attitude mean value 1.65 with standard deviation 0.478 showed that mostly respondents have agreed to the attitude questions.

The food safety practice questions have 18 questions with three possible answers. According to result of the street food vendors' practice mean value 2.36 with standard deviation 0.4838 indicate most of the respondents showed that they sometimes practice.

(B) Correlation Analysis between Sociodemographic and Knowledge, Attitude and Practice

Table (3.1) shows the correlation between sociodemographic (independent variable) and knowledge (dependent variable) on food safety.

Table (3.1) Correlation between Sociodemographic characteristics and Knowledge

Sociodemographic characteristics		Knowledge
Gender	Pearson Correlation	0.384
	Sig. (2-tailed)	.000
Age	Pearson Correlation	0.207
	Sig. (2-tailed)	.000
Education Level	Pearson Correlation	0.735
	Sig. (2-tailed)	.000
Working Experience	Pearson Correlation	0.849
	Sig. (2-tailed)	.000

Source: SPSS Output, 2022

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

Regarding the result of correlation value (Table 3.3), there is strongly relationship between sociodemographic and knowledge.

The following Table (3.2) shows the correlation between sociodemographic (independent variable) and attitude (dependent variable) on food safety.

Table (3.2) Correlation between Sociodemographic characteristics and Attitude

Sociodemographic characteristics		Attitude
Gender	Pearson Correlation	0.426
	Sig. (2-tailed)	.000
Age	Pearson Correlation	0.374
	Sig. (2-tailed)	.000
Education Level	Pearson Correlation	0.809
	Sig. (2-tailed)	.000
Working Experience	Pearson Correlation	0.825
	Sig. (2-tailed)	.000

Source: SPSS Output, 2022

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

Regarding the result of correlation value (Table 3.2), there is strongly relationship between sociodemographic and attitude.

The following Table (3.3) shows the correlation between sociodemographic (independent variable) and practice (dependent variable) on food safety.

Table (3.3) Correlation between Sociodemographic characteristics and Practice

Sociodemographic characteristics		Practice
Gender	Pearson Correlation	0.648
	Sig. (2-tailed)	.000
Age	Pearson Correlation	0.520
	Sig. (2-tailed)	.000
Education Level	Pearson Correlation	0.726
	Sig. (2-tailed)	.000
Working Experience	Pearson Correlation	0.850
	Sig. (2-tailed)	.000

Source: SPSS Output, 2022

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

Regarding the result of correlation value (Table 3.3), there is strongly relationship between sociodemographic and practice.

IV. Discussions

The mean value of gender indicates mostly street food vendors were female. The mean value of age mentioned that the most of street food vendors were between 31 years to 40 years. The mean value of street food vendors education level reported that they were high school level. The mean value of street food vendors working experience mentioned that they have 5 years to 10 years working experience.

The mean value of street food vendors knowledge questions showed that mostly respondents have yes to the knowledge questions. The mean value of street food vendors attitude questions showed that mostly respondents have agreed to the attitude questions.

The mean value of street food vendor practice questions indicates most of the respondents showed that they sometimes practice. According to result of correlation value, there is strongly relationship between sociodemographic and knowledge, attitude and practice.

Most of food vender have lack of concern about food borne disease are related with some neglecting food preparing behavior. They cannot invest on selling with their own shop and most of them are selling on the street. The consequences of socioeconomic status effect on knowledge applied on practice of food preparation leading to causes of food contamination.

According to the research findings, there is a gap between street food vendors' responses on knowledge questions and their practice. Even they have basic knowledge, they could not apply during their working time. Almost vendors are not wearing the personal protective equipment and rare to cover the prepared food for consume. In addition, they used one common bowl for washing dishes and used oils from reused oil. These improper practices are the major risk factors for contaminating food borne disease. There was observed that the answer of respondents of self-practice questions and the observation real situation. Therefore, there was not only need to better in knowledge and attitude but also better in real practice.

V. Conclusions and Recommendations

The study found that most street food vendors have good food safety knowledge, but that their hygienic practices require improvement. Therefore, public health department, and the Yangon City Development Committee should encourage on food safety training with specialized courses according to the global health guidelines for street food vendors.

The registration process should mandate that street food vendors provide the local authority with documentation such as current food safety training certificates, medical certificates, and outlines of the basic infrastructure of the basic infrastructure of street food stalls. Moreover, the local authority should implement the motivational campaigns (health education program, rewards for good food hygiene, poster display, competition for safety food preparation etc) that target street food vendors to encourage the use of hygienic practices. Every street food vendor should have to attain food handling practices training.

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AN ANALYSIS OF THE ENGLISH LANGUAGE NEEDS FOR GOVERNMENT EMPLOYEES AT SMALL SCALE INDUSTRIES DEPARTMENT, MINISTRY OF COOPERATIVES AND RURAL DEVELOPMENT

Soe Thura*

Abstract

Due to the multi-polar world, English skills are essential for government employees for qualified work performance in Myanmar. They are still in need and difficulties of English skills for daily work done. This study aims to analyze the English language needs of government employees working at Small Scale Industries Department (SSID) under Ministry of Cooperatives and Rural Development. The study is the descriptive type in use of primary data from four study areas of SSID. The key findings revealed that 60% of government employees agreed that English was important for their present job whereas 40% did not agree. Some low rankers and high rankers perceived that English was so essential that they wanted to improve it. However, majority of mid-level of government employees were in less need of English due to less incentives. They perceived that being good at English skills did not represent job promotion. The government employees perceived their own English condition as fair in all four skills. Reading and writing were rated as “moderately needed” while listening and speaking were indicated as “slightly needed.” Writing and reading were indicated as “moderately difficult” whereas listening and speaking skills were explored slightly difficult. They wanted English trainings that focus on reading and writing more than that focus on listening and speaking. They also suggested attending effective occupational English training, promoting motivation and strengthening meritocracy.

Introduction

Today, Myanmar government employees are still in need of English skills and in face of difficulties in completion of daily routines. Most government employees learn just for emergency purpose or urgent need, but not for passion or lifelong use. They are explored to be with the wide gaps in transforming paper into practice, practice to proficiency, proficiency to life-immunity despite stressful countless trainings throughout their life. Such is the long standing problem for the Myanmar government community.

The essential gatekeepers in the country are government employees. They are the helpful hands for the country’s productivity and the main driving engines for national development. Thus, the input of English skills plays a major role for Myanmar government employees. Language is the vital source of communication. There is no smooth partnership without good communication. Language is the intangible cultural heritage. Its importance is significant when we share our ideas, feelings, views, heartfelt emotions and thoughts with others. To communicate with people around the world and keep track on various situations, we need to use one language that can connect us with people, with at least one language out of different languages. One of the common languages is English. It is the international language used by global people of different clusters.

With dynamic paradigms, Myanmar is on transitional pathway of localization to globalization. It becomes an accessible shelter to welcome, breed, host and energize international diplomatic relationships in terms of economics and politics through invitation of international investments. Beyond the endemic crisis with recovery and resilience

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programs, Myanmar foreign investors and more visitors will visit soon. Myanmar governmental organizations must be well-prepared for receiving such normalized opportunities.

Small Scale Industries Department (SSID) was selected as the study area and it is one of the departments under MCRD. SSID is responsible for the promotion of micro and small industries and enhancing livelihood of the people in Myanmar. SSID makes cooperative effort with NGOs and INGOs for the development of handcrafts and MSMEs sector. There are 15 SSID branch offices in States and Region and 40 SSID branch offices in 40 districts.

SSID brings out public welfare by 4 importance: academic importance, cultural importance, employment importance and SME developmental importance. SSID has academic importance by producing incredible human resources from Bagan Lacquerware Technology College, Saunders' Weaving and Vocational Institute (Amarapura). Thus, they need to be endowed with language ration. Moreover, SSID has cultural importance. It is the source of intangible cultural heritage like Myanmar Handicrafts Center (MHC) that exhibit and sell Myanmar handicrafts and art crafts at one stop service in Yangon. That's why, they need to have language background to showcase their resource to the world.

SSID has Employment importance by opening vocational training for the jobless people in rural and urban. To help rural people, technical and financial support are needed. Industrial workshops (Yangon) in Mingaladon township, is highly responsible for food safety and Startups Registration. Thus, they need to have background knowledge on industrial English. So, SSID has SME developmental importance. It plays a vital role in national GDP enhancement by founding industrial workshops in Mingaladon township, Yangon.

Objective of the Study

The objective of the study is to analyze the English language needs of government employees working at Small Scale Industries Department (SSID) under Ministry of Cooperatives and Rural Development.

Methods of Study

This research was a descriptive study and conducted among government employees working at Small Scale Industries Department from July 2022 to November 2022. A total of 100 samples were collected by simple random method. The study uses primary and secondary data. 100 respondents consist of general levels of staff (multi-layers), from four study areas of Small Scale Industries Department: 30 respondents from Bagan Lacquerware Technology College from a total of 50 staff, 30 respondents from Saunders' Mandalay Weaving and Vocational Institute (Amarapura) from a total of 55 staff, 20 respondents form Myanmar Handicraft Center (MHC) (Yangon) from a total of 36 staff and 20 respondents from Industrial workshop(Yangon) from a total of 46 staff .

Scope and Limitation of the Study

This study only focuses on the government employees of multi-levels at four study areas: Lacquerware Technology College (Bagan), Saunders Weaving and Vocational Institute (Amarapura), Myanmar Handicraft Centre (Yangon), Industrial Workshop (Yangon) of Small Scale Industry Department, Ministry of Cooperatives and Rural Development.

Literature Review

Need is defined as the gap between the present state and desired state, and difficulty is defined as the state of being difficult or lack in case or currently by Kaufman and English (1979). Need is both objective and subjective. According to Scott (1981), communication is the process of interaction between a speaker and a listener sharing information with each other.

Listening and speaking skills are most important skills for sharing and exchanging ideas and feelings in daily life. Reading is the most important English language skill because it is used as the main instrument to acquire knowledge and information. The information we learn today is mostly available in the form of both printed and online materials and the English language is often the original source of those materials. Writing is viewed as a difficult skill since it is an integrated skill. Indeed, different subskills are needed in writing and it includes basic structural elements namely paragraphing, sentence structure, grammar, punctuation, and spelling.

Needs analysis is a basic component of ESP and, therefore, an analysis of learners' needs ought to be regarded as a framework for a syllabus design or ESP program. Overall, the results of a needs analysis help instructors to identify learners' prospective professional needs, learners' needs in terms of language skills, and learners' deficiencies in the area of language skills. After examining learners' needs and determining the purposes of the language course, instructors can select material that meets their needs. Needs analysis, therefore, is the foundation on which instructors can develop curriculum content, teaching materials, and methods that can lead to augmenting learners' motivation and success.

A broad overview of the health sector in Myanmar reveals that English is the core source in the public administrative sectors. Majority of medical professionals use English language. The needs of English language are found high for those who are not well-prepared. Myanmar government officers are dealing with visitors from international government organizations, GOs and INGOs. (Cho Mar, 2020). This is the main problem in Myanmar because most of Myanmar government employees are not skilled in their English communicative skills (Takashi, 2014).

Being good at English language brings out professional development for the employees (MOE, 2013, UNICEF Myanmar, 2013). Nevertheless, it is essential that government employee actualize that proficiency in the English language is needed for their professional development and completion of duties. In fact, English is compulsory for government ministries (Chao, 2018). Myanmar is on transitional pathway of localization to globalization. It is open to international partnerships in terms of economics and

education. It is found that a number of studies have examined just the needs, but fails to explore lacks, and wants of communication skills. In an endeavor to enhance the performance skills among government officials, the Myanmar government has been conducting English language enrichment programs such as workshop, seminar and training through government agencies.

Survey Analysis

The Small Industries Department was chosen for case study of my thesis because it is a public benefit department that provides vocational trainings to increase people's income and create more job opportunities. This study was descriptive study with quantitative approach to analyze the English language needs and difficulties of Myanmar government employees working at Small Scale Industry Department under Ministry of Cooperatives and Rural Development, Nay Pyi Taw. It was done from July 2022 to November 2022. Data was collected from 100 government staff by face to face interview by using semi-structured questionnaires.

Survey Results

The socio demographic characteristic of surveyed respondents including age, gender, educational background, positions and working experience indicates that majority of the respondents are between 40-50 and 30-40 years of age which is 28% of the total sample respectively. 21% of the sample is over 50 years of age, 20 % is between 20-30 years of age and 3 % is under 20 years of age.

For gender, females take a majority share in the sample which is 64% while the rest is male at 36 %. Regarding the educational background, it points out that most of the respondents or 60% graduated with a bachelor's degree, 1 % with doctoral degree whereas 10% of the respondents obtained a master's degree. Most of them or 35 % are Staff, 30 % are Mid-level officers (AD/DD), 26 % are staff officers, 9 % are high level officer(Director).

For working experience, the majority of the respondents or 28 % have been working for under 5 years and between 10-20 years. The successive groups of between 20-30 years are shown as 21% and 12 % have been working between 5-10 years and 11 % are over 30 years of working experience.

Regarding the opinions about the Importance of the English Language and Attending English Courses for the Present Job, the finding points out that 60% agree that English is important for their present job whereas 40% do not agree. For training provided by departments, 64% of respondents haven't received any trainings yet, 33% of respondents received once a year and 1% received three times a year. Moreover, 50% of respondents have never attended English courses form external departments. Besides, 22% of respondents attended English training provided by external department since over 3 years and 7% of respondents attended within 6 months.

For the reason why English is important, 35 % of respondents consider English is important for job promotion, 25 % of respondents to apply in workplace, 20% of respondents for scholarship opportunities and 15 % of respondents for communication

with foreign visitor and INGOs and 5 % of respondents to access all English Entertainment Channels.

Table (1) Self-assessment of English Language Skills in the Workplace (n=100)

Skills	Mean	S.D.	Meaning
Listening	2.65	0.86	Fair
Speaking	2.76	0.91	Fair
Reading	2.92	0.97	Fair
Writing	2.78	0.92	Fair
Overall	2.77	0.92	Fair

Source: Survey Data, 2022

Table (1) illustrates that the government staff consider their all English skills “fair” which are listening (Mean=2.65), reading (Mean=2.76), speaking (Mean=2.92) and writing (Mean=2.78) respectively due to work nature.

Table (2) The Level of English Skill Need in the Workplace (n=100)

Skill	Mean	S.D.	Meaning
Listening	2.42	0.85	Slightly needed
Speaking	2.46	0.83	Slightly needed
Reading	2.9	0.87	Moderately needed
Writing	2.67	0.87	Moderately needed
Overall	2.61	0.85	Moderately needed

Source: Survey Data, 2022

Table (2) displays that there are both moderately needed and slightly needed among the skills. Listening (Mean=2.42) and speaking(Mean=2.46) are rated as slightly needed. Moreover, reading (Mean=2.9), writing(Mean=2.67) are viewed as “moderately needed” due to work demand.

Table (3) The Level of English Skill Difficulties in the Workplace (n=100)

Skill	Mean	S.D.	Meaning
Listening	2.42	0.85	Slightly difficult
Speaking	2.46	0.83	Slightly difficult
Reading	2.71	0.85	Moderately difficult
Writing	2.98	1.04	Moderately difficult
Overall	2.61	0.85	Moderately difficult

Source: Survey Data, 2022

As can be seen from table (3), Listening skills(Mean=2.42) are considered as “slightly difficulty”, followed by speaking skills are as slightly difficult (Mean=2.46). Besides reading skills (Mean=2.71) and writing skills(Mean=2.98) are indicated as “moderately difficult” due to occupational demand.

Table (4) The Extent That the Government Employees Want to Improve English Skill in the Workplace

(n=100)

Skill	Mean	S.D.	Meaning
Listening	2.43	1.12	Slightly
Speaking	2.49	1.11	Slightly
Reading	3.08	0.95	Moderately
Writing	3.2	1.02	Moderately
Overall	3.13	0.99	Moderately

Source: Survey Data, 2022

Table (4) shows that the government employees respectively want to improve listening(Mean=2,43) and speaking(Mean=2.49) as “slightly” and reading (Mean=3.08) and writing skills (Mean=3.2) as “moderately”.

The Needs of Listening Skill in the Workplace

On need analysis of listening skills, “slightly needed” was recorded in all listening skills including listening to phone conversation with foreigners, discussion with foreigners / INGOs at meeting/ workshop /seminar, interactive debates in international conference, attending foreign online trainings, understanding the foreigners’ comments/ suggestion and complaints, listening to various English accent, understanding well when asking for personal details and information with foreign delegates, problem solving when inconvenience occurs with foreigners and suggesting travel information (eg. Restaurants, traditions, tourist attractions, transportation, etc.) with means value above 2 due to the nature of work in pandemic crisis.

On need analysis of speaking skills, all speaking skills are identified as “slightly needed” including listening to making phone conversation with foreigners, discussion with foreigners / INGOs at meeting/ workshop /seminar, interactive debates in international conference, mutual discussion when attending foreign online trainings, feedback to the foreigners’ comments/ suggestion and complaints, prompt feedback to various English accent, asking for personal details and information with foreign delegates, problem solving when inconvenience occurs with foreigners and suggesting travel information (eg. Restaurants, traditions, tourist attractions, transportation, etc.) due to work nature because English is not an official language in the government ministry.

On need analysis of reading skills, the finding points out that all reading skills are identified as “moderately needed” including reading visitors’ travel documents, formal letter and faxes, information from the internet or websites E-mail and reports, office documents in English, comprehend all the articles in MOU and contracts/ agreements, comprehend international news, magazines and journals and meeting minute and call note.

On need analysis of writing skills, the result indicates that all writing skills are identified as “moderately needed” including writing daily reports, messages for public, taking telephone message, writing E-mails, writing formal letters, writing meeting minute

and call note, writing power point presentations and writing contracts/ agreements in accordance current demand in work nature.

