

The Effects of Student Engagement on Selected Desirable Outcome through Mediating of Satisfaction

U Zaw Myo Htun¹

Abstracts

This study examines the relationships between student engagement in a university and selected desirable outcomes of undergraduate education. Student engagement is a domain of constructs that measures both the time and energy students devote to educationally purposeful activities and how students perceive different facets of the institutional environment that facilitate and support their learning. The desirable outcomes represent a portion of what is meant by acquiring intellectual skills that are important for future academic achievement and success in the professional world. Structural equation modeling (SEM) was employed to model the complex relationships between the students' personal characteristics, engagement behaviors and perceptions, and the outcome variables. The results show that student engagement is significantly positive effects on desirable outcome and student satisfaction is a mediator between student engagement and desirable outcome.

Key words: Satisfaction, student engagement, higher education

INTRODUCTION

For more than two decades higher education institutions have been under pressure to conduct assessment and produce evidence for accountability. In this context, process indicators that measure student engagement have emerged as a hopeful source of evidence of student success and institutional quality (Kuh, 2001; Kuh, Pace, & Vesper, 1997). According to National Education Strategic Plan 2016-21, Myanmar has 171 higher education institutions(HEIs), colleges, degree colleges, and universities, which are overseen by eight ministries. In the 2015vacademic year, there were 225,178 students studying full-time in HEIs under the

¹ Professor and Head, Department of Management Studies, Cooperative university(Than Lyin)

responsibility of the Ministry of education, while an additional 411,164 students were accessing higher education through Distance Education Universities (MOE, 2016). This figure shows that nearly half of the students were only interested to attend the normal university. On the other hand, it means ordinary universities were challenged by Distance Universities. Thus, small university like cooperative universities are needed to examine the student engagement factors which drive the students satisfactions. Because, satisfaction is main driving force of student retention, this study examines the effect of student engagement in the university on desirable outcome of undergraduate education, and tests whether or not conditional effects based on student differences play a role. Current investigation is important for at least two reasons. First, it adds to a growing number of studies testing the validity of links between engagement constructs and desired student outcomes. Second, the study provides findings, conclusions, and recommendations for researchers and administrators interested in the quality of the students of the university.

This study focuses on the extent to which students engage in effective educational practices. Specifically, it is investigate the activities of undergraduate students of cooperative University, Thanlyin with in selected areas that research shows is related to student learning, personal development, and satisfaction with university, including the degree to which they perceive their campus to be supportive of academic and social needs. The paper was also examined their self-reported gains in two domains: general education and personal and social development.

Most of the research measured the three outcomes: learning as measured by grades, - reported gains in general education learning, self-reported gains in intellectual skills. Because they represent a portion of what is meant by success in the student experience. Current research, however, do not examined the academic grades. It is difficult to measure in Myanmar Education system.

Several large research gaps exist in the field of student engagement and desirable outcomes of university students in Myanmar. In addition, there has been little published research into the relationship between leadership styles and desirable outcome through the mediating roles of satisfaction. This area would benefit from empirical research into what student engagement and student satisfaction can effects on selected desire outcome gain. Such a study would both fill a gap in the literature and have an important potential effect on practice.

LITERATURE REVIEW

Many factors are causing colleges and universities to pay closer attention to student engagement as it relates to students' spirituality, diversity, and ethical development. A multitude of papers have been written and studies conducted addressing the issue of engagement and involvement and their relationship to student outcomes in college. These outcomes include not only cognitive and psychosocial development but also spiritual, diversity, and ethical development. According to Kuh (2009b) "Every reform report since *Involvement in Learning* emphasized to varying degrees the important link between student engagement and desired outcomes" (Kuh, 2009b, p. 684). This section of the review of the theoretical framework will synthesize the student engagement and student development theories that will guide this line of research.

Student Engagement

The concept of student engagement has been the focus of scholarly discussion in higher education literature for decades (Astin, 1996; Astin & Panos, 1969; Kuh, 2004). Previous models of college impact portrayed the student as a passive subject impacted upon by the college environment, but Pace (1964, 1982) believed the student to be an active participant in his or her own learning, and that one of the most important determinants of student success is the investment of the student in taking advantage of the educational resources and opportunities of the campus. In his modification of Pace's concept of quality of effort, Astin's (1984; 1991; 1993b) theory of student involvement suggests that students who are more invested in their college experience are more likely to be successful in college. Astin (1984) defines involvement as "the amount of physical and psychological energy that the student devotes to the academic experience" (p. 297). Recently, Kuh and others (Hu & Kuh, 2001; Kuh, 2001, 2003; Kuh & Associates, 2001) have promoted the concept of student engagement as an important antecedent of student success and indicator of institutional quality. Student engagement is a domain of constructs that measures both the time and energy students devote to educationally purposeful activities, and how students perceive different facets of the institutional environment that facilitate and support their learning (Kuh, 2001).

Engagement has both behavioral and psychological elements. *Behaviorally*, student engagement includes initiating interactions with faculty members, cooperating with peers in learning activities, actively investigating new and useful sources for learning, and spending time

studying, rehearsing, doing problem sets, and other learning tasks. Thus, student engagement implies a simple equation: the amount students learn in college is a function of how much they put into it. The *psychological* element of engagement includes student perceptions and attitudes concerning the norms of the institution. Students hold individual beliefs about coursework activities, the quality of relations with agents of socialization on the campus (students, faculty members, and administrators), and the emphasis the institution puts on scholarly activities, respect for diversity, appreciation of the arts, and vocational preparation (Kuh, 2001). Because beliefs and attitudes are antecedents to behavior (Bean & Eaton, 2000), perceptions of the campus environment are a critical piece in assessing a student's receptivity for learning. Measures of student engagement are often called *process indicators* of institutional quality. Even with rich evidence of outcomes, institutions still need to know what programs, processes, activities, and student efforts produced those outcomes (Banta, 2002; Kuh, Pace, & Vesper, 1997). Perhaps the best known list of process indicators is the *Seven Principles for Good Practice in Undergraduate Education* (Chickering & Gamson, 1987, 1999). These principles call for institutions to deliver their programs and services to shape student behavior in desired directions. They include student-faculty contact, cooperation among students, active learning, prompt feedback from faculty members, time on task, high expectations, and respect for diverse talents and ways of learning. All are believed to be highly associated with student success in a variety of ways.