The Difficulties with English Language Reading Skills in the Workplace

Writing skills are identified as “moderately difficult” including writing formal letters, writing grammatically, writing with standard structure and compact usage, writing with the expression of main idea and purpose and writing with technical terms and various vocabularies (Mean= 2.34, Mean=2.40, Mean=2.39, Mean=2.45 and Mean=2.44 respectively) due to work demand.

The respondents suggest their wants in heart that the English course should focus on listening(Mean=2.67) and speaking (2.61) are mentioned as “moderately want” whereas their wants on English course focused on reading(Mean=3.86) and writing(Mean=3.77) are expressed as “mostly wanted” respectively.

The finding shows that they enjoy classroom training more than online training. They want their ministry or department to open more effective English training that represents operational level of staff. It is found that most of respondents want to learn Basic English conversation and grammar, want to study occupational English course while some want to improve their English with audio visual aids.

Conclusion

Findings

In this study, general levels(multi-layers) of government employees working at Small Scale Industries Departments were selected, not only the handball numbers of the high level with reasonable ration of English skills. Thus, needs and difficulties differ from other research findings. This is one of the realistic and natural evidences for stronger research.

Little chance, little opportunities. No opportunities, no passion. No passion, no willingness and no more effort for further lifelong pursuit. This thesis proves that statement by the practical results. Myanmar Handicraft centers in Yangon and Bagan Liqueur-ware college are crowded with thousands of tourists several years ago, however, it is now found to be least inflow of tourists. It is due to the low seasons of tourists and foreign delegates to Myanmar government ministries and administrative bodies during endemic crisis. As by-products of Covid-19 endemic crisis and some other reasons, the tourism industry is declined and the international visitors visit lesser in this odd time. This is one of the reasons why government staff are less needed and less difficulties in English. Urgent needs make urgent effort. Urgent effort makes urgent difficulties and vice versa. The answer is crystal clear.

Another reason is that Myanmar language is also a mother tongue. English is not an official language in government ministries. They do not use extensively and find difficulty in all stuff in English language. So, it is natural for government employees to be less exposed and less used the second language, English. On the base of findings, even in

the head office of SSID departments which takes the top role in international relation, they need mainly just writing and reading skills as moderately indicator for the above-mentioned reasons.

Due to the work nature assigned, they distinguished their priority as majority and minority. They seem to assume that upgrading English skill does not matter and not totally represent their job promotion and future prospect. In reality, government staff with good commend in English is not supposed to be inevitably selected as a scholar with the reason: Professional subject's knowledge matters. Thus, all nominated scholars are not supposed as the ones with good English skill. As consequences, it is investigated that their motivation is likely to get lower. They lost themselves on the half way and do not even think that they are deserved with language. Two solutions can be pinpointed: Work nature and men nature.

This finding boosts other government staff's self-actualization in Myanmar too. It agrees with today's government ministries' situations. English belongs to some, not for all. It is alike the gold cup only for the elite. In urgent need of language in office, they rely on such a few high level. Similarly, in the face of foreign visitors, INGOs or delegates, only the high level government employee (managing level) took intervention in such an important role to be error-less. The operational level stayed away from language application. The more they are staying away, the more they are left behind.

On the base of the opinions about the importance of the English language and English Courses for the present job, the study points out that 60% agree that English is important for their present job whereas 40% do not agree. The government staff consider their all English skills "fair". Training provided by departments are not sufficient yet. By the sound of that, most government employees in this Ministry are not in touch with English for ages and even stayed satisfied with old ration learned in childhood like the drivers with the yellow alarm of oil timer in the car. On top of that, meritocracy (merit-based promotion) is still found to be weak so far by the evidence base of this study result.

Regarding with English skills needs, reading and writing are reported as moderately needed while the listening and speaking are considered as "slightly needed" due to work nature and man nature in time of endemic crisis. Thus, it is logically found that the SSID is more demanding for writing and reading skill than the rest skills in accordance with the nature of most Myanmar government ministries. On the base of level of English skills difficulties, the government staff mention reading and writing skills as "moderately difficult", followed by speaking and listening skills as slightly difficult. Thus they are revealed as more daily exposed with reading and writing than listening and speaking.

In reality, the government staff at Small Scale Industries Department respectively want to improve reading and writing skills "mostly" and listening and speaking "moderately." Moreover, the finding shows that some young staff and high level want to improve English for their future prosperity. However most of mid-level are stuck in the midpoint like "free rider" or "Laissez-faire." Their attitude should be modified. No concern now will be a big concern soon.

Most of government staff at Small Scale Industries Department under Ministry of Cooperatives and Rural Development, want their ministry and department to open more effective and motivational English training that represents operational level. By the sound of that, although English is not extensively used in the workplace at present, they still have some willingness and enthusiasm on effective English course for occupational purposes(EOP). They also have hope for the future because the level of their needs, difficulties and wants might change if they have to work another ministry or department in which they must struggle out of the comfort zone in case of high competitiveness of red ocean strategy with the law of nature in dynamic process.

For recommendation, this research findings stress that meritocracy system (skills-based promotion) should be promoted to become louder and more alive than before. The mindset with “no promotion, no concern with their current job and no interest in English” should be corrected. The findings mainly also provide the crucial information about genuine situation of English Needs and difficulties in Government ministries. Hence, future research should be conducted in the aspect of situational analysis and strategy analysis on English course and upgrade intrinsic and extrinsic motivation as key performance indicators.

Last but not the least, the result of the study might provide the guidelines for arranging English course content for trainers, reforming interdepartmental policies on capacity building programs, restructuring promotion system based on meritocracy for governmental decision makers and changing government employees’ mindset in order to bring out the better employee’s productivity with higher performance and brighter cultural value in a well-established organization culture.

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Factors Influencing Adolescent Fertility in Myanmar

Hlaing Hlaing Moe* and Shunn Lei Yee Aung**

Abstract

Teenage marriage and childbearing are critical phenomenon to be reduced at both the regional and national levels in developing countries, especially in Myanmar. Child marriage and fertility is a violation of human rights. Child fertility endangers girls' lives and health while also limiting their future opportunities. The main objective of this study is to analyze adolescent fertility patterns and their determinants among women of reproductive age (15–19) years in Myanmar. Data on women at age group (15-19) years being extracted from 2019 Myanmar Inter-censal Survey. In this study, descriptive analysis, Chi-square test and binary logistic regression analysis are applied. A total of 23104 adolescent women are participated in this study. It is observed that 10.73 percent of adolescent women have married and 4.16 percent have given birth. The percentage of adolescent fertility in rural areas is higher than urban areas. The results of Pearson Chi-square test show that women's age, education, occupation, household size, annual family income, access of electricity, and parent live in household, states and regions, type of residence and length of residency are related to adolescent fertility of women. The results of binary logistic regression found that women's age, education, occupation, annual family income, household size, parent live in household, states and regions, type of residence and length of residency are the influencing factors of adolescent fertility. This study found that adolescent women who achieved higher level of education, had job, lived in urban areas and lived with parent are reducing the chance of having a child. Governments and policy makers must work together to ensure girls have access to quality education, health information and services, comprehensive sexuality education and life-skills training.

Keywords: Adolescent fertility, Inter-censal survey, Binary logistic regression model

I. Introduction

Early marriage and fertility are major issues in social inequality and global health, and they have been linked to a variety of short-term and long-term negative social and health consequences for young mothers and their children. Pregnancy complications, maternal and neonatal deaths, mental and physical diseases and disabilities, malnutrition, and developmental delays in early childhood, as well as other disadvantages in education, employment, and other socioeconomic factors, are all consequences (WHO, 2012).

In the Sustainable Development Goals (SDGs), early marriage rate (the percentage of people who were married before the age of 15 and before the age of 18) is one important monitoring indicator for goal 5—gender equality, and adolescent fertility rate (the number of live births per 1,000 people aged 10 to 14 and 15 to 19) is another important monitoring indicator for goal 3—good health and wellbeing (United Nations, 2020). Childbearing among girls aged younger than 15 years is currently uncommon in most societies, except for some of the least developed countries. As the point of view of the health, bearing about 15 million babies by teenage mothers in every year is high-risk births not only mothers but also their children. In the developing countries of Asia, Africa and Latin America, about 8 out of 10 children are born. In developing

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countries, also about 13% of all children are born to adolescent mothers (McDevitt, 1996).

The incidence of teenage pregnancies remains high around the world. Several previous studies have shown that the risks to health and death are intensely higher in teenager who had given birth. Adolescent motherhood is a concern not only the perspective of human rights but also public health. The high rate of young marriages may lead to the consequences as which low level of educational level, more frequently reproductive health complication and gender inequality in marriage to teenage women in rural Bangladesh (Sarkar, 2009).

Teenage birth has had a long-term negative impact on women's demographic and socioeconomic outcomes. Adolescent fertility is associated with low educational attainment which may lead to longer-term effects on labor force participation and rates of living in low income. However, teenage mothers and adult mothers with similar levels of education also had similar participation rates in labour market and survival rates with low income. Therefore, education is one of the most important factors in determining labor force participation and long-term income (Luong, 2008).

In Ethiopia, early marriage and sexuality of teenage women had a direct effect on the adolescent motherhood. This means that young marriage of women with early sexual experience were more likely to give birth as compared to women in their counterpart. Indeed, early marriage may put them at longer risk of having sex during adolescence. Lacking the use of contraception could lead to teenage pregnancy. On the other hand, secondary and higher educational attainment, residing in urban areas and type of employment had inversely associated with early birth. Moreover, these factors have an indirect impact on adolescent motherhood, as well as inversely association with women's early sexuality and marriage (Tariku, 2008).

Eyasu (2016) studied the common factors contributing to adolescent childbearing and influencing on adolescent fertility in rural Ethiopia. The most contributing risk factors for adolescent childbearing of women in rural Ethiopia were religion, current contraceptive method use, woman educational level, wealth index according to the study based on the women data of Ethiopia Demographic and Health Survey (2011). The risk of having children in adolescent years was greater for uneducated women than the educated women aged (15-19) years. Besides, the chance of having a child by teenage women in poor household was higher than that for women in non-poor household. Rural women aged at adolescent years without knowledge of how to use contraceptive method and which method is suitable for their married life had the high risk of giving children and dying infant than women having contraceptive knowledge.

Nyarko (2012) analyzed the determinants of adolescent fertility in Ghana using the 2008 Ghana Demographic and Health Survey. It underlined the significant factors on adolescent having birth such as educational level of the female adolescent and her partner, occupation, the exposure to media and the wealth status. To alleviate the high rate of adolescent fertility, it needs to progress the child education and knowledge of reproductive health preventions through social media widely used.

Monari et al. (2022) explored the determinants of adolescent fertility in Kenya. The objective of the Kenyan Adolescent Sexual Reproductive Health (ASRH) policy developed in 2015 is to decrease early and unintended pregnancies in an attempt to reduce adolescent fertility. The Kenya Demographic and Health Survey (KDHS) 2014 data set was utilized. Adolescent's number of children ever born was the dependent variable. The Chi-square test and proportional-odds model was performed. The study established that age at first sex, current age, marital status, and contraceptive use are the main determinants of adolescent childbearing. These determinants should be targeted by the government to control the adolescent birth rate in Kenya. Consequently, delaying the age at first sex, discouraging adolescent marriage, and increasing secondary school enrollment among adolescent girls are recommended strategies to control adolescent fertility in Kenya.

Although Myanmar is one of the lowest adolescent fertility among the ASEAN Countries, stark disparity was observed among the states and regions as well as urban and rural areas in Myanmar. Compared with the percentage of ever married adolescent women in 2014, it can be seen that the percentage of those women had increased in 2019. According to the 2019 ICS, the adolescent fertility rate for Myanmar was about 20 births per 1000 women aged 15-19 years. There were 17 births per 1000 adolescent women in urban areas and 22 births in rural areas (Department of Population, 2020). At the regional level, the rates differed from a low of 13 births per 1000 adolescent women in Bago Region to a high of 43 births in Chin State. In Myanmar, the adolescent fertility rate was gradually declining but its negative impact on youth is still a critical issue to be reduced (ICS, 2020).

As discussed above, various authors and researchers investigated the relationship between adolescent fertility and demographic and socio-economic factors. This study intends to analyze the influencing factors of adolescent fertility in Myanmar. Hence, the following research questions are formulated to meet the main aim of the study. These research questions for this study are shown below.

- ◆ What is the highest adolescent fertility in states and regions of Myanmar?
- ◆ How do demographic factors and socio-economic factors relate to the adolescent fertility in Myanmar?

II. Purpose of the Study

The purpose of the study is to analyze adolescent fertility patterns and their determinants among women of reproductive age (15–19) years with the view of enhancing the achievement of SDGs number three (good health and well-being). On the basis of the study's purpose, the specific objectives of the study are to:

- (i) find out the highest adolescent fertility in states and regions of Myanmar.
- (ii) find out the influence of demographic and socio-economic factors on the adolescent fertility among women in Myanmar.

III. Methodology

Data

In this study, the survey data are obtained from 2019 Myanmar Inter-censal Survey, Department of Population, Ministry of Labour, Immigration and Population. The 2019 inter-censal survey is a periodic cross-sectional survey conducted at the household level and represented by the sample of 548553 individuals (258353 males and 290200 females) in 132,092 selected households were interviewed. A total of 23104 adolescent women are selected for this study.

Variables of the Study

The dependent and some independent variables are selected from previous literatures of adolescent fertility on the basic of the objectives of this study. The dependent variable is the adolescent fertility among women who are measured on completed age of respondents during the interviewing period. If the adolescent women aged (15-19) years had given birth, which takes as 1 and otherwise, the value is zero. The independent variables which are expected to have an impact on adolescent fertility are women's age, education, occupation, household size, annual family income, ownership of house, access of electricity, parent live in household, states and regions, type of residence, and length of residency. In this study, the classification of dependent and independent variables considered for the model are exposed in Appendix Table (1).

Methods

The statistical methods such as descriptive analysis, Chi-square test and binary logistic regression analysis are used in this study. In this study, logistic regression model is used to investigate the effect of predictors on the adolescent childbearing of women in Myanmar.

The response variable is dichotomous and Bernoulli random variable with two possible values, $Y_i = 1$ with probability of having child $P_i = P(Y_i = 1/X_i)$ and $Y_i = 0$ with probability of not having child $1 - P_i = 1 - P(Y_i = 1/X_i)$. The logistic regression model can be shown as follows:

$$P_i = P(Y_i = 1 / X_i) = \frac{e^{X_i\beta}}{1 + e^{X_i\beta}}, i = 1, \dots, n$$

where $P(Y_i = 1/X_i)$ is the probability of i^{th} adolescent woman having child and her individual characteristic X_i , and $\beta = (\beta_0, \beta_1, \dots, \beta_k)^T$ are the model parameters to be estimated.

However, the relationship between the probability of i^{th} adolescent women having child given her individual characteristics are nonlinear. In order to make meaningful interpretation, logit transformation of the probability of i^{th} adolescent woman having child should be written as linear combinations of predictors which is given by:

$$\log\left(\frac{P_i}{1-P_i}\right) = \log_{it}(P_i) = \sum_{j=0}^K \beta_j X_{ij}, i = 1, 2, \dots, n; j = 0, 1, \dots, K$$

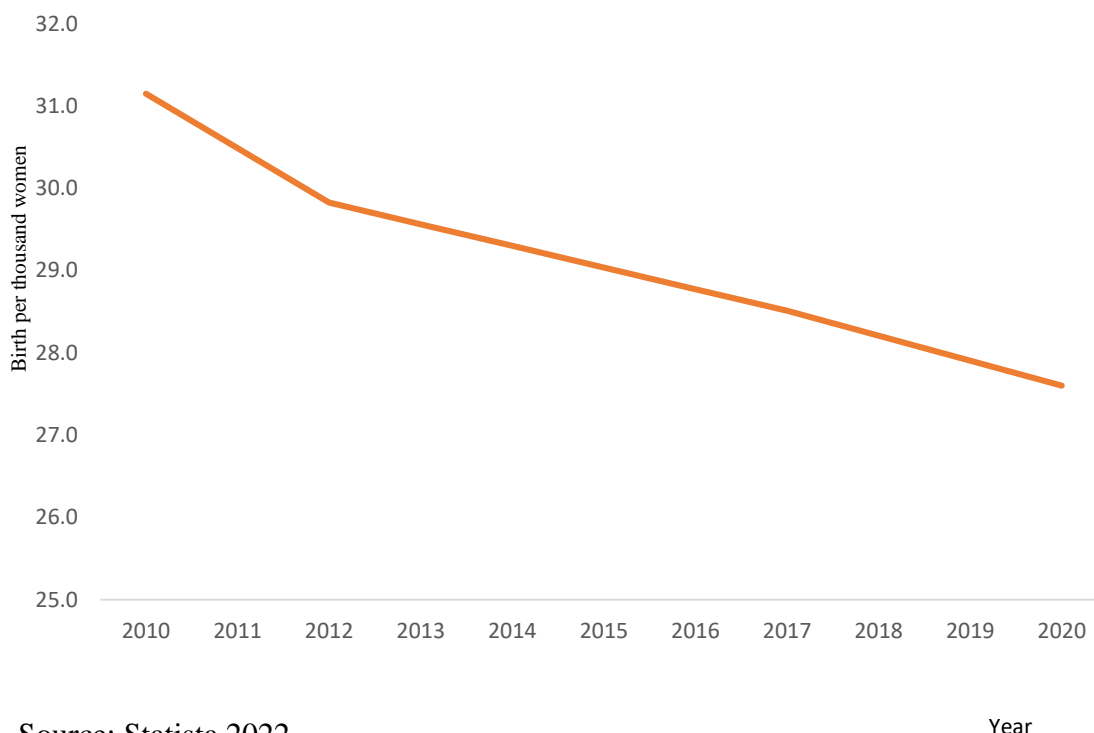
In binary logistic regression, odds ratio $\exp(\hat{\beta})$ is the exponential of the estimated coefficient. In case of categorical predictor variable, $\exp(\hat{\beta})$ is the predicted change in odds of having child for adolescent women for a given category of the predictor variable with respect to the reference category. As preliminary step to variable selection, the Pearson's chi-square and the likelihood ratio chi-square tests were used for categorical predictor variables. The model is validated by checking the goodness of fit and discrimination on a different set of data from that which will be used to develop the model. The Pearson's Chi-square, the likelihood ratio tests, Hosmer and Lemeshow Goodness of fit test and the Wald tests are the most commonly used measures of goodness of fit for categorical data (Hosmer and Lemeshow, 2000).

IV. Results

Pattern of Adolescent Fertility Rate in Myanmar

The trend pattern of adolescent fertility rate in Myanmar from 2010 to 2020 is illustrated in Figure (1).

Figure (1) Pattern of Adolescent Fertility Rate in Myanmar



Source: Statista 2022

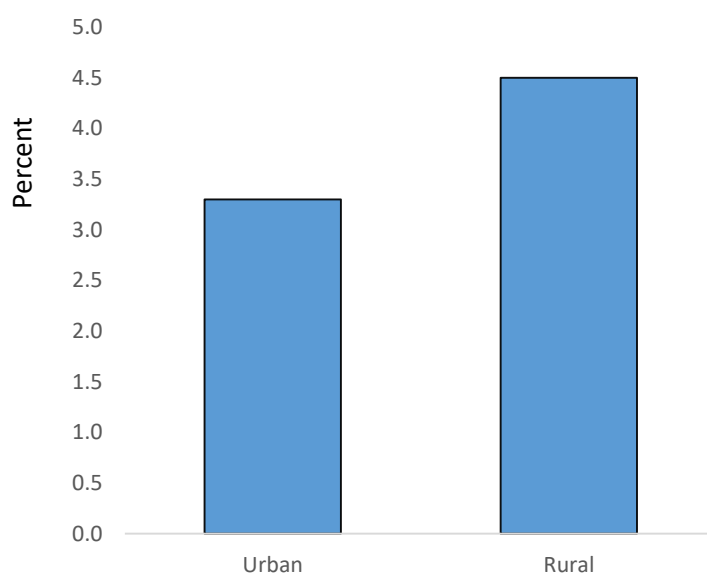
In Figure (1), it can be seen that there was the downward trend pattern of the adolescent fertility rate in Myanmar from 2010 to 2020. When compared year to year, the adolescent fertility rate decreased by 1% annually, but after it had decreased once,

a stable pattern could be observed for three or four years. On the other hand, this rate continually decreased during that time (2010–2020). It can be said that the challenges posed by early child birth are particularly striking among teens aged (15–19) years in Myanmar. As a result, it is one of the current issues that has to be eradicated.

Adolescent Fertility Rate in Urban and Rural Areas of Myanmar

The adolescent fertility rate in 2019 is described in Figure (2) by urban and rural areas of Myanmar.

Figure (2) Bar Chart of Adolescent Fertility Rate in Urban and Rural Areas of Myanmar



Source: 2019 Inter-censal Survey

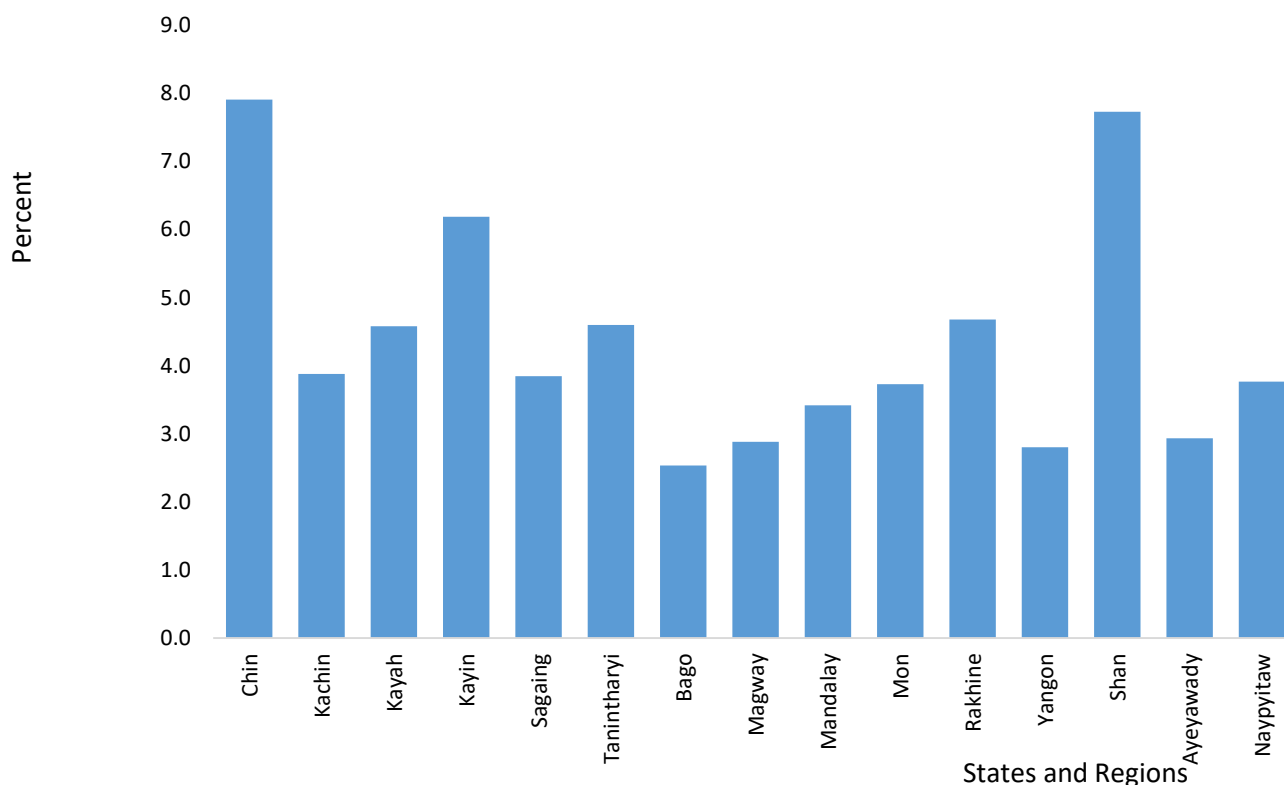
Place of residence

The above figure showed that the percentage of adolescent fertility in rural areas was higher than in urban areas. Most young women in Myanmar, particularly in rural areas, lacked knowledge about fertility and how to start their lives. This is due to their lower standard of living and low educational level of their parents or relatives, as well as themselves. According to the culture of their living areas, early adolescent pregnancies are often unplanned or unwanted as the result of forced or early marriage, and they lead almost inevitably to a pre-mature transition from childhood to motherhood. Women in rural areas, unlike those in urban areas, do not have access to information about the negative impact of adolescent fertility through the media or mobile discussions.

Adolescent Fertility Rate in States and Regions of Myanmar

The adolescent fertility rate in 2019 is shown in Figure (3) by States and Regions.

Figure (3) Bar Chart of Adolescent Fertility in States and Region of Myanmar



Source: 2019 Inter-censal Survey

Figure (3) shows that compared to other states and areas, Chin State had the highest percentage of adolescent fertility, followed by Shan State, Kayin State, Tanintharyi Region, and Rakhine State. The slowing growth rate or the existence of less developed villages in states and regions are the causes of the highest rate of adolescent fertility. Bago Region has the lowest rate of adolescent fertility.

Demographic and Socio-economic Characteristics of Adolescent Women

The percentage distribution of adolescent women aged (15-19) years by demographic and socio-economic characteristics in Myanmar are presented in Appendix Table (2). Out of the total 23104 adolescent women included in this study, 95.84% of adolescent women had not given birth but 4.16% of those women had given birth.

The most of sampled adolescent women (39.88%) are age group 16-17 years, followed by 39.2% at age group 18-19 years and 20.92% at age 15 years. Among adolescent women, 52.81% of adolescent women have achieved high school and above, 33.16% have achieved middle school, and 14.02% have achieved primary school and below. The percentage of unemployed women are 68.82% as the most compared to that of

employed women (31.18%). Most of adolescent women have the household size (4-6) and least adolescent women have the household size (10 and above). Most of adolescent women have the family annual income (10-50 lakh) and least adolescent women have the family annual income (below 10 lakh).

Regarding the ownership of house, 92.31% of the adolescent women live in their own houses and 7.69% of the adolescent women live in their rent houses. Most of the adolescent women (56.34%) have electricity access but 43.66% of the adolescent women have not electricity access. Concerning the parent live in household, 67.99% of the adolescent women live in together father and mother but 14.21% of adolescent women do not live in together father and mother.

Sagaing Region, Mandalay Region, Yangon Region, Ayeyawady Region and Shan State have the highest percentage of adolescent women. Kayah and Rakhine States have the lowest proportion of adolescent women. Most of adolescent women (71.54%) live in rural areas and 28.46% of adolescent women live in urban areas. In addition, the majority of adolescent females (94.2%) have lived in a place for more than 5 years, while 5.79% have lived in a place for 5 or less years.

Association between Adolescent Fertility of Women and Demographic and Socioeconomic Characteristics

Pearson Chi-square test is used to analyze whether there is an association between demographic and socioeconomic characteristics and adolescent fertility of women. The results of Chi-square test are shown in Appendix Table (3). It can be seen that women's age, education, occupation, household size, annual family income, access of electricity, parent live in household, states and regions, type of residence and length of residency are related to adolescent fertility of women at the 1% level.

Binary Logistic Regression Analysis for Adolescent Fertility of Women

To analyze the determinants of adolescent fertility, binary logistic regression analysis is carried out. Appendix Table (4) shows that the model fitting information for adolescent fertility of women. Regarding the model fitting information for adolescent childbearing of women, the Chi-square value is 2365.93, which is statistically significant at 1% level. This implies that one or more of the effects (explanatory variables) in the model is important for predicting the probability of having adolescent childbearing of women in Myanmar. The Pseudo R-square shows that about 32.16% of the variation in the adolescent childbearing of women is explained by this logistic model. Hosmer-Lemeshow goodness of fit test states how closely the observed and predicted probabilities match. The results of Hosmer and Lemeshow statistic (Chi-square=11.03, df = 8, p-value = 0.2>0.01) shows that the data fit the model well.

To examine the determinants of adolescent childbearing of women, binary logistic regression analysis is carried out. Of the eleven independent variables selected for the study, only nine variables related to the adolescent childbearing are shown in Appendix Table (5). The significant variables are women's age, education, occupation, annual family income, household size, parent live in household, states and regions, type of

residence and length of residency. Adolescent women's age groups of (16-17) years and (18-19) years are about 7.08 and 36.21 times more likely to have children in their adolescent years than adolescent women's age of 15 years. An adolescent from larger household (7-9 members) and 10 members or above are about 1.44 and 1.38 times more likely to have children in their adolescent years than adolescent from smaller household (1-3 members). Adolescents who lived in rural areas are about 1.22 times more likely to have children in their adolescent years than adolescents who lived in urban areas. Adolescents who lived in a place for more than 5 years are about 1.32 times more likely to have children in their adolescent years than adolescents who lived in this place for 5 years or below.

By contrast, adolescent women who achieved a middle level are about 0.31 times less likely to have children in their adolescent years than adolescent women who achieved primary level and below. Adolescent women who achieved a high level and above are about 0.91 times less likely to have children in their adolescent years than adolescent women who achieved primary level and below. It is found that adolescent women's occupation has been an important predictor of adolescent childbearing. Employed adolescents are about 0.56 less likely to have children in their adolescent years than unemployed adolescents. In addition, adolescents with a household annual income of (10-50 lakh) and (above 50 lakh) are about 0.25 and 0.31 times less likely to have children in their adolescent years than adolescents with a household annual income of below 10 lakh. Moreover, parent live in household has been an important predictor of adolescent childbearing. Adolescents who lived with her mother are about 0.78 less likely to have children in their adolescent years than adolescents who did not live with her parent. Adolescents who lived with her father and with her parent are about 0.84 less likely to have children in their adolescent years than adolescents who did not live with her parent. Adolescents who lived with her parent are about 0.88 less likely to have children in their adolescent years than adolescents who did not live with her parent. Adolescents who lived in Kachin, Kayah, Kayin, Sagaing, Tanintharyi, Bago, Magway, Mandalay, Mon, Rakhine, Yangon, Shan, Ayeyarwady and Naypyitaw are about 0.52, 0.52, 0.41, 0.57, 0.59, 0.78, 0.62, 0.56, 0.70, 0.45, 0.66, 0.38, 0.76, and 0.57 times less likely to have children in their adolescent years than adolescents who lived in Chin State.

V. Discussions

The findings of this study have pointed out that nearly 5% of adolescent women had given birth and more than 10% of adolescent women had married. The findings from binary logistic regression analysis, it is found that adolescent women's educational level have an effect on adolescent fertility of women in Myanmar. The risks of early marriage and having children of adolescent women who had secondary or higher education are lower than those who had primary education. This finding is consistent with the studies of Alemayehu, et al. (2010), Eyasu (2016), Nyarko (2012), and Kamal (2012). Those women who have completely attained the primary or secondary level have lower probability of giving early child birth than those women without any

educational level. Hence, it can be concluded that women's secondary or higher education acted as catalyst toward delayed childbearing. As the result, the annual income of their household can be seen as an important characteristic for adolescent fertility. In particular, teenage girls from low-income households are more likely to have a child than those from high-income households. This study also consistent with Kamal (2012) and Nyarko (2012) reported that the richer women are less likely to have adolescent fertility than the poorest women. This is because women from wealthier families are more educated and more aware of the timing to marriage and having child and the negative effects of early motherhood than women from poorer families.

It is also found that occupation has been an important predictor on adolescent fertility. The risks of having child of employed adolescent women are lower than unemployed adolescent women. This finding is consistent with studies of Eyasu (2016) and Nyarko (2012) stated the unemployed adolescent women are more likely to have marriage and give birth compared to those of employed women.

VI. Conclusion and Recommendations

This study investigates the demographic and socio-economic determinants of adolescent fertility among women aged (15-19) years. It is resulted that 10.73% of adolescent women had married but 4.16% of those women had given birth.

The findings from binary logistic regression concluded that women's age, education, occupation, annual family income, household size, parent live in household, states and regions, type of residence and length of residency are the risk factors for adolescent fertility in Myanmar. The risk of having a child for adolescent women who had primary education is higher than those who had secondary or higher education. Besides, almost married adolescents giving birth at the age of 15 had not completely attained any level of education. Therefore, special attention should be given to teenage girls to be attained at least secondary or above educational level. In addition, the chance of having a child for adolescent women who had poor income households is higher than women who had rich income households. Teenage females having birth cannot enter to or can leave from their work place due to early marriage, giving birth and looking after their children, resulting in fewer economically productive adults at national level, and lower wealth status for their survival life. Government can conduct variety of strategies among poor families to better lives and better decisions about having children during adolescence. Having children in adolescent years exposes these women aged (15-19) years to unnecessary risk related to pregnancy and child births. It has an impact on the health of young mothers due to their young age and knowledge gap on child bearing.

Further studies should be recommended to assess the impact of other variables (ever used conception, knowledge of ovulatory cycle and media exposure) to different dimensions on adolescent fertility. This study attempts to understand the variables

studied at one point in time. Accordingly, other studies should conduct a longitudinal design on the determinants of adolescent fertility among women.

The findings of this study are expected to aid in the understanding of the factors that affect adolescent women's fertility and the health and well-being challenges they face in doing so. The results of this study may help the government, policy makers and local planners to enhance policies and laws in the prohibition of adolescent fertility, which would alleviate poverty and would increase good health and well-being of adolescent women. Because they will be able to identify the factors that influence the adolescent fertility of women, the government and local planners may benefit from this research in reducing adolescent fertility. Significantly, this may contribute to the prohibition of adolescent fertility, thereby, reducing poverty and maternal mortality as well as improving health and well-being of adolescent women.