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Level of academic challenge is the concept derived from Weiner's (1979, 1985) attribution theory, which mentioned that academic motivation in terms of task difficulty (or

having the opportunity of a challenge) is one of the determining factors in the effort a student will expend on that activity. Similarly, challenging intellectual and creative work are both said to be central to student learning and collegiate quality (National Survey of Student Engagement, 2006).

Active and collaborative learning recognizes that learning is collaborative and social. Active learning states that students learn more when they are intensely involved in their education (National Survey of Student Engagement, 2006). In general, active learning involves any instructional method that engages student in the learning process, and requires students to perform meaningful learning activities and think about what they are doing (Prince, 2004). Chickering and Gamson (1987) described active learning as the process of talking, writing, relating to and reflecting on what is being learned, rather than passively receiving information. In essence, core components of active learning are student activity and engagement in the learning process. On the other hand, collaborative learning is defined as any instructional method in which students work together in small groups toward a common goal (Prince, 2004).

Student-faculty interaction is the quality communication between student and faculty. Studies have shown that when students interact with faculty inside and outside the classroom, students tend to learn firsthand information and/or knowledge (National Survey of Student Engagement, 2006). The transformation of learning environments into places of effective teaching and deep learning requires new ways of looking at the roles of teachers (Dunleavy & Milton, 2009).

Enriching educational experiences encompasses learning opportunities both inside and outside the classroom. Besides the more common co-curricular activities found inside the school, some other enriching experiences includes opportunity to learn from and in a culturally diverse atmosphere, technology enhanced learning, internship experiences, and community service opportunity (National Survey of Student Engagement, 2006). Co-curricular activity is defined as the activities being outside of, but usually complementing the regular curriculum (cocurricular, 2010).

Supportive campus environment indicates that students perform better and are more satisfied at institutions that are committed to their success and cultivate positive working and social relations among different groups on campus (National Survey of Student Engagement,

2006). In a broader sense, a group or a community is the result of interaction and deliberation by people brought together by similar interests and common goals (Rovai, 2002).

Satisfaction with Educational Experience

Student satisfaction with the college environment is vital as it “covers the students’ subjective experience during the college years and perceptions of the value of educational experience” (Astin, 1993, p. 273). It is a separate and significant educational outcome considering the time and energy students invest in attending college. Astin’s (1993) satisfaction measures included satisfaction with the total undergraduate experience and satisfaction with relationships with faculty, curriculum and instruction, student life, individual support services, and facilities. He found that satisfaction was enhanced by frequent interaction with faculty and other students, which ties into one of the benchmarks of effective educational practice: student-faculty interaction. In addition, Astin found that student satisfaction differed by major: engineering majors reported the lowest satisfaction levels with curriculum and instruction, relationships with faculty, student life, individual support services, and opportunities to take interdisciplinary courses. Strong student satisfaction implies that appropriately challenging instructional methods are serving to trigger students’ thinking and learning. Important elements in student satisfaction are likely to concern the role of the instructor and of the students; these elements may be central to student learning. The present study explored some of these elements, in an effort to begin identifying the ones most helpful for ensuring students’ academic success (Winberg and Hedman, 2008).

General education requirements are intended to address the expansive intended outcomes that appear in institutional mission statements. Among the subjects included in the general education curriculum are mathematics and basic sciences, oral and written communication, critical thinking and problem solving, information technology, and diversity and multiculturalism. Involvement variables having positive relationships with general learning include courses that emphasize writing skills, science or scientific inquiry, history or historical analysis, having instructors critique written papers, and discussing racial or ethnic issues (Astin, 1993b).

The development of intellectual skills is a commonly researched outcome of the first year experience (Cuseo, 2000; Gardner, Barefoot, & Swing, 2001; Moody, 1993; Schilling, 2000). For example, Astin (1993b) found that discussing racial or ethnic issues has a positive

relationship and taking remedial courses and receiving tutoring had a negative relationship with communication skills. Terenzini (1995) reported that critical thinking ability is positively influenced by the number of courses that emphasize writing skills, interdisciplinary courses, taking science and history, having class papers reviewed by instructors, and discussing racial and ethnic issues.

Based on the literature, the model hypothesizes that successful outcomes in the school years of university are a function of student background characteristics, forms of engagement, the amount of integration of learning experiences and perceptions of the campus environment. Consistent with Pascarella's (1985) model, the degree to which the student is engaged with institutional agents of socialization influences the student's overall academic engagement. According to Lo(2010), student satisfaction factors are associated with perceived learning as rated by students. Satisfaction factors to be associated with higher rates of perceived learning, measured via students' expectations of academic success. Finally, the model sees similar relationships between perceptions of the campus environment and background characteristics, academic engagement, and engagement with agents of socialization.

Objective of the study

There are altogether three objectives are set in the study:

- ❑ To examine the relationship among student engagement, student satisfaction, and gain in general learning outcome and personal development outcome.
- ❑ To find out the mediating roles of student satisfaction between student engagement and aggregate outcome

Research questions of the study

- Q-1 Are there any relationship among student engagement, student satisfaction, and gain in general learning outcome and personal development outcome?
- Q-2 Is there mediating role of student satisfaction between student engagement and aggregate outcome?