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Appendix

Table (1) Classification of Dependent and Independent Variables

<p>Dependent Variable Y= Adolescent fertility = 0 if adolescent woman had not given birth = 1 if adolescent woman had given birth</p> <p>Independent Variables X₁= Age = 1 if 15 years = 2 if 16-17 years = 3 if 18-19 years X₂= Education = 1 if primary and below = 2 if middle = 3 if high and above X₃= Occupation = 1 if unemployed = 2 if employed X₄= Household annual income = 1 if below 10 lakh = 2 if 10-50 lakh = 3 if above 50 lakh X₅= Household size = 1 if 1-3 = 2 if 4-6 = 3 if 7-9 = 4 if 10 and above X₆ = Ownership of household = 1 if owned = 2 if rent</p>	<p>X₇ = Access of electricity = 1 if yes = 2 if no X₈ = Parent live in household = 1 if father and mother do not live in household = 2 if mother live in household = 3 if father live in household = 4 if both father and mother live in household X₉ = States and regions = 1 if Chin = 2 if Kachin = 3 if Kayah = 4 if Kayin = 5 if Sagaing = 6 if Tanintharyi = 7 if Bago Shan = 8 if Magway = 9 if Mandalay = 10 if Mon = 11 if Rakhine = 12 if Yangon = 13 if Shan = 14 if Ayeyarwady = 15 if Nay Pyi Taw X₁₀ = Residence = 1 if urban = 2 if rural X₁₁ = Length of residency = 1 if 5 years and below = 2 if above 5 years</p>
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Table (2) Percent Distribution of Demographic and Socio-Economic Characteristics among Adolescent Women

Variables	Categorization	Number	Percent
Adolescent Fertility	Non-Birth	22,143	95.84
	Birth	961	4.16
Age	15	4,834	20.92
	16-17	9213	39.88
	18-19	9057	39.2
Education	Primary and below	3,151	14.02
	Middle	7,452	33.16
	High and above	11,868	52.81
Occupation	Unemployed	15,900	68.82
	Employed	7204	31.18
Household size	1-3	3,129	13.54
	4-6	13,781	59.65
	7-9	4,966	21.49
	10 and above	1,228	5.32
Household annual income	Below 10 lakh	2,892	12.52
	10-50 lakh	15,432	66.79
	Above 50 lakh	4,780	20.69
Ownership of house	Owned	21,327	92.31
	Rent	1,777	7.69
Electricity Access	Yes	13,016	56.34
	No	10,088	43.66
Parent live in household	Father and mother do not live in Household	3,284	14.21
	Mother live in household	3,268	14.14
	Father live in household	843	3.65
	Both father and mother live in household	15,709	67.99
States and Regions	Chin	531	2.3
	Kachin	1,237	5.35
	Kayah	415	1.8
	Kayin	1,277	5.53
	Sagaing	2,989	12.94
	Tanintharyi	1,044	4.52
	Bago	1,776	7.69
	Magway	1,561	6.76
	Mandalay	2,661	11.52
	Mon	992	4.29
	Rakhine	406	1.76
	Yangon	2,428	10.51
	Shan	2,704	11.7
	Ayeyawady	2,419	10.47
	Naypyitaw	664	2.87
Residence	Urban	6,576	28.46
	Rural	16,528	71.54
Length of residence	5 years or below	1,337	5.79
	Above 5 years	21,767	94.21

Source: 2019 Myanmar Inter-censal Survey

Table (3) Bivariate Analysis of Adolescent Fertility by Demographic and Socioeconomic Characteristics

Demographic and Socio-economic characteristics		Chi-square	P-value
Age	15	744.74****	0.000
	16-17		
	18-19		
Education	Primary and below	811.8***	0.000
	Middle		
	High and above		
Occupation	Unemployed	69.58****	0.000
	Employed		
Household size	1-3	106.41****	0.000
	4-6		
	7-9		
	10 and above		
Household annual income	Below 10 lakh	45.48****	0.000
	10-50 lakh		
	Above 50 lakh		
Ownership of house	Owned	0.26	0.613
	Rent		
Access of electricity	Yes	55.76***	0.000
	No		
Parent live in household	Father and mother do not live in Household	1700***	0.000
	Mother live in household		
	Father live in household		
	Both father and mother live in household		
States and Regions	Chin	163.14****	0.000
	Kachin		
	Kayah		
	Kayin		
	Sagaing		
	Tanintharyi		
	Bago		
	Magway		
	Mandalay		
	Mon		
	Rakhine		
	Yangon		
	Shan		
	Ayeyawady		
Naypyitaw			
Residence	Urban	17.04***	0.000
	Rural		
Length of residence	5 years or below	104.36****	0.000
	Above 5 years		

Note: ***, **, * represent 1 percent, 5 percent and 10 percent level of significance.

Source: 2019 Myanmar Inter-censal Survey

Table (4) Model Fitting Information for Adolescent Fertility of Women

Model fitting criteria	χ^2 value	d.f	P-value
LR Chi-square	2365.93	31	0.000***
Hosmer and Lemeshow (H-L) Test	11.03	8	0.2
Log Likelihood	-2495.55		
Pseudo R Square	0.3216		

Note: ***, **, * represent 1 percent, 5 percent and 10 percent level of significance.
Source: 2019 Myanmar Inter-censal Survey

Table (5) Parameter Estimates of Binary Logistic Regression Model for Adolescent Fertility of Women

Independent variables		Coef.	Odds Ratio	P-value	Marginal Effect
Constant		-2.87***	0.06	0.000	
Age	15 (ref)				
	16-17	1.96***	7.08	0.000	0.0169
	18-19	3.59***	36.21	0.000	0.0756
Education	Primary and below (ref)				
	Middle	-0.38***	0.69	0.000	-0.0207
	High and above	-2.39***	0.09	0.000	-0.0712
Occupation	Unemployed (ref)				
	Employed	-0.82***	0.44	0.000	-0.0236
Annual income	Below 10 lakh (ref)				
	10-50 lakh	-0.29***	0.75	0.008	-0.0092
	Above 50 lakh	-0.37***	0.69	0.009	-0.0115
Household size	1-3 (ref)				
	4-6	0.02	1.02	0.838	0.0006
	7-9	0.37***	1.44	0.003	0.0112
	10 and above	0.32*	1.38	0.058	0.0097
Ownership of house	Owned (ref)				
	Rent	0.05	1.05	0.765	0.0014
Access of electricity	Yes (ref)				
	No	0.15	1.16	0.121	0.0043
Parent live in household	Father and mother do not live in household (ref)				
	Mother live in household	-1.50***	0.22	0.000	-0.0757
	Father live in household	-1.83***	0.16	0.000	-0.0841
	Both father and mother live in household	-2.15***	0.12	0.000	-0.0903

Note: ***, **, * represent 1 percent, 5 percent and 10 percent level of significance.
Source: 2019 Myanmar Inter-censal Survey

Table (5) Parameter Estimates of Binary Logistic Regression Model for Adolescent Fertility of Women (Contd.)

Independent variables		Coef.	Odds Ratio	P-value	Marginal Effect
States and Regions	Chin (ref)				
	Kachin	-0.74***	0.48	0.004	-0.03
	Kayah	-0.74**	0.48	0.035	-0.03
	Kayin	-0.53**	0.59	0.029	-0.0226
	Sagaing	-0.84***	0.43	0.000	-0.0332
	Tanintharyi	-0.88***	0.41	0.001	-0.0344
	Bago	-1.52***	0.22	0.000	-0.0499
	Magway	-0.98***	0.38	0.000	-0.0371
	Mandalay	-0.83***	0.44	0.000	-0.0328
	Mon	-1.20***	0.30	0.000	-0.043
	Rakhine	-0.60*	0.55	0.081	-0.0254
	Yangon	-1.08***	0.34	0.000	-0.0398
	Shan	-0.47**	0.62	0.036	-0.0206
	Ayeyawady	-1.41***	0.24	0.000	-0.0477
	Naypyitaw	-0.85***	0.43	0.007	-0.0336
Residence	Urban (ref)				
	Rural	0.20*	1.22	0.069	0.0058
Length of residency	5 years or below (ref)				
	Above 5 years	0.28**	1.32	0.036	0.0077

Note: ***, **, * represent 1 percent, 5 percent and 10 percent level of significance.

Source: 2019 Myanmar Inter-censal Survey

Estimation of Rate of Returns on Investment in Education in Myanmar

Khin Moh Moh*

Abstract

Education is one of the main drivers of economic growth and development. The success of education system of a country depends on the motivation of individuals within the system. A person's motivation to pursue education is largely determined by the monetary returns among other things such as career advancement, skill development, and employment opportunities. This study aims to analyse the returns on education in Myanmar by using data from Labour Force Survey (2015) of Myanmar. The Mincer's wage model was used to analyse the rate of returns on investment in education. The findings showed that education had positive and significant effect on earnings, and the rate of returns was about 2.9 percent in 2015. Moreover, there was an inverted U-shaped relationship between working experience and earnings. The results also indicated that there was an income gap in gender, region and marital status in Myanmar. According to the results, working family members' education could contribute to improve the type of their occupation and higher wage. Based on the findings, it is recommended that the estimation of rate of returns on investment in education is important for the policymaker in order to create the society with people more pursuing education.

Keywords: Economic growth, returns on education, Mincer Model, Inverted U-shaped,

1. Introduction

There is a strong consensus among economists that education is the vital determinants of people's earnings. According to the human capital theory, education is an investment that increase the skills and productivity of individuals involved in various industries (Low, 2000). Accordingly, these individuals earn higher income in job market due to their skills and efficiencies. Education can also increase earnings. According to this view, education mainly serves as a signal about the qualifications of the workers to potential employers.

As employers cannot easily observe the abilities of workers in most cases, they may rely on education as a signalling device in their hiring decisions. Above all, returns on investment in education are useful to examine effectiveness of education. Returns on education play an indispensable role in designing policies and crafting incentives that promote investment and ensure that even low-income families make an investment in education.

According to OECD (2009), education is part of the solution to current economic challenges, enhancement of innovative capacity, and fight against climate change. In developing countries, education gives people wider access to paid employment, success, proper health care and knowledge of legal rights. Although education plays an essential role in socioeconomic improvement at individual and national level, many developing countries are experiencing disparities in education sector and low returns from different levels of education.

Based on human capital theory, return on investment in education has been studied since the mid-twentieth century. Human capital can be invested in different ways including formal schooling and trainings. Investment in education makes benefits at many levels from individual economic prosperity to achieving economic

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development at the national level. While developed countries have measured returns from various levels of education since the 1950s, developing countries have estimated them since the late twentieth century. As human capital is a factor that generate desirable impact on economy, it is important to explore the return on education of the countries, especially for developing countries.

In Myanmar, education is regarded as an main element in the development of socio-economic sector. Educating children and young people may lead to better economic and social changes which is vital for economic development of Myanmar. Basic education structure of Myanmar is 5:4:2 with five years at primary school, four years at middle school and two years at high school. At higher education level, professional and non-professional universities are offering diploma and bachelor, master's and doctorate degrees. In addition to formal education, non-formal education also provides benefits to various stakeholders in Myanmar. Non-formal education which operates outside the formal education system encompasses all the organized education such as literacy programs, adult education, vocational and occupational education, on-the-job training, health education, and continuing education for unfortunate children.

While data on non-formal education are difficult to obtain properly at national level, its advantages are enormous. Educating children and young people as the agents of positive social change is of vital importance in Myanmar. The National Education Strategic Plan (NESP) of Myanmar for 2017-2021 is an ambitious road map for a first phase of reforms that aims to develop teaching, learning and inclusion on all education levels. According to the NESP, basic education school year is increased to thirteen years with new curricula and interactive classrooms.

In economics, wage level is determined by productivity of labour. Among all possible contributing factors to labour productivity, education is more essential comparing to other factors. Decision making on education investment is similar to that of other economic assets. It compares the cost incurred at the present period with the present value of the future flows of benefits, and investment is made only when the total benefits compensate the total cost. It also needs to check out whether it is appeal more investing in education in Myanmar. Therefore, it is crucial to carry out this study to get to the estimates of return on education from the investment in education.

1.1 Objective of the Study

The objective of this study is to analyse the estimated rate of returns on investment in education in Myanmar using Mincer wage model and extended Mincer wage model.

1.2 Scope of the Study

The effect of education on an individual or a society or a country is vast and multi-dimensional. In social dimension, the behaviour of more educated people is socially accepted and a smaller number of crimes in the community could be expected. In health dimension, more educated people have higher level of health knowledge and longer life expectancy could be anticipated. Similarly, better educated people are regarded as potential to earn higher and have higher economic status. In particular, the

scope of this study is confined to the estimation of the rate of returns on education in Myanmar and the source of data was from Labour Force survey 2015.

2. Data and Method

2.1 Source of Data

This study was used the secondary data from Labour Force Survey (2015) in Myanmar. As it was a sample survey, the sampling frame was based upon the Population and Housing Census conducted in 2014. The census included 80,557 enumeration areas, of which a sample of 1,500 enumeration areas was selected and within these areas 24,000 households were chosen for this labour force survey. The first collected sample size is 13,173 respondents, which includes both people in the labour force and not in the labour force. However, due to the constraints such as respondent must be at the working age of between 15 and 65 years, respondent must earn regular wages, and respondent must be combined with parents, the sample size was reduced to 2,134 respondents in estimating the Mincer wage model.

2.2 Description of Variables Included in the Study

This study describes the nine variables and definitions which are mainly used in estimation of returns on education in Myanmar. Out of the nine variables, gender, marital status, and location variables are binary dummy variables. The other variables are continuous variables such as wage, age, education, and working experience. In this study, *lnwage* is the dependent variable. Explanatory variables are education, age, experience, gender, marital status, and location. Dependent variable and explanatory variables included for the study are;

1. *wage*: Variable for earnings, this measures the salary or wage of respondent per month in thousand kyats.
2. *lnwage*: This measures the natural logarithm of monthly wage of respondent from job.
3. *educ*: Variable for respondent's education, this measures the years of schooling of the respondent.
4. *age*: Age in years.
5. *exp*: Variable for experience, this measures the working experience in months.
6. *exp²*: This is defined the square of working experience in months.
7. *male*: This is defined gender of the respondent (1 if male and 0 female).
8. *single*: This is defined marital status of the respondent (1 if single and 0 otherwise).
9. *urban*: This is defined location of the respondent (1 if urban and 0 rural).

2.3 Basic Mincer Wage Model and Extended Mincer Wage Model

In this study, the secondary data from Labour Force Survey in Myanmar (2015) were used to estimate the rate of returns on education by using the Mincer's wage models. In the basic form of Mincer's wage model, logarithm of wage was regressed on education level and experience while in the extended form other control variables such as squared-experience, gender, and location were included. Parameters in the

model were estimated by Mincer wage model and extended Mincer wage model. The rates of returns on education are estimated by the following basic Mincer's wage model.

$$lnwage = \beta_0 + \beta_1educ + \beta_2exp + \beta_3exp^2 + \varepsilon$$

where $lnwage$ = Natural Logarithm of Wage in Months ('000 kyats)
 $educ$ = Years of Schooling
 exp = Working Experience in Years
 exp^2 = Square of Working Experience in Years

β 's the population regression coefficients and ε the error term.

The basic Mincer wage model is, therefore, extended by incorporating gender, marital status, and location variables. From the extended Mincer wage model:

$$lnwage = \beta_0 + \beta_1educ + \beta_2(educ \times male) + \beta_3exp + \beta_4exp^2 + \beta_5male + \varepsilon$$

Compared to the basic Mincer wage equation, the above equation incorporates a gender variable, *male*, and an interaction term between education and male, (*educ*male*).

$$lnwage = \beta_0 + \beta_1educ + \beta_2(educ \times single) + \beta_3exp + \beta_4exp^2 + \beta_5single + \varepsilon$$

Compared to the basic Mincer wage equation, the above equation incorporates a marital variable, *single*, and an interaction term between education and single, (*educ*single*).

$$lnwage = \beta_0 + \beta_1educ + \beta_2(educ \times urban) + \beta_3exp + \beta_4exp^2 + \beta_5urban + \varepsilon$$

Compared to the basic Mincer wage equation, the above equation incorporates a location variable, *urban*, and an interaction term between education and urban, (*educ*urban*).

3. Results

3.1 Parameters Estimation for Basic Mincer Wage Model

This study estimates the following Mincer's wage model, where log-wage is regressed on education, experience, and squared-experience. The constant (linear) effect of experience on wage is very restricted. In reality, wage can increase until a certain level of experience, beyond which wage can decrease as experience increases. In order to capture this quadratic effect (inverted U-shape) of experience on wage, the squared experience term is introduced in the model.

$$lnwage = \beta_0 + \beta_1educ + \beta_2exp + \beta_3exp^2 + \varepsilon$$

Table (1) reports the estimated OLS results of the basic Mincerian wage model. The estimated equation yields the following information. All the coefficients are highly and significantly different from zero since the absolute *t* statistics (8.34) are much larger than the 5 percent critical value of 1.96. R^2 is particularly low, suggesting that is explained by human capital only 4 percent of the variation of the log-wage of respondents. The return of an additional year of education is estimated to be approximately 2.9 percent. In the first month in the labour force, other things being equal, the relationship between experience and wage shows that respondent get 0.5

percent on average, but it will decline after a certain level of experience. The negative coefficient related to quadratic term for experience reveals the concavity of the experience-wage relationship which is in confirmatory in almost all Mincer based studies. Therefore, the return on education or wage is decreasing with extra working experience since the function is resulted as an inverted U- shape. The estimated constant coefficient suggests that someone entering the labour market for the first time with no educational investment will on average have monthly wage of 63.50 thousand kyats ($= e^{4.151}$).

Table (1) Estimated Basic Mincer Wage Model with OLS

Variables	OLS
educ	0.02939*** (0.00352)
exp	0.00523*** (0.00149)
exp2	-0.0003*** (0.00001)
Constant	4.15084*** (0.04015)
N	2134
R-squared	0.0393
Standard errors in parentheses	

Note: *, **, *** Significant at the 10%, 5%, and 1% level respectively.

3.2 Parameters Estimation for Extended Mincer Wage Model

In this study, the basic Mincer wage model is extended by incorporating gender, marital status, and location variables.

Extended Model (1)

The following Model (1) extended the Mincer wage model to include the interaction between education and male.

$$\ln wage = \beta_0 + \beta_1 educ + \beta_2(educ \times male) + \beta_3 exp + \beta_4 exp^2 + \beta_5 male + \varepsilon$$

where the dependent variable is $\ln wage$ while the independent variables are education, interaction of education and male, experience, squared experience, and male.

Extended Model (2)

The following Model (2) extended the Mincer wage model to include the interaction between education and single.

$$\ln wage = \beta_0 + \beta_1 educ + \beta_2(educ \times single) + \beta_3 exp + \beta_4 exp^2 + \beta_5 single + \varepsilon$$

where the dependent variable is $\ln wage$ while the independent variables are education, interaction of education and single, experience, squared experience, and single.