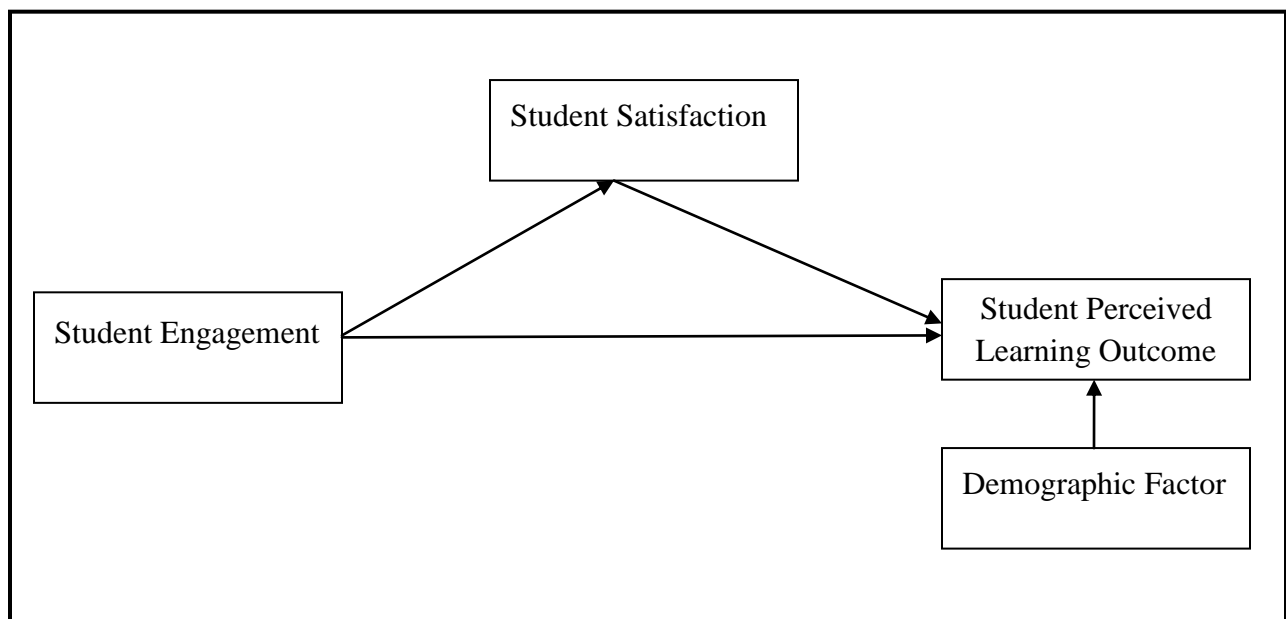
Hypothesis Development

To investigate the relationship between leadership styles and work engagement, the following hypothesis will be developed:

- H1: Is there any relationship among student engagement and aggregate desire outcome (general learning out come and personal development outcome)?
- H2: Is there any relationship between student engagement, student satisfaction ?
- H3: Is there mediating role of student satisfaction between student engagement and aggregate desire outcome (general learning out come and personal development outcome)?

Figure(1) portrays the conceptual model, based primarily on Pascarella's (1985) General Causal Model, that serves as the analytical basis for this study. The conceptual model proposes directions of influence among the student background, engagement, environment, and outcome variables. *Engagement with agents of socialization* represents a group of latent constructs that includes student-faculty interaction, diversity interaction, and substantive conversations between students and their peers.

Figure (1) Conceptual Framework



Source: Current Research

Latent constructs within the *forms of academic engagement* include writing experiences, amount of reading and writing, and use of computers and information technology. Two observed variables also fall within this category – use of the academic tutoring center and the amount of time spent per week doing academic work.

Method of the study

This study applies PLS path modeling to assess the meditational effect of student satisfaction on the relationship between Student Engagement to student perceived learning development. Units of analysis in this study comprise students, this is because they are the most reliable and have full information on the subject matter. In addition, the study gets total number of students who are registered in students' affair section. The sample size for a given population of 1702 is 304 (Waston, 2001). However, to reduce sample size error and also to take care of the non-response problem, the sample size were increased and rounded up to 500 (Hair, Wolfinbarger, & Ortinau, 2008). To test this research various techniques had been used. First, demography data had been investigated to understand the compositions of the respondents and their demographic factor. Second, principal component analysis had been used to construct the dimensions factors of Student engagement. This study applies PLS path modeling to assess the meditational effect of student satisfaction on the relationship between student engagements to selected perceived desirable outcome.

Since its inception in 2000, more than one million randomly selected students from 1,100 different four-year colleges and universities have participated in the collection of information regarding highly effective educational practices (National Survey of Student Engagement, 2006). Currently, NSSE has been highly quoted in researchers and is adapted in countries such as Canada, Australia, and many others (National Survey of Student Engagement, 2010). In the conceptual framework of NSSE, Kuh (2009) mentioned that there are five key clusters of activities that are linked to desired outcomes in education. These are level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environment. These indicators or benchmarks are well supported with not only the findings of the NSSE, but are also noted in findings of various student engagement studies (Coates, 2007; Dunleavy & Milton, 2009).

Analysis and Findings

Following Table (1) explains the demographic factor of the respondents. Of all the participants, female was 89.3 percent and male was 10.7 percent. Because of the respondents are university students, their age are relatively young: 55.3 percent of respondents were under 20 years old and 42.8 percent of respondents were 21 to 22 years old. 28.8 percents of the students are living with parents. However, the largest portion of the students is living in hostels with 65.5 percent.

Table (1) Respondents Demography Profile

		Frequency	Percent
Age	16-17	70	14.9
	18-19	190	40.4
	20-21	201	42.8
	22 and above	9	1.91
Gender	Male	112	23.8
	Female	358	76.2
Education Level	First Year	83	17.7
	Second Year	86	18.3
	Third Year	195	41.4
	Fourth Year	106	22.6
Living	Parent	135	28.8
	Relative	27	5.7
	Hostel	308	65.5

Transportation	Foot	293	62.34
	Cycle, Bicycles, Bus, Ferry,	134	28.51
	Taxi	35	7.45
	Owned Car	8	1.70
10 Std Marks	Below 300	5	1.06
	301-310	5	1.06
	311-320	8	1.70
	321-330	27	5.74
	331-340	26	5.53
	341-350	41	8.72
	351-360	53	11.28
	361-370	74	15.74
	371-380	94	20.00
	381-390	58	12.34
	391-400	42	8.94
	401 and above	37	7.87

Source: Current Research

Goodness of Measures

This paper used main criteria used for testing goodness of measures are validity and reliability. Reliability is a assess whether measures consistently a measuring what it is to be measuring, on the other hand validity is to assess of how a sound a scale that is developed measures the exacting conception it is proposed to measure (Sekaran and Bougie 2010).

Table (2) Results of Factor loading

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.809
Bartlett's Test of Sphericity	Approx. Chi-Square	3369.488
	df	496
	Sig.	.000

Rotated Component Matrix ^a					
	Component				
	1	2	3	4	5
SCE5	.622				
SFI3	.598				
SFI2	.578				
SFI4	.562				
ACLE6	.536				
SFI1	.508				
EE3					
SFI5		.686			
EE5		.668			
EE4		.652			
EE1		.488			
EE6		.466			
AC2			.593		
ACLE2			.559		
ACLE3			.556		
AC3			.549		
AC1			.524		
ACLE1			.451		
AC8					
AC7					
EE2					
AC4				.638	
AC5				.625	
AC6				.584	
ACLE4				.509	
SCE4				.504	
ACLE5				.474	
SCE6				.443	
ACLE7					
SCE2					.801
SCE3					.702
SCE1					.670

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 9 iterations.