Extended Model (3)

The following Model (3) extended the Mincer wage model to include the interaction between education and urban.

$$\ln wage = \beta_0 + \beta_1 educ + \beta_2(educ \times urban) + \beta_3 exp + \beta_4 exp^2 + \beta_5 urban + \varepsilon$$

where the dependent variable is $\ln wage$ while the independent variables are education, interaction of education and urban, experience, squared experience, and urban.

Table (2) Extended Mincer Wage Models with IV Method

Variables	Model 1	Model 2	Model 3
Educ	0.08420*** (0.01176)	0.17213*** (0.04261)	0.07312*** (0.01901)
educ*male	-0.06148*** (0.12731)		
Exp	0.00493*** (0.00166)	0.00342** (0.00186)	0.00459*** (0.00173)
exp ²	-0.00003** (0.00001)	-0.00002 (0.00001)	-0.00003** (0.00001)
Male	0.81976*** (0.12219)		
educ*single		-0.14203*** (0.04205)	
Single		1.12819*** (0.36619)	
educ*urban			-0.03839** (0.01906)
Urban			0.36618** (0.15547)
Constants	3.50634*** (0.10845)	3.02708*** (0.36073)	3.78744*** (0.14466)
N	2134	2134	2134

Robust standard errors in parentheses

Note: *, **, *** Significant at the 10%, 5%, and 1% level respectively.

Table (2) presents the estimated results of extended Mincer wage models. The second column of Table (2) shows that all variables in the extended Mincer wage model (1) are still significant. The coefficient of the binary gender variable, *male*, is positive and significant, suggesting that the average wage of male is higher than female.

The coefficient of the interaction term, *educ*male*, for a respondent with additional one year of education, suggesting that male respondent leads to an increase in wages of approximately $[0.81975 - 0.06148(1) = 0.75827]$. It also would indicate that the slope of gender-earnings profile depends on the level of education (especially on male). Because human capital theory (Becker, 1962) implies that males with the higher level of education are likely to be getting the better job opportunities with highly salaries. Those males who have the higher levels of education are still learning the education or training in order to improve their skill or knowledge.

The third column of Table (2) shows that all variables in the extended Mincer wage model (2) are still significant. The coefficient of the binary marital variable, *single*, is positive and significant, indicating that the average wage of single is higher than other marital status.

The coefficient of the interaction term, *educ*single*, for a respondent with additional one year of education, suggesting that single respondent leads to an increase in wages of approximately $[1.12819 - 0.14203(1) = 0.98616]$. It also would indicate that the slope of marital status-earnings profile depends on the level of education (especially on single). Because human capital theory implies that singles with the higher level of education are likely to be getting the better job opportunities with highly salaries. Those singles who have the higher levels of education are having the space in their life to spend quality time for themselves.

The fourth column of Table (2) shows that all variables in the extended Mincer wage model (3) are still significant. The coefficient of the binary urban variable, *urban*, is positive and significant, indicating that the average wage of urban area is higher than rural area.

The coefficient of the interaction term, *educ*urban*, for a respondent with additional one year of education, suggesting that who lives in urban respondent leads to an increase in wages of approximately $[0.36618 - 0.03839(1) = 0.32779]$. This result also would indicate that the slope of location-earnings profile depends on the level of education (especially on urban). Because human capital theory implies that the people who have the higher level of education in urban areas are likely to be getting the better job opportunities with highly salaries. Those people who have the higher levels of education are getting the better access to medical facilities and better job opportunities with higher salaries, having more convenient in all aspects for life in cities and getting the well transportation system.

4. Discussions and Conclusion

The findings of this study show that the rate of returns on education are estimated to be about 2.9% and the coefficient of the number of years of schooling is positive and significant. This result indicates that the rate of returns on education in

Myanmar is low. The low returns on education are highly reflected by the low education level of the participants. Moreover, the findings of positive coefficient of the linear term of working experience and the negative coefficient of the quadratic term of working experience of this study indicate that it is an inverted U-shape relationship between working experience and earnings. The implication is that earnings will not always increase at a constant rate as working experience increases. Instead, the rate of increase in earnings will decline beyond the certain level of working experience.

The estimation results of the extend form of Mincer's wage model indicates that in addition to the coefficient of male dummy variable is positive and significant, earnings of male are, on average, higher than female, while other things are constant. The estimation results of the extend form of Mincer's wage model indicates that the coefficient of marital status of single dummy variable is positive and significant in this study. Moreover, earnings of single are, on average, higher than other marital status, while other things are constant. Furthermore, the coefficient of urban dummy variable is also positive and significant. The findings also highlighted those earnings in urban areas are, on average, higher than rural areas, while other things constant.

Moreover, the coefficient of the interaction term, *educ*male*, for a respondent with additional one year of education, suggesting that male respondent leads to an increase in wages of approximately 0.75827. The coefficient of the interaction term, *educ*single*, for a respondent with additional one year of education, suggesting that single respondent leads to an increase in wages of approximately 0.98616. The coefficient of the interaction term, *educ*urban*, for a respondent with additional one year of education, suggesting that who lives in urban respondent leads to an increase in wages of approximately 0.32779. And then, the slope of the male-earning, single-earning, and urban-earning profiles depend on the level of education. Human capital theory implies that educated males with the higher level of education are likely to be getting the better job opportunities with highly salaries. It means that those educated employees who have the higher levels of education are still learning the education or training related to their fields to be improved the skill or knowledge.

5. Recommendations and Needs for Future Research

Based on the findings and discussion, the recommendations are presented. The level of rate of return to investment on education in Myanmar is low with 2.9%. So, the parents should be aware of the benefits of higher education and interested in encouraging their children to pursue this level of education. As the government, it should assist with doing the top management in the field of human capital investment on education, focus on getting the chance of high income based economy and monitor the education system in Myanmar. The government should promote the role of educated workers through raising their salaries and wages so that the investment in education might be improved.

Furthermore, this study found that the returns on education for males were higher than that for females. Therefore, the government should seek wages to empower female economically by producing income generating schemes and increasing employment opportunities. The government also should promote equal access to

opportunities such as education, jobs and decision making for the female. Moreover, this finding shows that respondents who live in urban areas have greater earnings than respondents who live in rural areas.

In this study, educational level, working experience, age, gender, marital status, residential area, and father's education was considered as the determinants for measuring returns on investment in education. In fact, there are some other factors that may have influence on determining the returns on education. These include cost of living, cost of training, skills/qualification, and demographic factors such as household size, number of siblings, sibling's current job, sibling's earnings, ease of getting access to education and so on. Therefore, it would be found out the more precise findings on returns on investment in education if someone could carry out the future research taking into account all those related factors. Moreover, the return on education should be measures in terms of social and health status in addition to monetary term. In addition, future research on returns on education should be conducted through simulation analysis.

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Modelling the Impact of Interventions on Traffic Accidents in Yangon

Khin Thet Tun*

Abstract

In many developing countries, road traffic accidents (RTA) have been very big problems. In South-East Asia Regions, Myanmar has the second-highest road fatality rate. Most of the Myanmar drivers fail to wear seat belts and also cyclists fail to wear helmets while driving. Hence, most of the accidents are due to human error and road users who do not abide by the rules. Therefore, the aim of this study is to investigate the impacts of enforcement laws and regulation interventions on road traffic accidents in Yangon. The road traffic accidents data from January 2013 to December 2021 were analysed using intervention time series analysis. In this study, the impact of the intervention in traffic law could be modelled as decaying change in level. A drop in the mean number of traffic accidents was observed in Motor Vehicle Law. This decreased was statistically significant at drop. Similarly, the intervention effect of the Permission to Import Vehicles Law is increasing number of road traffic accidents and statistically significant. The Motor Vehicle Management Law, this decreased was not statistically significant at drop was observed. In general, the results show that the legislative changes related to reduce in the number of road traffic accidents.

Keywords: Road traffic accidents, intervention methodology, Motor Vehicle Law, Permission to Import Vehicle Law, Motor Vehicle Management Law

1. Introduction

Road Traffic Accidents (RTAs) are nowadays widely considered as public health issue of individual countries around the globe. RTAs have ranked the 10th leading of deaths for people of all age groups (WHO, 2020). RTAs are also the main causes of human and economic loss in developed and developing countries. Moreover, RTAs usually cause the physical disability for drivers, passengers, and pedestrians especially in developing countries (Zimmerman et al., 2012). Due to the recent economic and technological developments, the number of vehicles that public used have increased rapidly. Along with this development, the number of accidents and fatalities has risen significantly (Karacasu et al., 2013). The traffic injuries and deaths have a tremendous impact on a country's socio-economic development. Fatality and injury from road traffic accidents are the major current issues in developing countries. Myanmar is one of the developing countries having a high level of traffic accidents (World Life Expectancy, 2020).

According to WHO (2015), an increasing number of road accidents in recent years in Myanmar. Moreover, Myanmar has the second-highest road fatality rate in South-East Asia Regions, increasing from a previous ranking of 6th out of 11 countries (WHO, 2019). In Myanmar, 20.94% per 100,000 of the population die in road traffic accidents, ranked 71st in the world (World Life Expectancy, 2020). The number of traffic accidents, deaths, and injuries has risen in Myanmar since 2015. Among young adults ages, 15 and 45 have the highest number of deaths by road accidents in Myanmar.

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Furthermore, the 2014 Myanmar Population and Housing Census estimated that the population of Myanmar is 51,486,253 persons, and there are over 4,407,741 registered vehicles in the country. According to the Ministry of Transportation, more than 6 million vehicles and close to 84 percent of new vehicles registered were motorcycles in 2016. The number of officially recorded vehicles on Myanmar roads more than doubled from 2 to 4.6 million between 2008 and 2014. If the vehicles fleet continues to expand at this rate the estimated number of road fatalities could double by 2020 and triple by 2025 (ADB, 2016). According to WHO 2018, road accidents are usually attributed to human errors such as reckless driving, over-speeding, using defective vehicles, excessive drinking of alcohol, and the consumption of narcotics, and so on. Moreover, rapid urbanization, poor safety standards, lack of enforcement, people driving distracted, and a failure to wear seatbelts or helmets are considered as other reasons for high traffic fatalities.

According to ADB (2016), the traffic accident rates in Myanmar are significantly higher, and in the Yangon Region, transportation has dominated by cars. In Myanmar, Yangon has the second highest traffic accident rate in the country. The number of deaths from traffic accidents in the Yangon Region has increased. Thirty-five people were fatalities and 197 injuries in January, and this rose to 51 people fatalities and 275 injuries in May 2017 (Uhrig, 2017). Most of the Myanmar drivers fail to wear seat belts and also cyclists fail to wear helmets while driving. Most accidents are happened because of human error and road users who do not abide by the rules.

Road safety plans and measures are needed to put in place to reduce road traffic accidents, and it also needs to explore the impact of such road safety measures. In addition, it is necessary to know t road traffic accidents as these can contribute to the policy maker in conducting the effective road safety measures. Accordingly, this study intends to analyze the road traffic accidents and impact of road safety measures in Yangon by ARIMA intervention time series model. Therefore, the aim of this study is to introduce intervention time series analysis the effects of enforcement laws, regulation and pandemic interventions for the prevention of road traffic accident in Yangon.

The data used in the analysis the traffic accidents focuses only on the townships located within the boundaries of Yangon Municipality. The accident data covered a period of time before and after the law came into effect. The traffic accidents data was obtained from No. (2) Office of Traffic Police, Yangon. The data used for the study is from Janusry 2013 to December 2021 with intervention after the Motor Vehicle Law (September, 2015), Motor Vehicle Import Law (November, 2016), Covid-19 First Wave (March, 2020), Vehicle Safety and Motor Vehicle Management Law (April, 2020), Political Changes (February, 2021) and Covid-19 Third Wave (May, 2021).

2. Literature Reviews

There are many studies about intervention analysis of traffic accidents. Some of these which are related to this study are as follow.

Oreko et al. (2017) stated that modeling the impact of intervention measures on total accidents cases in Nigeria. Road traffic accident data from 1960 to 2014 were analyzed in this study. Box-Jenkins intervention methodology was used. The result of the modeling and analysis show that the intervention measure of Nigerian Government had an abrupt temporary impact on RTA in Nigeria. Moreover, the total number of accident cases in Nigeria, the period before the intervention (1961 to 1987) was 657,280 and the period after the intervention (1988 to 2014) was 430,721. Thirty-five percent reduction in total accident cases after the intervention.

Haque and Haque (2018) studied that to evaluate the effects of the Road Safety System Approach on serious road casualties: fatalities and serious injuries in Brunei. Auto Regressive Integrated Moving Average (ARIMA) and Intervention Time Series Analysis methods were used. It is found that a significant reduction in serious road casualties of 30% was achieved for the first 12-months after the introduction of the Road Safety System Approach through the reformed road safety initiatives in Brunei.

Pfefer et al. (2021) studied safety impact of the 65-mph speed limit. In this study, ARIMA time series intervention analyses using monthly speed data. ARIMA analyses were used to examine the changes in accidents frequency, accident rates, and proportion of car-truck accidents to all accidents. The point of intervention is May 1987. The ARIMA analyses are based on time series consisting of 52 pre-intervention months and 15 post-intervention months. The researchers found that an increase of 4.0 mph in the 85th percentile speed for cars was detected at the 95% confidence level. No change was found in the 85th percentile speed for truck. An increase of 2.8 mph in the car-truck speed differential was found at the 80% confidence Level.

Schaffer et al. (2021) analyzed the interrupted time series analysis using autoregressive integrated moving average models. The researchers examine the impact of this policy intervention on dispensing of quetiapine using dispensing claims data. The researcher found that ARIMA modeling is a useful tool to evaluate the impact of large-scale interventions when other approaches are not suitable, as it can account for underlying trends, autocorrelation and seasonality and allows for flexible modeling of different types of impacts.

3. Methodology

3.1 Autoregressive Integrated Moving Average (ARIMA) Model

In an ARIMA analysis, the time series Y_t is assumed to follow an Autoregressive Integrated Moving Average Model. The basic notation for describing a non-seasonal ARIMA model is (p,d,q):

$$\text{ARIMA (p,d,q)} \quad (1)$$

where; p = the order of the AR part of the model;

d = the degree of non-seasonal differencing; and

q = the order of the MA part of the model

An ARMA (p , q) model is a combination of AR (p) and MA (q) models and is suitable for univariate time series modelling. The ARMA (p , q) model has the following :

$$y_t = \phi_1 y_{t-1} + \phi_2 y_{t-2} + \dots + \phi_p y_{t-p} + a_t - \theta_1 a_{t-1} - \theta_2 a_{t-2} - \dots - \theta_q a_{t-q} \quad (2)$$

The time series data must be stationary in order to apply an ARMA (p , q) model. When q=0, the model changes into a pure autoregressive model of order p. Likewise, when p= 0, the model changes into a pure moving average model of order q. The forecast of the ARMA (p,q)model are dependent upon the current and past value of the response Y as well as the current and past value of the errors.

The Autocorrelation Function (ACF) and Partial Autocorrelation Function (PACF) properties for autoregressive average processes are shown in Table (1).

Table (1)

Properties of AR, MA, and ARMA Processes

Model	Autocorrelation (ACF)	Partial Autocorrelation (PACF)
AR (p)	Tails off	Cut off after order p of the process
MA (q)	Cut off after order q of the process	Tails off
ARMA(p, q)	Tails off	Tails off

Source: Wei (2006)

The orders p and q in an ARMA model are determined from the patterns of the sample ACF and PACF.

3.2 Evaluating Interventions using ARIMA

Time series are frequently affected by certain external events such as holidays, strikes, sales promotions, policy changes, earthquake, price changes, floods, pandemic, and other irregular events. These external events are called interventions. Autoregressive Integrated Moving Average (ARIMA) intervention analysis was used in this study. The ARIMA model process involves using the Box and Jenkins methodology. ARIMA model developed by Box and Jenkins (1970) and intervention model is developed by Box and Taio (1975) to estimate an ARIMA model for the pre-intervention data and then performing an intervention time series analysis to assess the magnitude and the significance of the effect of any intervention.

The aim of interrupted time series (ITS) analysis when used to evaluate interventions is to estimate the impact of the intervention’s implementation on a given outcome, or in other words the “intervention effect”. While there is a wide variety of impact that may be observed, here we will focus on three main types: step change, pulse

and ramp. If we use T_0 to represent the starting time of the intervention, these are summarized as:

- (i) Step change (also called a level shift): A sudden, sustained change where the time series is shifted either up or down by a given value immediately following the intervention. The step change variable takes the value of 0 prior to the start of the intervention, and 1 afterwards.

$$S_t^T = \begin{cases} 0, & t < T \\ 1, & t \geq T \end{cases} \quad (3)$$

- (ii) Pulse: A sudden, temporary change that is observed for one or more time points immediately after the intervention and then returns to baseline level. The pulse variable takes the value of 1 on the date of the intervention, and 0 otherwise.

$$P_t^T = \begin{cases} 0, & T \neq t \\ 1, & T = t \end{cases} \quad (4)$$

- (iii) Ramp: A change in slope that occurs immediately after the intervention. The ramp variable takes the value dummy regressor whose values before and during the time of the intervention are 0 and whose subsequent values increase linearly thereafter. The duration of a ramp intervention is the number of periods from time to the end of the time series.

(iv)
$$R_t = \begin{cases} 0, & t < T \\ t - T + 1, & t \geq T \end{cases} \quad (5)$$

In general, an intervention model consists of two components: an intervention function and an ARIMA noise model.

$$\text{Intervention model} = f(I_t) + N_t \quad (6)$$

where, the intervention function is designated $f(I_t)$ and;

$$N_t = \text{ARIMA}(p,d,q)$$

$$I_t = \begin{cases} 1, & \text{intervention occurs} \\ 0, & \text{otherwise} \end{cases} \quad (7)$$

The autoregressive integrated moving average (ARIMA) intervention analysis was used in this study to examine the impact of interventions on the road traffic accidents in Yangon.

4. Results and Discussions

4.1 Intervention Analysis of Traffic Accidents

The ARIMA model was applied on pre-intervention data of January 2013 to April 2017. The plot in Figure (1) shows the pre-intervention of road traffic accident in Yangon.

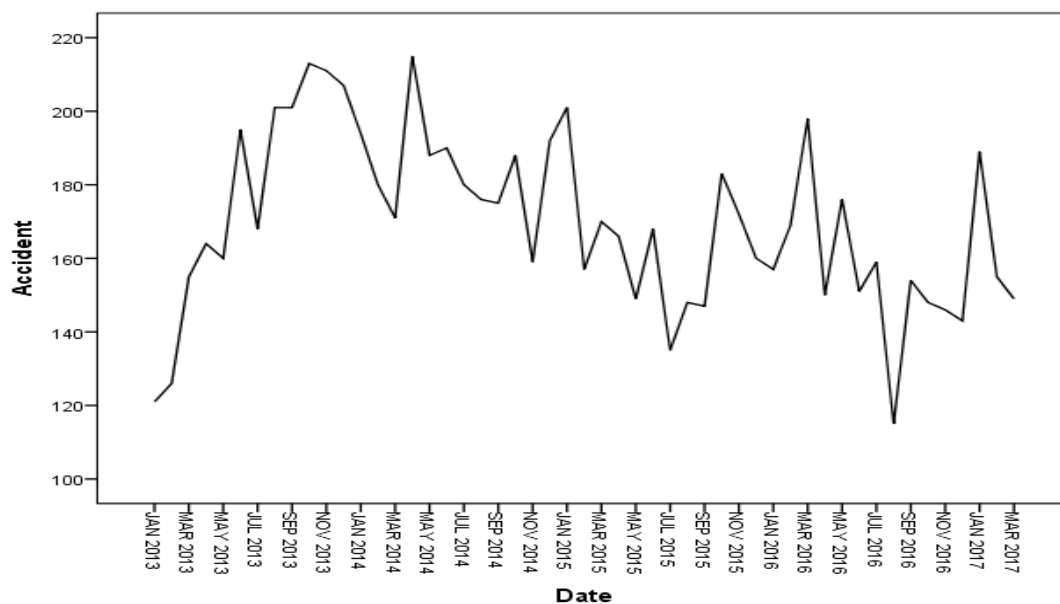
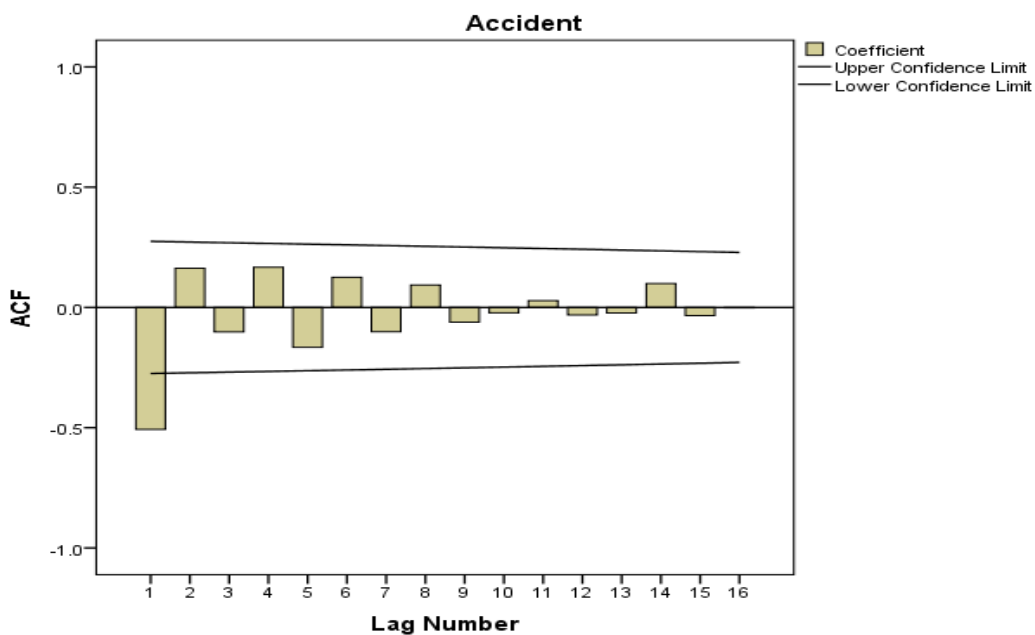


Figure (1) : Pre-intervention of Traffic Accidents in Yangon

Regarding to the Figure (1), the pre-intervention of traffic accidents in Yangon was displayed a non-stationary behaviour and first differencing is needed to be stationary. This shows that the series is non-stationary and first differencing is needed to be stationary. The first difference of pre-intervention series of traffic accidents is obtained and the examination of ACF and PACF of the first difference of pre-intervention series are shown Figure (2). This Figure indicates that the ACF and PACF cut off after lag 1. Therefore, the pre-intervention of traffic accidents in Yangon series is fitted by an ARIMA (1, 1, 1) model.



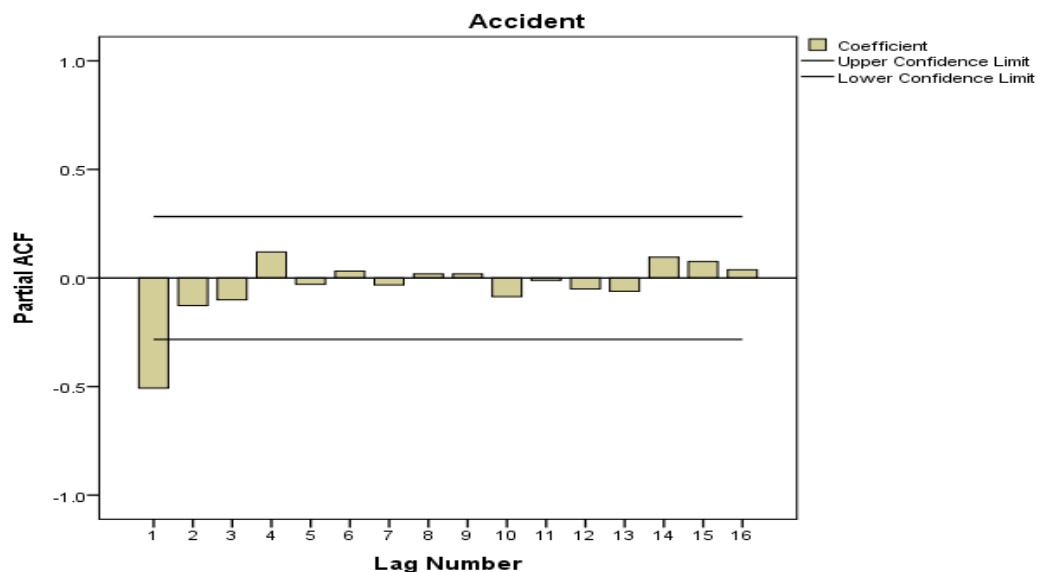


Figure (2): ACF and PACF of First Difference Series for Pre-intervention Series for Traffic Accidents in Yangon

4.2 Intervention Analysis and Results

The intervention analysis was used to assess the impact of traffic accidents in Yangon. In Figure (3), the impact of the intervention in the Motor Vehicles Law was promulgated in September 2015, and its effect has been found to have reduced the number of accidents since April 2017. The Permission to Import Vehicles Law was promulgated in November 2016, but it will be effective from January 2017. The law took effect in May 2018. In Myanmar, the Vehicle Safety and Motor Vehicles Management Law was enacted in May 2020 and its effect was found that January 2021.

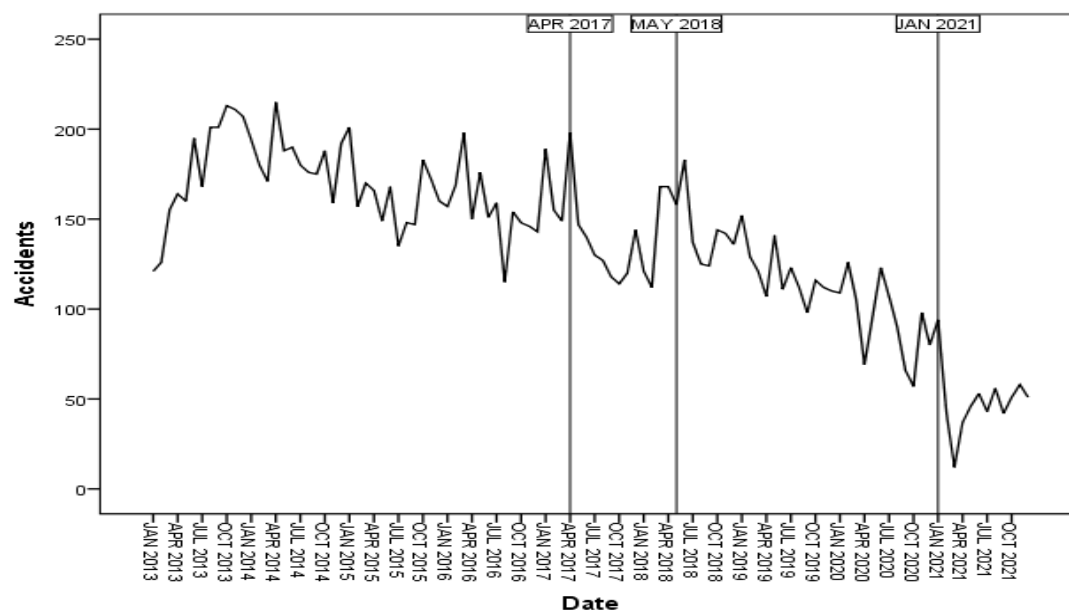


Figure (3): Intervention Series of Traffic Accidents in Yangon

The interventional model has the following form:

$$Z_t = \omega_1 S_t^{(52)} + \omega_2 P_t^{(65)} + \omega_3 P_t^{(97)} + \frac{(1-\theta_1 B)}{(1-\phi_1 B)} a_t \tag{8}$$

$$= -2.657 S_t^{(52)} + 19.697 P_t^{(65)} - 6.045 P_t^{(97)} + \frac{1-0.923}{1-0.392B} a_t$$

The estimated values of the parameters are displayed in Table (2).

Table (2)

Estimated Parameters and Model Statistics for ARIMA (1,1,1) Model

Parameters	Estimate	Std. Error	t	Sig.
ω_1	-2.657	0.665	-3.999	.000
ω_2	19.697	9.998	1.970	.052
ω_3	-6.045	15.615	-0.387	.699
ϕ_1	0.392	0.118	3.326	.001
θ_1	0.923	0.062	14.841	.000

The impact of the intervention in traffic law could be modelled as decaying change in level. The estimate of the pre-intervention effect in terms of Motor Vehicle Law is 2.657 less than the pre-intervention level and it was decreased in the traffic accidents at statistically significant. In the Permission to Import Vehicles Law is 19.697 more than the pre-intervention level and it was increased in the traffic accidents at statistically significant.. The effect of the Vehicle Safety and Motor Vehicle Management Law (2020) is less than 6.045 traffic accident and it was decreased.in the traffic accidents at not statistically significant.

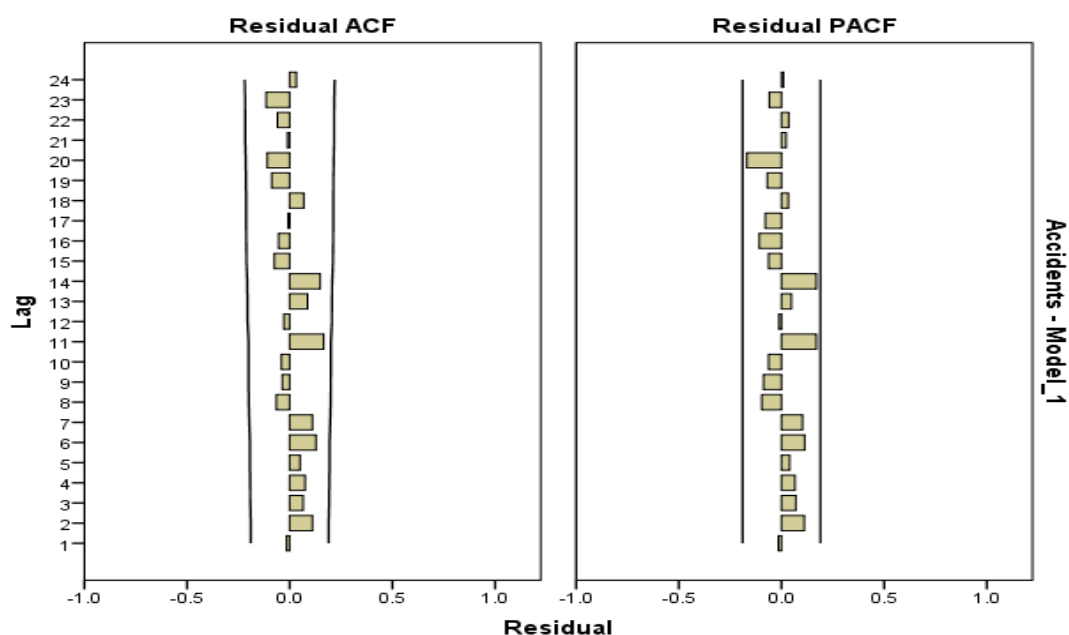


Figure (4): ACF and PACF Function of Residuals for the intervention Model

The residual values of the ACF and PACF for the intervention model of traffic accidents data series fall within the two standard errors limits (Figure 4). Thus, the residual series allow white noise process and intervention model is adequate to forecast the future value of the series. These diagnostics indicate that the model has produced only uncorrelated white noise, which is characteristic of a properly specified model. The fitted model is adequate the data series. Therefore, the fitted intervention model in Equation (8) is satisfactory.

4.3 Conclusion

The outcomes of the analysis varied among traffic accidents and different severity levels. The variation between the outcomes was examined in terms of the statistical significance of the intervention term as well as its magnitude and direction. Data sets where the policy was associated with reduction in accidents. In the analysis of the effect of the motor vehicle law (September 2015), it was found that there was statistically significant decreased in the mean number of accidents in the period after the interventions. The mean number of traffic accidents for the post intervention period increased by 20 accidents when compared to the pre intervention time period.

In the mean number of traffic accidents was observed in Permission to Import Vehicles Law (November 2016). The result shows that this increase was statistically significant. Similarly, the Motor Vehicle Management Law, there was not statistically significant decrease in the mean number of accidents in the period after the interventions. The mean number of traffic accidents for the post intervention period reduced by 6 accidents when compared to the pre intervention time period. In general, the results show that the legislative changes related to effective in reducing traffic accidents.

The traffic laws changes related to effective in reducing traffic accidents. The legislative changes were associated with a statistically significant drop in the mean number of Motor Vehicle Law. Permission to Import Vehicles Law was statistically significant but the number of traffic accident increase. Motor Vehicle Management Law was not statistically significant decrease the number of traffic accidents. This finding indicates the presence of some general deterrence effect, the law influenced to reduce the traffic accidents in Yangon

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APPENDIX

ACF and PACF of First Difference Series for Pre-Intervention Series

Model		1	2	3	4	5	6	7	8
Accidents-Model_1	ACF	-0.507	0.163	-0.102	0.167	-0.166	0.125	-0.101	0.1
	SE	0.137	0.136	0.134	0.133	0.132	0.130	0.129	0.1271
Model		9	10	11	12	13	14	15	16
Accidents-Model_1	ACF	-0.061	-0.022	0.028	-0.031	-0.023	0.100	-0.034	-0.002
	SE	0.126	0.124	0.122	0.121	0.119	0.118	0.116	0.114

Model		1	2	3	4	5	6	7	8
Accidents-Model_1	PACF	-0.507	-0.127	-0.101	0.120	-0.030	0.032	-0.032	0.019
	SE	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141
Model		9	10	11	12	13	14	15	16
Accidents-Model_1	PACF	0.018	-0.086	-0.011	-0.050	-0.061	0.096	0.076	-0.194
	SE	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.097

ACF and PACF of Residuals Series for the Intervention Model

Model		1	2	3	4	5	6	7	8	9	10	11	12
Accidents-Model_1	ACF	-.016	.111	.066	.075	.050	.128	.110	-.065	-.036	-.040	.166	-.028
	SE	.097	.097	.098	.098	.099	.099	.101	.102	.102	.102	.102	.105
Model		13	14	15	16	17	18	19	20	21	22	23	24
Accidents-Model_1	ACF	.087	.148	-.075	-.054	-.007	.069	-.087	-.110	-.011	-.060	-.115	.031
	SE	.105	.106	.108	.108	.108	.108	.109	.109	.110	.110	.111	.112

Model		1	2	3	4	5	6	7	8	9	10	11	12
Accidents-Model_1	PACF	-.016	.110	.070	.066	.040	.113	.102	-.096	-.087	-.062	.170	-.012
	SE	.097	.097	.097	.097	.097	.097	.097	.097	.097	.097	.097	.097
Model		13	14	15	16	17	18	19	20	21	22	23	24
Accidents-Model_1	PACF	.048	.171	-.063	-.108	-.079	.033	-.069	-.168	.023	.036	-.059	.010
	SE	.097	.097	.097	.097	.097	.097	.097	.097	.097	.097	.097	.097

Future Trends of Urbanization in Myanmar

Nandar Soe Lin* and Nilar Aung**

Abstract

The aim of the study is to find out the changing levels and trends of urbanization in Myanmar. The level of urbanization is examined by using two different methods: percent of urban population and ratio of urban-rural population. The tempo of urbanization is calculated by using the annual change in percentage points. Using the exponential and ratio methods, the district level population of each state and region for 2034 is estimated. According to the results of level of urbanization, the highest percentage of urbanization and the highest ratio of urban-rural population can be found in Yangon Region between the year 1973 and 2014. In 1973-1983, Kayin State is the highest tempo of urbanization and Ayeyawady Region is the lowest tempo of urbanization among all states and regions. Regarding the results of tempo of urbanization, the lowest and highest tempo of urbanization can be found in Kayah and Kachin State during the period 1983-2014. In the result of future population, the expected total population will be over 55 million in 2024 and over 60 million in 2034.