Construct and Convergent Validity

In line with recommendation of Hair *et al.* (2010) and Chin (1998), factor loading of the items could be used to confirm the content validity of the measurement model. Therefore, construct validity signify how well the results obtained from the use of the measure fit the theories around which the test is designed (Sekaran and Bougie 2010). This can be accessed through convergent and discriminate validity. Initially, the study observed the respective loadings and cross loadings from Table 2 to assess if there are problems with any particular items. In line with the yardstick value for loadings was at 0.4 as significant (Hair et al. 2010). Meaning that if any items which has a loading of higher than 0.4 on two or more factors then they will be deemed to be having significant cross loadings. From Table 2 we can observe that all the items measuring a particular construct loaded highly on that construct and loaded lower on the other constructs thus confirming construct validity.

Discriminant Validity

The discriminant validity of the measures (the degree to which items differentiate among constructs or measure distinct concepts) was assessed by examining the correlations between the measures of potentially overlapping variables. Items should load more strongly on their own constructs in the model, and the average variance shared between each variable and its measures should be higher than the variance shared between the construct and other variables (Compeau et al. 1999). Therefore, this paper calculated the square root of the AVE that exceeds the inter correlations of the construct with the other constructs in the model to ensure discriminant validity (Chin, 2010, 1998b; Fornell & Larcker, 1981). Hence, the measurement model was regarded as satisfactory with the evidence of adequate reliability, convergent validity, and discriminant validity and this lead to employ for testing hypotheses and proving the research model (see Table 4).

Table (3) Discriminat validity

	Perceived Learning Outcome	Student Engagement	Student Satisfaction
Perceived Learning Outcome	0.689		
Student Engagement	0.543	0.636	
Student Satisfaction	0.635	0.468	0.798

(In bold) represent the average variance extracted while the other entries represent the squared correlations

Having established the validity and the reliability of the measurement model, the next step was to test the hypothesized relationship by running PLS algorithm and Bootstrapping algorithm in SmartPLS 3.0.

Figure (2) Path coefficient of Model

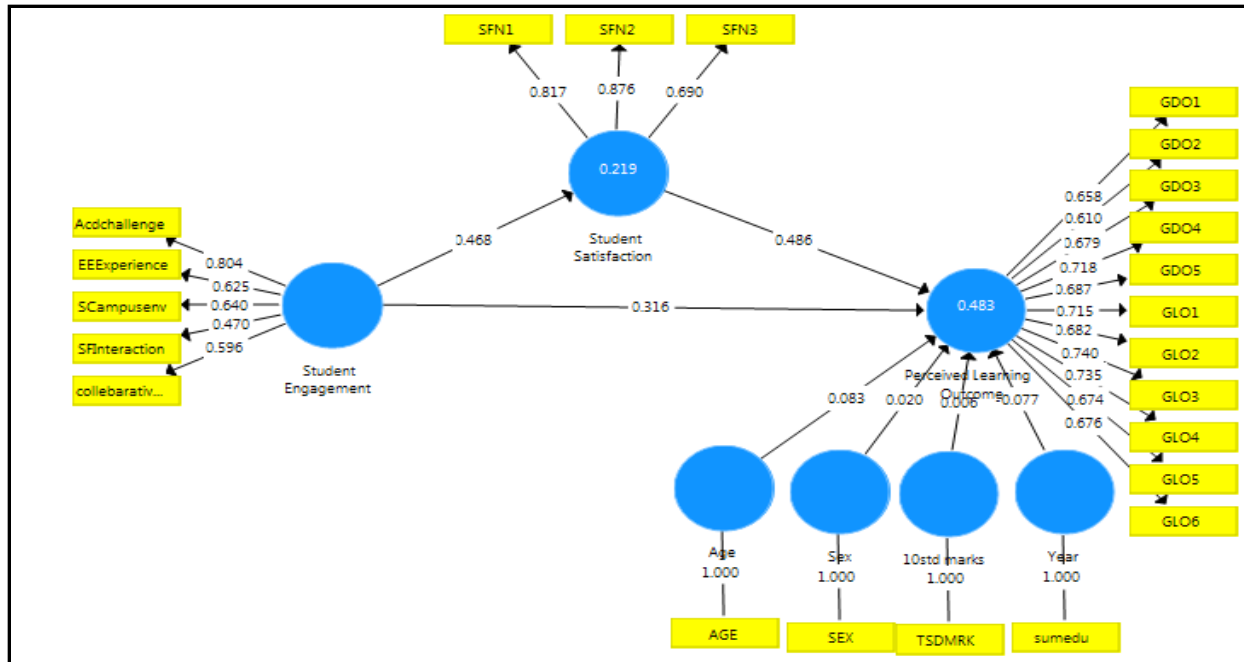


Figure 3: Significance of path coefficient

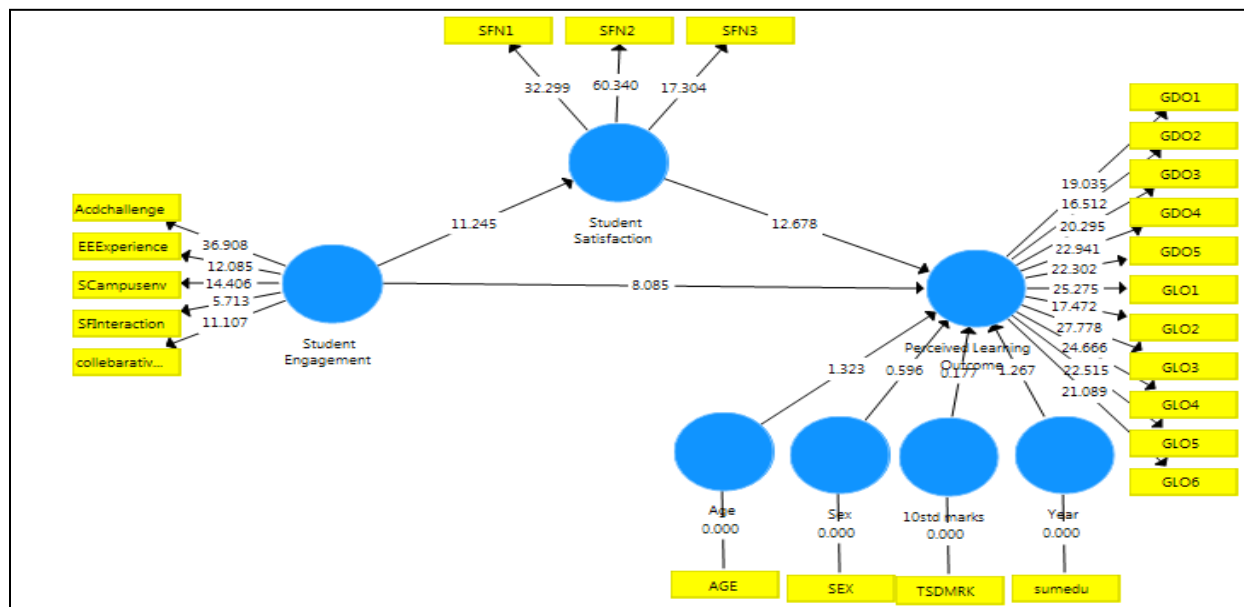


Table (4) Hypothesis testing result (Direct relations)

	Path Coefficient	Standard Error	T Statistics	P Values	Decision
Student Engagement -> Perceived Learning Outcome	0.316	0.037	8.621	0	Supported
Student Engagement -> Student Satisfaction	0.468	0.042	11.088	0	Supported
Student Satisfaction -> Perceived Learning Outcome	0.486	0.038	12.823	0	Supported
Year -> Perceived Learning Outcome	-0.077	0.062	1.235	0.218	Un Supported
10std marks -> Perceived Learning Outcome	0.006	0.034	0.168	0.866	Un Supported
Age -> Perceived Learning Outcome	0.083	0.062	1.35	0.178	Un Supported
Sex -> Perceived Learning Outcome	0.02	0.034	0.587	0.558	Un Supported

In Figure 2, 3, and table 5, it is supported for H1, H2, and H3. In this study it was found that student satisfaction was significant predictor Perceived learning outcome followed by student engagement. The higher the extent of student satisfaction and engagement, the better is the students' perceive learning outcome and performance.

DISCUSSION AND CONCLUSION

This study has extended existing engagement theory in the context of university students setting by capturing that HEIs has take action in a conscientious way to equivocate escalating stakeholder demands, but to accomplish a better or excellent learning community. Based on the result it was found that there is significant relation between the two constructs (engagement and perceived development outcome). **Therefore, this finding is corroborates that of (Ahmad et al., 2011; Ambrose, Ahmad & Schminke, 2006 & Chew & Chan, 2006).** **The significant relationship between engagement and performance in this study could possibly be as a result the fact the engagement to university is regarded as significant by student perception in Myanmar.**

Similarly, another findings capture this relationship was tested using PLS path coefficient analysis, and was subsequently accepted in line with statistical results. It was found satisfaction significantly influence perceived learning outcome. In addition the statistical relationship between the two constructs is positive. Thus, the higher the student satisfaction the more likely it increase the performance.

Consequently, the outcome of this research established that student satisfaction significantly mediates the causal relationships between engagement and perceived development outcome. To this end, this is hoped to have significantly contributed to management theory. Furthermore, it would be useful for future research to compare the performance between component-based SEM (PLS) and covariance-based SEM in terms of modeling with moderation and mediation effects under different research conditions, such as number of manifest variables, Sample size per latent variables, this situation may provide a possibility for connecting design methodologies to their decisive effects on the development of a model with both formative and reflective constructs.

The main objective of this study was to examine the relationship between leadership styles, demographic factors and personal characteristics on employee engagement. The result of multiple regression tests for leadership styles toward employee engagement and explanation in the earlier part of this article showed that hypothesis about leadership styles affects to employee engagement. In addition, the finding shows the different leadership styles make different level of employee engagement. Faculty perception of a transactional leadership style in Department chair tends to be positively associated with employee engagement. But, servant leadership has negative impact on employee engagement. However, there is no significant result of personal characteristics on employee engagement. In addition, the service year is positively associated with employee engagement. Moreover, periods under current department chair has a negative impact on employee engagement.

There are limitations to the generalization of findings noted in this study. The data for this study was collective from cooperative universities and cooperative colleges and this may not represent other institutions in higher education sector of Myanmar. In addition, the questionnaires used in this study are directly adopted from Schaufeli and Bakker's Work Engagement Scale (UWES), Bass & Avolio's Multifactor Leadership Questionnaire, Barbuto and Wheelers' Servant Leadership Questionnaire, Zhang's Personal Characteristic

Questionnaire. Therefore, it is necessary to modify the questionnaire which can measure exact dimensions of factors used in this study.

The findings of this study clearly show that there are relationships between employee engagements and some leadership styles. However, there are different degrees of impacts on employee engagement by different leadership styles. Based on current research, teaching staffs in co-operative university are more engage when their immediate supervisors or head of the department are practicing the transactional leadership style.

The finding of this research also support that employee engagement is a meaningful concept and requires serious attention from the administrations of the university. Universities need to pay attention on leadership styles of chair which encourage employee engagement. In practical terms, this study suggests that top management of the university should be trying to understand the employee engagement behavior of their faculty members to raise the performance of the university.

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Factors Affecting Students' Major Choice in Co-operative Universities

NAY MIN AYE¹

Abstract

Major choice is an important decision for students since it determines the kinds of career that they intend to pursue in life. In TCU, students have to make major choice at the end of the first year course. The purpose of this research was to examine the students' expected major specialization and identify the factors influencing the students' major choice. The data for the study is collected from 200 second year students via self-administered questionnaire. The study is conducted using descriptive statistics and multinomial logistic regression method with the aid of SPSS. The findings of the study indicate that accounting and finance is the most popular major among the TCU students and students' major choice can be explained by gender, personal factor and career factor.