Keywords: Urbanization, Levels and Trends, Tempo, Ratio Method

I. Introduction

Urbanization is the process of a larger proportion of human activities such as economic, social, culture which taking place in urbanized areas. It is characterized by rising in the urban proportion. It means that the changes in economic, social and cultural aspects of the society. Demographic aspects of urbanization deal with the two interaction factors that is the urban-rural differential in the natural increase of population and the migration exchange between the urban and rural sectors. From economic perspective, urbanization depends on the change from agricultural to non-agricultural occupations. As cities have been the centers of diverse economic opportunities which are attracting people from rural areas. This attraction pulls a significant section of the rural population to the urban population. The push factors that people move from rural to urban areas, are rural poverty, backwardness of agricultural economy and the destruction of cottage and small industries. These pull and push factors of migration play an important role in the process of urbanization. The socio-cultural aspects of urbanization highlight the emerging heterogeneity in urban areas.

The world population has reached 6.1 billion in mid-2000. Currently, the world population is growing by 77 million people per year. By 2025, world population is expected to be between 7.9 billion and 10.9 billion, with the medium variant 9.3 billion (United Nations, 2001). World's urban population grew more than four-fold from an estimated 0.8 billion to an estimated 4.2 billion between 1950 and 2018. Despite the World's urban population is expected to continue urbanization, the pace of urbanization is expected to slow in the future with regard to the absolute size of the urban population

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and the proportion urban likely to grow less rapidly. The patterns of urbanization are difference between the more developed regions and the less developed regions (United Nations, 2018). In most parts of the developing world, urbanization has been characterized by urban population growth and urban population distribution. During the last two decades, the pace of urbanization has been accelerated in Asian countries and closely associated with urban problem and regional disparities. In South-East Asia, Myanmar has the lowest urbanization rate compared with neighboring countries. According to the Myanmar Housing and Population Census 2014, Myanmar's urban population is roughly 30% of the total population with only 13% living in big cities. This percentage will become sharply to increase 25% by the year 2030 in accordance with around ten million people migrating to large cities. Thus, this study focuses on the changes of the process of urbanization in Myanmar that based on the Census years of 1973, 1983 and 2014.

II. Literature Review

Many previous studies pointed out that the study of urbanization plays a main role to improve the set of people living in urban areas and develop the whole of urban areas.

Datta (2006) studied that the process of urbanization, level, tempo of urbanization and urban morphology in India are based on Indian Census data during 1901-2001. Degree and tempo of urbanization are used to study the process of urbanization in India. As the results, only 28% of population was living in urban areas as per 2001 census. The share of class I towns (population size of 100,000 or more) has significantly increased from 26 per cent in 1901 to 69% per cent in 2001. The percentage share of class IV, V and VI towns (less than 20,000 people) has drastically decreased from 47 to 10 only. This is the fact that the towns in lower categories have grown in size and entered the next higher category. India's urbanization is often termed as over-urbanization, pseudo-urbanization.

Khan (2015) observed that the trend, level and tempo of urbanization and urban population growth rate by size-classes between the inter-censal period in largest population state Uttar Pradesh and Uttarakhand by using two different methods: (1)Degree and (2) tempo of urbanization. From the results, the highest tempo of urbanization is Siddharthnagar (5), Gautam Buddha Nagar (4.58), Kanpur Dehat (3.38) and Ambedkar Nagar (2.71). Bahraich (-2.06), Sonbhadra (-1.09), Gonda (-0.71) and Rae Bareli (-0.43) have the lowest tempo of urbanization districts of Uttar Pradesh whereas 18 districts have negative tempo of urbanization in Uttar Pradesh. And the tempo of urbanization is highest in Rudraprayag (12.29) and the lowest tempo of urbanization is Uttarakhand (-0.54) and Champawat (-0.18) that has experience negative tempo of urbanization in all districts. Mohammad Kashif Khan also found that two district in Uttarakhand and 18 districts in Uttar Pradesh have experience negative level of urbanization, similar results found for the tempo of urbanization. But rank differs in magnitude in tempo of urbanization.

Paul & Sharma (2016) examined that the spatial pattern, process and trend of urbanization in the state of Sikkim based on the conceptualization theory & secondary data for the last seven decades by using the degree and tempo of urbanization. From the results, the number of urban towns has increased from 1 in 1981 to 8 in 2001 and the

number of the population residing in urban areas has increased from 2% in 1951 to 11 in 2011. There is also an urgent need to strengthen the carrying capacity of smaller town to brace up to the challenges ahead by checking in the migration of population and through appropriate urban planning, monitoring and government intervention policies for effect in future on natural beauties as well as environmental resources.

III. Objectives of the Study

The aims of the study are:

- i. to identify the level and tempo of urbanization
- ii. to project the district level of population in states and regions of Myanmar.

IV. Data and Methods

This study is applied based on secondary data of Myanmar Population and Housing Census covering the year 1973, 1983 and 2014. It could be seen that Nay Pyi Taw which include part of the Mandalay region was not included in the Census of 1973 and 1983. Thus, this study was calculated by adding Nay Pyi Taw in Mandalay region. This study tried to analyze that the urbanization was measured by the level of urbanization and tempo of urbanization. In addition, exponential method was used to find the projection of population at national, sub-national level and ratio method was applied to find the district level of population in Myanmar.

4.1 Measurements of Urbanization

There are two aspects by which urbanization of a country or a sub-national area is measured: level of urbanization and tempo of urbanization.

(i) Level of Urbanization

The level of urbanization usually refers to the absolute or relative number of people who live in urban places. Two kinds of indices have been developed for measuring the level of urbanization: first, those based on proportion of people living in places defined as urban, and second, those relating to the absolute size of the cities of a country (Goldstein & David, 1975).

Percent of Population in Urban Places

The percent of population in urban places has been the most commonly used as an index for measuring the degree of urbanization. The percent of population in urban places is calculated as follows:

$$UP = \frac{U}{P} \times 100$$

where,

UP = the percent of population in urban areas

U = the urban population of a country

P = total population of a country

This index is popular because it is very easy to calculate and interpret, and also because of the relative availability of the needed data. It depicts that the higher the

percentage of urban population to total population, the higher will be the level of urbanization (Goldstein & David, 1975).

Ratio of Urban-Rural Population

The ratio between the numbers of person in a country living the urban areas to rural population is called the urban-rural population ratio. It can be expressed as follows:

$$UR = \frac{U}{R} \times 100$$

where,

UR = the Urban-rural ratio, and

U = the urban population

R = the rural population

This index has a lower limit of ‘zero’ when the whole population is rural; it is ‘one’ when 50 percent of the population is rural, thus indicating the existence of one urbanite for each rural person. This index is useful for estimating changes in urbanization process. The disadvantages of this index is that it is also affected by changes and differences in the definition of urban as seen in the case of percent urban (Goldstein & David, 1975).

(ii) Tempo of Urbanization

Annual Change of Percentage Points

If the degree of urbanization is measured by the percent of population living in urban places, the urban-rural ratio by the city size of the median inhabitant, or by the mean city size, the speed of urbanization would be the change registered in these indices over a period of time. When the level of urbanization is measured in terms of percent urban, the tempo can be measured either as the absolute change in percentage points or as the rate of change in the percent of population urban between two dates. The concept of tempo of urbanization refers to the change in the level of urbanization during a period of time. In this study, the tempo of urbanization can be measured by annual change in percentage points (Goldstein & David, 1975). The annual change in percentage points may be expressed as

$$TA = \frac{1}{n} (PU^{t+n} - PU^t)$$

where,

TA = the tempo of urbanization

PU = the percent of population urban at the year’s t and t + n

n = the number of years

4.2 Methods of Population Projection

This study used exponential method to project the future national and sub-national level of population, and ratio method to project the district level of population in Myanmar.

(i) Exponential Method

The population growth rate is a continuous process. For a continuously increasing population, the following describe an exponential growth:

$$P_t = P_0 e^{rt}$$

where,

P_0 = Initial population

P_t = Projected population after t years

r = growth rate

It is a fact that the growth rates change over time and are not constant. This method does not allow a leveling off population growth or declining population size. In order to use the exponential model for the population projections, it is essential to obtain and use annual population growth rates (Ayhan, 2018).

(ii) The Ratio Method

The ratio method projects population growth for a sub-area using population projection for a larger or parent population. A regional projection can be used to project the population size of districts, and a projection for the country can be used to project the population size of a region (Measure Evaluation, 2020).

$$\text{Subarea Population}_{t+n} = \frac{\text{Subarea Population}_t}{\text{Parent Population}_t} \times \text{Parent Population Projection}_{t+n}$$

where,

Subarea Population_{t+n} = future population size

Subarea Population_t = population for the last census

Parent Population Projection_{t+n} = projection for the larger or parent population

Parent Population_t = population of the last census

V. Findings

5.1 Level of Urbanization in Myanmar

Percent of Population in Urban Areas

The degree or level of urbanization refers to the relative number of people live in urban areas. Percent of urban population is one of the measures of the level of urbanization. This index is used to measure the level of urbanization. Appendix Table (1) shows the level of urbanization measured as the percent of population in urban areas for each state and region in Myanmar for 1973, 1983 and 2014.

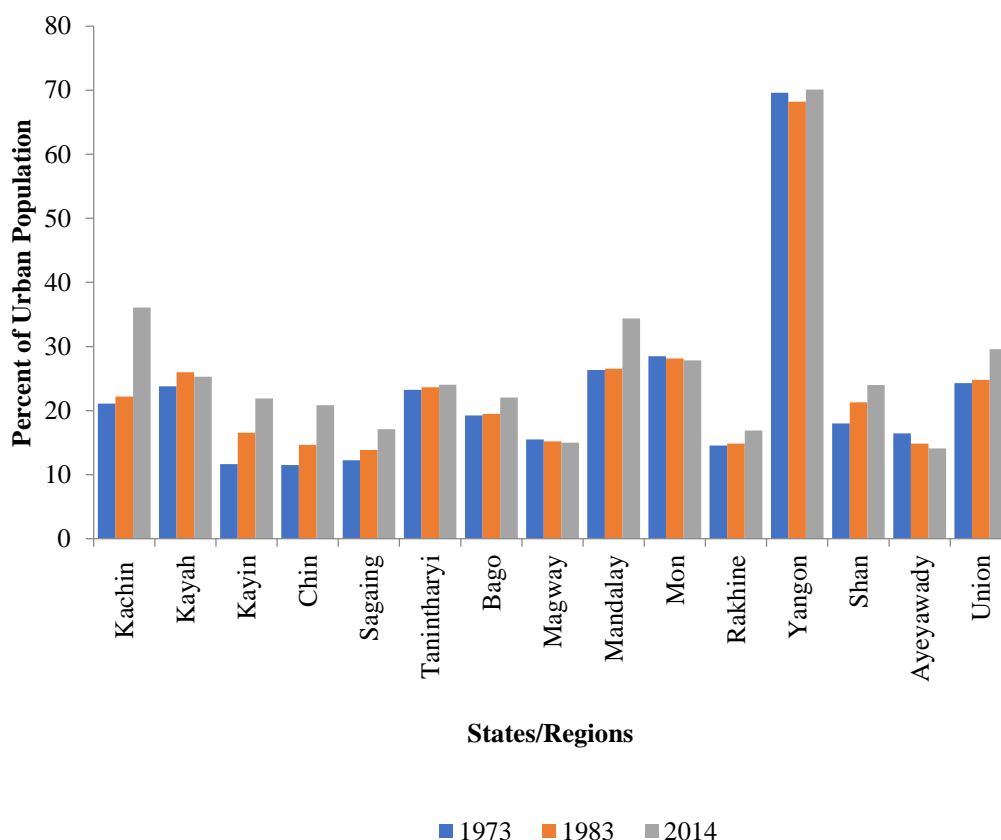


Figure 1: The percent of population in urban areas for each state and region in Myanmar over the year of 1973, 1983 and 2014

According to Appendix Table (1) and Figure (1), the percentage of urban population in Myanmar is increased from 24 percent in 1973 to 30 percent in 2014. The percentage of urban population in Yangon Region is the highest in all states and regions between the year of 1973 and 2014. It is 70 percent of total population. Among states and region, the percentages of urban population in Chin State, Sagaing and Ayeyawady Regions are the lowest in 1973, 1983 and 2014. The percentage of urban population at the union level is nearly the same from 1973 to 1983. From 1983 to 2014, the percentage of urban population at the union level was increased.

Ratio of Urban-Rural Population

Urban-Rural ratio is the simple index measuring number of urbanites for each rural person in an area unit. When the whole population is rural, the urban-rural ratio has a lower limit of zero. When there is no rural population, the upper limit would be infinite. This index is used to be measured the level of urbanization. Appendix Table (2) show the level of urbanization measured as the ratio of urban-rural population for each state and region in Myanmar for 1973, 1983 and 2014.

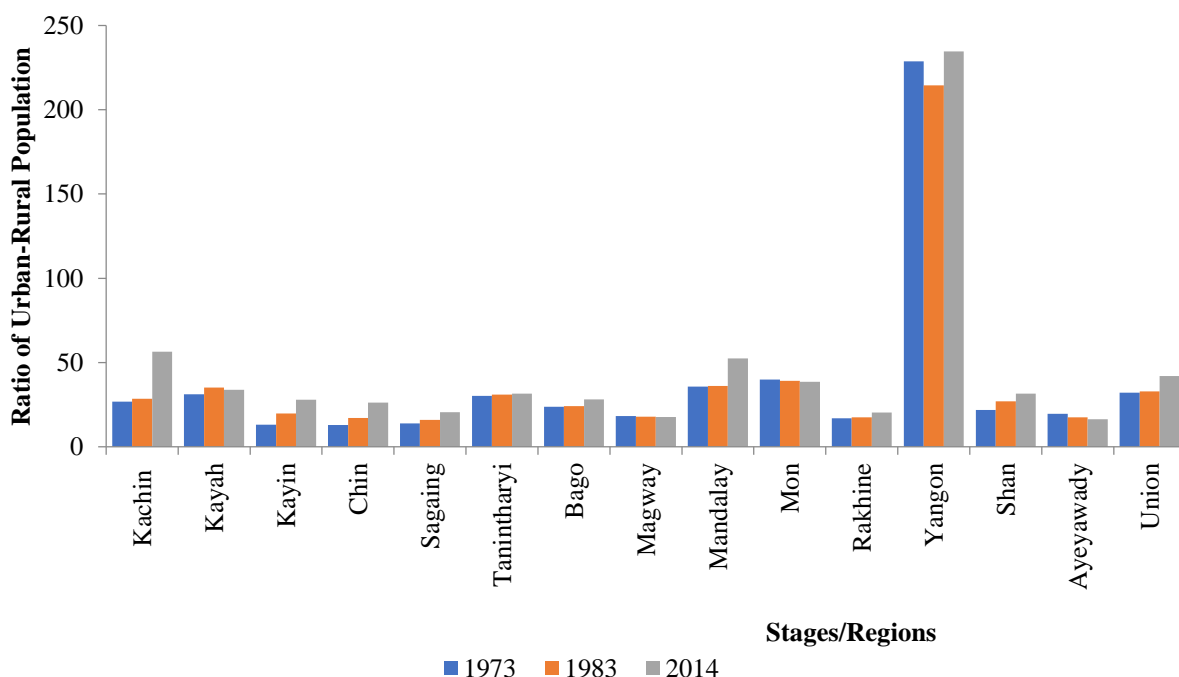


Figure 2: The urban-rural ratios for each state and region in Myanmar over the year of 1973, 1983 and 2014

Based on the Appendix Table (2) and Figure (2), the ratio of urban-rural population in Myanmar is increased from 32 percent in 1973 to 42 percent in 2014. During the period of 1973-2014, the highest ratio of urban-rural population is in Yangon Region among all states and regions. But, the ratio of urban-rural population in Chin State, Sagaing and Ayeyawady Regions are the lowest in 1973, 1983 and 2014. The ratio of urban-rural population at the union level was steadily increased from the period 1973 to 2014. Generally, the ratios of urban-rural population for all states and regions are more and more increased between the studying periods.

5.2 Tempo of Urbanization in Myanmar

The tempo of urbanization refers to the speed of urbanization which shows the rate of change brought about by urbanization. It can be observed that based on annual rate of change in urban population and annual change in percent point as shown in Appendix Table (4).

According to the Appendix Table (4), the tempo of Urbanization is the highest in Kayin State and the urban annual growth rate of this state is 3.61 percent between the year 1973 and 1983 in other regions and states. The lowest tempo of urbanization is in Ayeyawady Region and the urban annual growth rate of this region is 0.84 percent between the year of 1973 and 1983 in other regions and states. Among the regions and states, the highest tempo of urbanization is Kachin State and the urban annual growth rate of Kachin State is 7.29 percent between the year 1973 and 1983 among other regions and states. The lowest tempo of urbanization is in Kayah State and the urban annual growth rate of Kayah State is 2.40 percent between the year 1983 and 2014.