Key words: major choice, gender, personal factor, career factor

INTRODUCTION

Major choice is one of the important decisions for most of the university students in their life since it affects the continuity of learning and career in their life. Students' major decision can determine their success or failure, satisfaction or dissatisfaction, the job opportunity, financial returns and social status (Ahmad 2013). Thus, the students' right major choice help their career goals after graduation. In Myanmar, university education is valued as one of the channels for improvement and advancement in career and social life of people. Thus, most of the students have to make sound decision in selecting university and major specialization in university selected. For some students, major choice lead to job opportunities in that field or related field however, for others major choice allows them to explore personal interest in the subjects. Accordingly, how to make major choice decision and what factors are driving and motivating to choose a particular major was paid attention by many researchers and university policy makers so that they can make appropriate interventions for supporting the students major choice.

In Myanmar, there are many public universities and private universities which offer various disciplines that enhance students' interest, career, and social status. Among them, Co-operative universities are providing business science degree in five major specialization;

¹ Associate Professor and Head, Department of Commerce, Co-operative University, Thanlyin

Accounting & Finance (AF), Marketing Management (MM), Regional Development (RD), Applied Statistics (AS), and Social Enterprise Management (SEM). However, little attention has been paid to exploring why students choose a particular major in Co-operative Universities. According to the education system in Co-operative Universities, freshmen enrolled in the universities have to take all the basic subjects for five major specializations and at the end of first year they have to declare the major they want. In deciding the major, many factors such as personal interest, job opportunities, enjoyment, and referents of the students may have some degree of influencing on the students' choice. Thus, the study explored the influencing factors on students' major choice in Co-operative Universities.

RESEARCH OBJECTIVES

A great deal of researchers investigated the factors affecting the students' major choice in other contexts. An important question is why some individuals decide to a particular major and while others do not. Major choice in the university is the major step for most of the students in their learning continuity. Therefore, the main objectives of the research are:

- (1) To examine the students' expected major in the university.
- (2) To explore the importance of factors influencing the students' major choice.
- (3) To analyze the factors predicting the students' major choice.

RESEARCH METHODOLOGY

This study is designed to investigate the importance of factors affecting the students' major choice at Co-operative Universities. There are two Co-operative Universities in Myanmar, however the current study decided that Thanlyin Co-operative University (TCU) as the study unit. Then, the study selects only second year students from five major specializations. The respondents are taken using simple random sampling method and the research mainly use cross-sectional data for the study. The population of the study is 332 second year students from five major specializations in academic year 2016-17. For the study, totally 200 students were chosen (40 students from each major). Thus, sample was constituted 60 percent of the population. The primary data is collected through direct administration of a self-completion questionnaire which includes closed-end questions and five point Likert scale questions. The questionnaire is developed based on previous researches in academic journal and some adaptation were made to reflect the culture of the selected university. In this research, only second year students are chosen because they have already declared the major and they have some experiences in the current major for a relatively long period. Dependent

variable in this research is students' major choice and the independent variables are gender, personal factor, social encouragement, and future career. The study applies descriptive statistics and multinomial logistics regression by using the SPSS version 22.

REVIEW ON RELATED LITERATURE

For most of the university students, deciding a major is one of the most important decisions since it affects many other areas of their life. Accordingly, many researchers paid attention to this area as attracting research area and they conducted researches regarding major choice decision in various contexts. Most of the researches focused on the behaviour theory in analyzing the factors affecting students' major choice. In the study of Lent, Brown & Hackett (1994), General social cognitive theory suggested that self-efficacy beliefs determine whether an action will be pursued, how much effort will be given to that pursuit, the persistence in the face of obstacles and ultimately the performance level of the action. Lent et al. hypothesized that behaviour (choice of career) is a function of the dynamic interplay between beliefs and environmental conditions. Lent et al. proposed that a person with interest in a particular career path is unlikely to pursue that path if the individual perceives barriers to entering or advancing that career. Perceived barriers include internal factors such as confidence in ability to manage the difficult situations that may arise.

In the theory of Planned Behaviour (TPB), Ajzen (1991) predicted that an individual's behaviors are caused by his or her attitudes about the behaviour and his or her perception of social norms. People with favourable attitudes and perception of social norms toward a behaviour are more likely to engage in the behaviour. In addition, perceived control over a behaviour can determine in performing behaviour. Perceived behaviour control refers to the self-perceived ability of an individual to perform the behaviour. Therefore, students' major choice decision may be influenced by their ability to perform in that major (perceived control), parents' approval and teachers'/friends' encouragement that major (social norm) and personal interest and enjoyment in the major (attitude). Accordingly, the current research idea was based on the TPB by Ajzen.

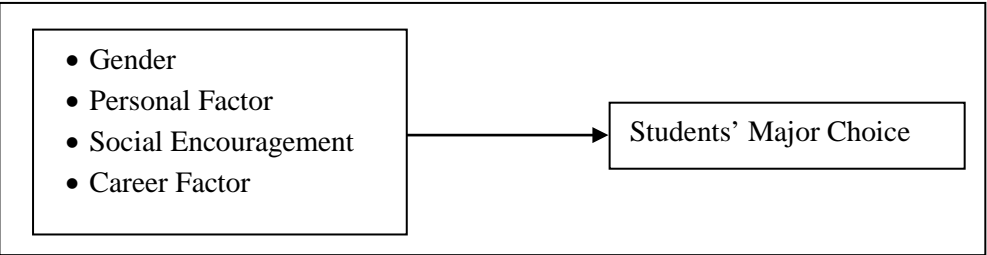
There were many other researches finding the factors influencing the students' major choice. Malgwi, Howe, and Burnaby (2005) defined the factors influencing the choice of a major (i.e. Interest in the subject, job opportunities, compensation, introductory course, and discussion with other students). In the study of Uyar, and Kuzey (2011), it was found that the students who choose the accounting major assumes that accounting field provides good job opportunities and the field matches with abilities and skills. Some researchers investigated that

parents’ suggestion and encouragement are the most influencing factors (Pearson and Dellman-Jenkins, 1997). DaMarie and Aloise-Young (2003) found that the reasons for selecting a major for the business students are career, the interest in the area, and enjoyment of learning. Lowe & Simon (1997) identified the principal categories in students’ expectation when selecting a major as initial earnings, career opportunities, career characteristics, and characteristics of the major. They found that the most important career factors when selecting a major were financial rewards, job availability and interest in the major/career.