According to the observations, all of the states and regions are indicated that positive sign except Magway, Yangon, Ayeyawady Regions and Mon State during the period 1973-83. But during the period 1983-2014, Kayah and Mon State and Magway and Ayeyawady Regions are negative signs among states and regions. According to the 1983-2014 data, the urban and rural populations in Kayah State are increasing. But population is more increased in rural than in urban. Because (i) the decreasing in-migration rate and (ii) birth of women in rural is greater than that of women in urban. Thus, Kayah State occurred negative signs among states and regions. And also, Mon State, Magway and Ayeyawady Regions occurred negative signs because of the internal and international migration. Generally, the absolute change of percentage points for each state and region in Myanmar are either positive signs or negative signs due to the in-migrants and out-migrants.

5.3 Projection of Population in Myanmar

The projection of future population is needed to develop the future plans for housing, schooling, manpower and so on. Not only the future national but also the future sub-national population can be obtained by using the exponential growth method and the ratio method is used for 2034 estimated population for each district of states and regions in Myanmar, based on the 2014 Population and Housing Census. The results are shown in Appendix Tables (5) and (6).

According to these Tables, the total population will be expected to increase from over 50 million to over 60 million during the period 2014 to 2034. In these periods, the urban population will be expected to increase 5 million. Yangon, Mandalay, Nay Pyi Taw Regions and Shan State are significantly increased population in all states and regions. Other states and regions are slightly increased population except Mon State and Magway Region. Population will be decreased in Mon State and Magway Region. Generally, the urban population will be expected to increase in all states and regions and also in all districts except Mon State and Magway Region (See Appendix Table (6)). It can be due to the fact that the death rate may be increased although the birth rate decreased. The next fact can be population in these states and regions are being the most movement from one area to another area and abroad. Some people who migrate abroad with their family may settle in their migratory areas. Thus, the population growth rate is declining and also it will occur that the population is continuously declining in the projection of the future population.

VI. Conclusion and Suggestions

Levels of Urbanization in Myanmar are derived from the data of Myanmar Population and Housing Census 1973, 1983 and 2014. The level of urbanization is studied by (i) the percentage of population in urban areas and (ii) the ratio of urban-rural population. Based on the results, the urban population in Myanmar increased by 6 percent from 24 percent in 1973 to 30 percent in 2014. the level of urbanization was steadily increased among states and regions during the period of 1973 to 2014. But, it can be seen that the levels of urbanization in Magway Region, Mon State and Ayeyawady Region were gradually decreased. Among all states and regions, the level of urbanization is the highest in Yangon Region. It is due to the most people migrant to Yangon Region instead of the other states and regions. Because people in Yangon

Region can be obtained the higher employment opportunities, higher living standard, better health facilities, better educational opportunities, and so on.

Moreover, the tempo of urbanization is calculated by using the annual change of percentage points. From the results, these points are positive sign or negative sign in all stages and regions between the years 1973 and 2014. Generally, this can be due to the population migration such as in-migrants and out-migrants. Increasing in-migrants may be due to the better employment opportunities, better economic possibilities, facilities for education, housing, medical treatment, higher standard of living in those areas. Increasing out-migrants may be due to the inadequate facilities for earning the livelihood, lower wages, at the existing places of living, lower standard of living, lack of personal development and employment, etc.

Furthermore, the future national and sub-national populations are calculating from using exponential method. And then, the ratio method is used to estimate population in 2024 for each district of states and regions in Myanmar. As a result, the total population will be expected to increase from over 50 million to over 60 million during the period 2014 to 2034. The urban population will be expected from over 14 million in 2014 to over 19 million in 2034. The urban population will be expected to increase in all states and regions and also in all districts except Mon State and Magway Region. In these state and region, the level of urbanization will also decrease as the urban population gradually decreases. This is because the more people in that state and region migrate abroad than within the region. And it may be due to the lacking of personal development and employment, lower living standard and lower wages in these stage and region.

Finally, it is suggested that government will need to make better urban policies because the legal and regulatory, administrative, and institutional instruments are lacking in Myanmar to manage the urbanization challenges. Furthermore, the estimation of population size of the country is the important for the government organization and agencies because it can be used to apply for the planning of socio-economic and welfare activities of a nation. It is a vital role of national planners and policy makers. Therefore, the national planners and policy makers should make a good urban policy from these results. Especially, the urban population in Mon State and Magway Region is steadily decreasing and there is less urban development. Thus, they should establish more urban policies and create employment opportunities for those state and region. This study also wishes to be one of several starting points for future research in national government.

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Appendix Table (1)
Regional Distribution of Urban Population (1973, 1983 and 2014)

Stages/Regions	Percent of Urban population (1973)	Percent of Urban population (1983)	Percent of Urban population (2014)
Kachin	21.11	22.17	36.06
Kayah	23.80	26.01	25.27
Kayin	11.66	16.56	21.88
Chin	11.50	14.67	20.85
Sagaing	12.26	13.85	17.11
Tanintharyi	23.26	23.65	24.03
Bago	19.24	19.48	22.03
Magway	15.51	15.22	15.01
Mandalay	26.32	26.53	34.38
Mon	28.50	28.16	27.85
Rakhine	14.53	14.85	16.88
Yangon	69.58	68.21	70.11
Shan	18.02	21.31	23.97
Ayeyawady	16.46	14.85	14.11
Union	24.27	24.79	29.59

Source: 1973, 1983 and 2014 Population and Housing Census, Department of Population

Appendix Table (2)
Ratio of Urban- Rural Population (1973, 1983 and 2014)

Stages/Regions	Ratio of Urban-Rural Population (1973)	Ratio of Urban-Rural Population (1983)	Ratio of Urban-Rural Population (2014)
Kachin	26.75	28.49	56.39
Kayah	31.23	35.15	33.81
Kayin	13.20	19.85	28.01
Chin	12.99	17.19	26.34
Sagaing	13.97	16.07	20.65
Tanintharyi	30.31	30.98	31.63
Bago	23.82	24.19	28.26
Magway	18.36	17.96	17.66
Mandalay	35.72	36.11	52.39
Mon	39.85	39.19	38.60
Rakhine	17.00	17.44	20.31
Yangon	228.71	214.54	234.55
Shan	21.98	27.08	31.52
Ayeyawady	19.70	17.45	16.43
Union	32.06	32.97	42.03

Source: 1973, 1983 and 2014 Population and Housing Census, Department of Population

Appendix Table (3)

Annual Rate of Change in Urban and Rural Areas, (1973-1983) and (1983-2014)

States/Regions	Annual Rate of Change (1973-83)	Annual Rate of Change (1983-2014)
	Urban	Urban
Kachin	2.53	7.29
Kayah	6.25	2.4
Kayin	3.61	6.9
Chin	4.8	2.72
Sagaing	3.86	2.32
Tanintharyi	2.97	1.82
Bago	2.11	1.45
Magway	2.08	0.62
Mandalay	2.58	3.46
Mon	2.7	0.68
Rakhine	2.3	0.54
Yangon	2.19	2.93
Shan	3.84	3.61
Ayeyawady	0.84	0.57
Union	2.41	2.45

Source: 1973, 1983 and 2014 Population Census, Department of Population

Appendix Table (4)

Tempo of Urbanization, (1973-1983) and (1983-2014)

States/Regions	1973-1983			1983-2014		
	Percent of Urban Population (1973)	Percent of Urban Population (1983)	Gain in percent Urban	Percent of Urban Population (1983)	Percent of Urban Population (2014)	Gain in percent Urban
Kachin	21.11	22.17	0.11	22.20	36.05	0.45
Kayah	23.80	26.01	0.29	26.25	25.17	-0.03
Kayin	11.66	16.56	0.49	16.59	21.88	0.17
Chin	11.50	14.67	0.32	14.63	20.88	0.20
Sagaing	12.26	13.85	0.16	13.86	17.11	0.10
Tanintharyi	23.26	23.65	0.04	23.63	24.01	0.01
Bago	19.24	19.48	0.02	19.47	22.03	0.08
Magway	15.51	15.22	-0.03	15.23	15.01	-0.01
Mandalay	26.32	26.53	0.02	26.52	34.38	0.25
Mon	28.50	28.16	-0.03	28.15	27.85	-0.01
Rakhine	14.53	14.85	0.03	14.86	16.87	0.06
Yangon	69.58	68.21	-0.14	68.20	70.11	0.06
Shan	18.02	21.31	0.33	21.29	23.97	0.09
Ayeyawady	16.46	14.85	-0.16	14.86	14.11	-0.02
Union	24.27	24.79	0.05	24.79	29.59	0.15

Source: 1973, 1983 and 2014 Population Census, Department of Population

Appendix Table (5)

Projection of Total, Urban and Rural Population for 1973, 1983 and 2024

Stages/Regions	Total Population			Urban Population		
	2014	2024	2034	2014	2024	2034
Kachin	1,642,841	1,980,654	2,387,930	592,368	714,175	86,102
Kayah	286,627	356,446	443,271	72,418	90,058	111,995
Kayin	1,504,326	1,590,971	1,682,608	329,166	348,125	368,176
Chin	478,801	537,691	603,825	99,809	112,085	125,871
Sagaing	5,325,347	5,734,370	6,174,809	911,335	981,332	1,056,705
Tanintharyi	1,408,401	1,536,420	1,676,075	338,419	369,180	402,737
Bago	4,867,373	4,985,603	5,106,705	1,072,336	1,098,383	1,125,063
Magway	3,917,055	3,901,418	3,885,844	588,031	585,684	583,346
Mandalay	6,165,723	6,746,376	7,381,711	2,143,436	2,345,293	2,566,159
Mon	2,054,393	1,936,690	1,825,731	572,189	539,406	508,502
Rakhine	2,098,807	2,208,623	2,324,184	354,288	372,825	392,333
Yangon	7,360,703	9,153,675	1,1383,392	5,160,512	6,417,546	7,980,777
Shan	5,824,432	6,794,147	7,925,310	1,395,847	1,628,243	1,899,330
Ayeyawady	6,184,829	6,253,238	6,322,403	872,600	882,252	892,010
Nay Pyi Taw	1,160,242	1,377,994	1,636,613	375,189	445,604	529,234
Union	50,279,900	55,094,316	60,760,411	14,877,943	16,930,191	19,403,267

Source: 2014 Population and Housing Census, Department of Population

Appendix Table (6)

Projection for Union, Urban and Rural Population by District

States/ Districts	Total Population (2014)	Total Population (2024)	Total Population (2034)	Urban Population (2014)	Urban Population (2024)	Urban Population (2034)
Kachin State	1,642,841	1,980,654	2,387,930	592,368	714,175	861,029
Myitkyina	531,456	640,738	772,491	314,180	378,784	456,672
Mohnyin	673,608	812,120	979,114	147,511	177,843	214,413
Bhamo	346,520	417,774	503,680	108,561	130,884	157,797
Putao	91,257	110,022	132,645	22,116	26,664	32,146
Kayah State	286,627	356,446	443,271	72,418	90,058	111,995
Loikaw	243,718	303,085	376,912	62,783	78,076	97,094
Bawlakhe	42,909	53,361	66,359	9,635	11,982	14,901
Kayin State	1,504,326	1,590,971	1,682,608	329,166	348,125	368,176
Hpa-an	783,510	828,638	876,366	112,405	118,879	125,726
Pharpon	35,085	37,106	39,243	17,320	18,318	19,373
Myawady	210,540	222,667	235,492	116,580	123,295	130,396
Kawkareik	475,191	502,561	531,507	82,861	87,634	92,681
Chin State	478,801	537,691	603,825	99,809	112,085	125,871
Hakha	98,726	110,869	124,505	32,513	36,512	41,003
Falam	167,578	188,189	211,336	31,375	35,234	39,568
Mindat	212,497	238,633	267,984	35,921	40,339	45,301
Sagaing Region	5,325,347	5,734,370	6,174,809	911,335	981,332	1,056,705
Sagaing	520,591	560,576	603,632	105,785	113,910	122,659
Shwebo	1,433,343	1,543,434	1,661,980	178,184	191,870	206,607
Monywa	757,358	815,528	878,166	244,144	262,896	283,088
Katha	861,283	927,435	998,669	95,327	102,649	110,533
Kalay	509,368	548,491	590,619	142,792	153,759	165,569
Tamu	114,869	123,692	133,192	59,938	64,542	69,499
Mawlaik	164,008	176,605	190,169	18,605	20,034	21,573
Hkamti	422,692	455,158	490,117	47,219	50,846	54,751
Yinmarpin	541,835	583,452	628,265	19,341	20,827	22,426
Tanintharyi Region	1,408,401	1,536,420	1,676,075	338,419	369,180	402,737
Dawei	493,576	538,440	587,383	107,956	117,769	128,474
Myeik	693,087	756,086	824,812	151,315	165,069	180,073
Kawthoung	221,738	241,893	263,881	79,148	86,342	94,191
Bago Region	4,867,373	4,985,603	5,106,705	1,072,336	1,098,383	1,125,063
Bago	1,770,785	1,813,798	1,857,856	464,741	476,030	487,593
Toungoo	1,123,355	1,150,642	1,178,591	231,736	237,365	243,131
Pyay	910,902	933,028	955,692	225,464	230,941	236,550
Thayawady	1,062,331	1,088,135	1,114,567	150,395	154,048	157,790
Magway Region	3,917,055	3,901,418	3,885,844	588,031	585,684	583,346
Magway	1,235,030	1,230,100	1,225,189	253,074	252,064	251,057
Minbu	687,575	684,830	682,096	68,646	68,372	68,099
Thayet	738,047	735,101	732,166	100,133	99,733	99,335

Appendix Table (6) (Continued)

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Projection for Union, Urban and Rural Population by District

States/Districts	Total Population (2014)	Total Population (2024)	Total Population (2034)	Urban Population (2014)	Urban Population (2024)	Urban Population (2034)
Mandalay Region	6,165,723	6,746,376	7,381,711	2,143,436	2,345,293	2,566,159
Mandalay	1,726,889	1,889,518	2,067,461	1,319,452	1,443,711	1,579,671
Pyin Oo Lwin	1,001,945	1,096,303	1,199,546	281,784	308,321	337,357
Kyaukse	741,071	810,861	887,223	81,503	89,179	97,577
Myingyan	1,055,957	1,155,401	1,264,210	167,951	183,768	201,074
Nyaung U	239,947	262,544	287,269	54,343	59,461	65,060
Yame Thin	518,384	567,202	620,618	59,912	65,554	71,728
Meiktila	881,530	964,548	1,055,383	178,491	195,300	213,693
Mon State	2,054,393	1,936,690	1,825,731	572,189	539,406	508,502
Mawlamyine	1,232,221	1,161,623	1,095,070	434,092	409,221	385,776
Thaton	822,172	775,067	730,661	138,097	130,185	122,726
Rakhine State	2,098,807	2,208,623	2,324,184	354,288	372,825	392,333
Sittwe	535,583	563,606	593,096	133,664	140,658	148,017
Myauk U	669,131	704,142	740,985	90,141	94,857	99,821
Maungtau	96,330	101,370	106,674	22,181	23,342	24,563
Kyaukpyu	439,923	462,941	487,163	44,500	46,828	49,279
Thandwe	357,840	376,563	396,266	63,802	67,140	70,653
Yangon Region	7,360,703	9,153,675	11,383,392	5,160,512	6,417,546	7,980,777
North Yangon	2,606,670	3,241,621	4,031,238	1,428,659	1,776,662	2,209,434
East Yangon	2,366,659	2,943,147	3,660,059	2,339,903	2,909,873	3,618,681
South Yangon	1,417,724	1,763,063	2,192,523	422,300	525,167	653,091
West Yangon	969,650	1,205,844	1,499,572	969,650	1,205,844	1,499,572
Shan State	5,824,432	6,794,147	7,925,310	1,395,847	1,628,243	1,899,330
Taunggyi	1,701,338	1,984,595	2,315,012	463,988	541,238	631,349
Loilin	565,162	659,256	769,016	128,432	149,815	174,758
Linkhe`	139,483	162,706	189,795	43,882	51,188	59,710
Lashio	612,248	714,182	833,086	224,136	261,453	304,982
Muse	453,495	528,998	617,071	164,035	191,345	223,203
Kyaukme	770,065	898,274	1,047,828	119,469	139,360	162,562
Kunlon	58,774	68,559	79,974	5,549	6,473	7,551
Laukine	154,912	180,703	210,789	28,183	32,875	38,349
Hopan	228,880	266,986	311,437	29,553	34,473	40,213
Makman	241,884	282,155	329,132	17,617	20,550	23,971
Kengtung	366,861	427,940	499,188	72,535	84,611	98,698
Minesat	243,571	284,123	331,427	27,775	32,399	37,793
Tachileik	177,313	206,834	241,270	58,767	68,551	79,964
Minephyat	110,446	128,834	150,284	11,926	13,912	16,228
Ayeyawady Region	6,184,829	6,253,238	6,322,403	872,600	882,252	892,010
Patheingyi	1,630,716	1,648,753	1,666,989	303,954	307,316	310,715
Phyapong	1,033,053	1,044,479	1,056,032	135,509	137,008	138,523
Maubin	973,948	984,721	995,612	109,148	110,355	111,576
Myaungmya	781,844	790,492	799,235	94,433	95,47	96,534
Labutta	626,558	633,488	640,495	66,318	67,052	67,793
Hinthada	1,138,710	1,151,305	1,164,039	163,238	165,044	166,869
Nay Pyi Taw Union Territory	1,160,242	1,377,994	1,636,613	375,189	445,604	529,234
Ottara (North)	526,497	625,309	742,665	145,181	172,428	204,789
Dekkhina(South)	633,745	752,685	893,947	230,008	273,176	324,444

Source: 2014 Population and Housing Census, Department of Population

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