According to research by Ahmad (2013), Kim et al. (2002) determined the reasons for choosing a major which are interest in a career associated with the major, good job opportunities, good fit with respondents’ abilities, a desire to run business someday, and projected earnings in the related area. Noland, Case, and Francisco (2003) found that alumni, the internet, newspaper, and TV were rated as the top information sources influencing the choice of major. Galotti and Kozberg (1987) listed the most important factors influencing students’ major choices as “how much I care about the subject”, something I do well in”, “something with good career opportunities”, and “what I want to do with this major after college”.

The primary purpose of the current research was to explore the importance of factors affecting students’ major choice. According to literature and previous research studies, there are many factors affecting the students’ major choice. However, in this research it is assumed that the students’ major choice is mainly affected by gender, personal factor (perceived academic ability, personal interest, enjoyment), social encouragement (parental and family encouragement, classmate suggestions, teachers encouragement), and future career factor (future good opportunities, high initial salary, long-term earnings prospects, self-employment opportunity and job security). The conceptual framework for the current research was developed as shown in Figure 1.

Figure 1: Conceptual Framework of the Study



Source: Adapted from literature

ANALYSIS OF THE FACTORS AFFECTING STUDENTS' MAJOR CHOICE

In this section, the students' demographic profile is firstly analyzed. Then, the students' expected major in the university is evaluated. In addition, the most important information source for students in making major decision is identified in the current study. Lastly, the factors influencing the students' major choice are explored. The data is analyzed by using Statistical Package for Social Science (SPSS Version 22).

Profile of the Respondents

Firstly, profile of the respondents covered in the survey is presented in this section. It has been constructed based on students' gender, race, age, and area of residence. The profile of the respondents is presented in Table 1. There are 200 respondents in the study, 40 respondents from each major specialization. According to gender difference, the percentage of female respondents is higher than the male respondents. This is not surprising in the case of Co-operative Universities since females have been historically dominating in the student list of the Universities. The majority of students in all classes at Co-operative Universities are female students. Totally, 73 percent of the respondents are female and 27 percent are male respondents. In terms of race of respondents, majority of the respondents are Bamar in all major specializations. In addition, the mean age for the sample is 18.56 which is the standard age for most of the second year students in universities. Among respondents in the sample, the percentage of respondents who live in rural area (53.5 percent) is relatively higher than that of respondents from urban (46.5 percent).

Table 1: Profile of the Respondents

Sample size	200	100%
Gender		
Male	54	27%
Female	146	73%
Race		
Kayin	14	7.0%
Chin	2	1.0%
Mon	3	1.5%
Bamar	166	83.0%
Rahkine	6	3.0%
Shan	7	3.5%
Other	2	1.0%
Mean Age	18.56	
Area of residence		
Urban	93	46.5%
Rural	107	53.5%

Source: Survey Data (June, 2017)

Students' Expected Major

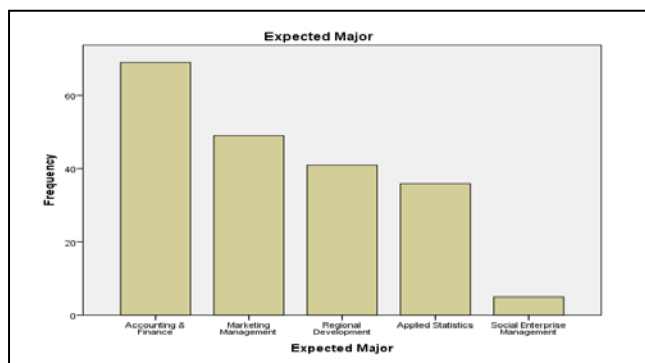
In this research, the respondents' expected major is measured by simply asking the major they expected at the end of first year course. Totally, 200 students were participated in the study. The major specializations that show a high percentage score are Accounting & Finance 69(34.5%), Marketing Management 49(24.5%), Regional Development 41(20.5%), Applied Statistics 36(18.0%), and Social Enterprise Management 5(2.5%). Thus, the study reports that Accounting and Finance is the most popular major and Social Enterprise Major is the least popular major among the students in TCU.

Table 2: Respondents' Expected Major

Expected Major	Freq.	%
Accounting & Finance	69	34.5
Marketing Management	49	24.5
Regional Development	41	20.5
Applied Statistics	36	18.0
Social Enterprise Management	5	2.5
Total	200	100.0

Source: Survey Data (June, 2017)

Figure 2: Respondents' Expected Major



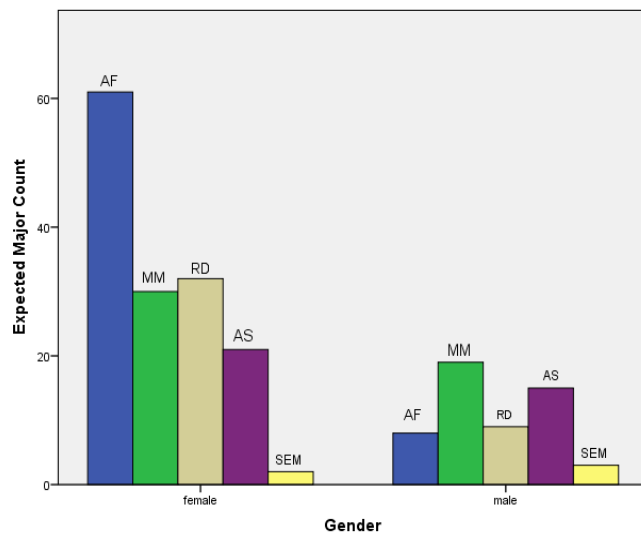
After analyzing the overall expected major of the respondents, their expectation is evaluated in terms of gender. The result is presented in Table 3 and Figure 3. The research reveals that majority of male students declared Marketing Management (35 percent), followed by Applied Statistics (28 percent), Regional Development (17 percent), Accounting and Finance (15 percent). However, among the female students, majority declared Accounting and Finance (42 percent), followed by Regional Development (22 percent), Marketing Management (21 percent), and Applied Statistics (14 percent). Thus, the study suggests that the students from TCU have different expectations in major.

Table 3: Gender and Expected Major

Major	AF		MM		RD		AS		SEM		Total
Gender	N	%	N	%	N	%	N	%	N	%	N
Male	8	15%	19	35%	9	17%	15	28%	3	5%	54
Female	61	42%	30	21%	32	22%	21	14%	2	1%	146

Source: Survey Data (June, 2017)

Figure 3: Expected major by Gender



Important Sources of Information for students in Deciding Major

The study identified the importance of information sources for students in making major choice since information is the best input for any type of decision. Using five point Likert scale, the students were asked the level of importance on given information sources. The result was reported in order of importance (from most important to least important) in Table 4. Interestingly, all sources of information listed in the study are considered important for the students in TCU. On a scale of 1-5, the midpoint is 3, and all information sources, on average, scored above the midpoint. Of the information sources listed, the source of highest importance is faculty teachers. The second highest important source is website information. This reflected that young people in the universities are familiar with information technology and they search information online for their decision making. Brochure about the major is also important information source for the students in making major choice. However, the seniors and friends, as an information source, is relatively low important in comparison with other sources.

Table 4: Importance of Information Sources

Information Sources	Average Importance
Faculty Teachers	4.395
Website	4.200
Brochure	3.975
Seniors and friends	3.675

Source: Survey Data (June 2017)

Factors that affect the Major Selection

The students are asked how much their choice of major is influenced by eleven factors listed in the study. The Cronbach's alpha for eleven items is 0.7 and it could be considered acceptable level. Then, these factors are grouped into personal factor, social encouragement factor, and future career factor. In an effort to determine the personal factor that influences students' major choice, three aspects of personal factor are given to the students to indicate the level of influence. The measurement is used on a five-point Likert scale with 1=No Influence and 5= Very Influential. As shown in Table 5, the results indicate that a high number of students 60 percent stated that personal interest in the field was very influential on their major choice while 27 percent stated somewhat influential. Academic ability to learn the subjects is found as very influential factors reported by 31 percent and somewhat influential factor reported by 43.5 percent. In addition, more than half of the students consider enjoyment the subject as the influential factor on their major choice (very influential reported by 38.5 percent and somewhat influential by 32.5 percent). The composite mean for the personal factor suggests that it has strong influence on the students' major selection in TCU (mean value=4.131 with SD=0.717).

Table 5: Personal Factor that Affects Major Selection

Variables	1	2	3	4	5
Personal Interest in the field	7 (3.5%)	1 (0.5%)	23 (11.5%)	49 (24.5%)	120 (60%)
Academic ability to learn the subjects	2 (1%)	8 (4%)	41 (20.5%)	87 (43.5%)	62 (31%)
Enjoyment the subjects	3 (1.5%)	6 (3%)	49 (24.5%)	65 (32.5%)	77 (38.5%)
Mean Value = 4.133, SD=0.717					

Source: Survey Data (June 2017)

In the study, social encouragement factor is also analyzed as a source of influence on students' major choice in TCU. The descriptive result is shown in Table 6. The composite mean value for the social encouragement factor 2.640 (lower than the midpoint value of 3 in five point Likert scale) indicates that social encouragement factor is not influential on the major choice of students in TCU. When analyzing each variable in the social encouragement factor, only 47 percent of the students consider encouragement of inspiring teachers in the major as influential factor while more than half of the students describe neutral and not influential. The study also finds that classmates suggestions is considered as influential factor (reported by only 34 percent) while the majority describe neutral and no influence. In addition,

only 22.5 percent of the students report that parental and family suggestion was influential on the major choice decision.

Table 6: Social Encouragement Factor that Affects Major Selection

Variables	1	2	3	4	5
Inspiring teachers in the major	32 (16%)	15 (7.5%)	59 (29.5%)	56 (28%)	38 (19%)
Classmates suggestion	65 (32.5%)	27 (13.5%)	40 (20.0%)	39 (19.5%)	29 (14.5%)
Parental and family suggestion	76 (38%)	27 (13.5%)	52 (26%)	31 (15.5%)	14 (7%)
Mean Value = 2.640, SD=0.841					

Source: Survey Data (June 2017)

The study also analyzes the future career factor as a source of influence on the students' major choice. Table 7 reports the descriptive result for the factor. The composite mean value for the future career factor 3.774 with SD 0.754 suggest that the students' major choice is influenced by the future career factor. When analyzing each variable in the future career factor, it is found that 37 percent of the students consider future job opportunities as very influential factor and 33 percent consider as somewhat influential factor in major choice. In addition, totally 64.5 percent of the students consider expectation of initial high salary as influential factor in major choice decision. In the study, long-term earning potential is considered as influential factor (reporting by 62.5 percent), self-employment opportunities are influential for 63.5 percent of the students, job security is influential for 59 percent of the students.

Table 7: Future Career Factor that Affects Major Selection

Variables	1	2	3	4	5
Future Job opportunities	11 (5.5%)	7 (3.5%)	42 (21%)	66 (33%)	74 (37%)
Expectation of initial high salary	6 (3%)	6 (3%)	59 (29.5%)	75 (37.5%)	54 (27%)
Long-term earnings potential	15 (7.5%)	7 (3.5%)	53 (26.5%)	70 (35%)	55 (27.5%)
Self-employment opportunities	9 (4.5%)	13 (6.5%)	51 (25.5%)	77 (38.5%)	50 (25%)
Job security	15 (7.5%)	5 (2.5%)	62 (31%)	66 (33%)	52 (26%)
Mean Value = 3.774, SD=0.754					

Source: Survey Data (June 2017)

Then, the study analyzes the level of influence of the factors on students' major choice. The composite mean for each factor influencing the students' major choice were computed and

comparison is made. Based on the scale of measurement used, the factor with the highest mean is the most influential while the lowest mean was the least influential. The results are shown in Table 8 and Figure 4. From the results, out of 11 factors presented to students, 9 factors have influence on the students' major choice while two factors are reported as not influential by the students. These two factors mainly concern with social encouragement factor. Personal interest in the field is the most influential factor (M=4.370), followed by enjoyment the subjects (M=4.035) and academic ability to learn the subjects (M=3.995). These top three factors are under the personal factor in the current study. The study also reports that future career factors are consider as second most influential factor; future job opportunities (M=3.925), expectation of initial high salary (M=3.825), self-employment opportunities (M=3.730), long-term earnings prospects (M=3.715), job security (M=3.675). However, out of three social encouragement factors, it is found that encouragement of teachers in the major has some degree of influence on the students' major choice. The other two factors are below the midpoint value of 3 in the study, thus these two factors are not considered as influential factors.

Table 8: Level of influence of the factors

Factors	Average Level of influence
Personal interest in the field	4.370
Enjoyment the subjects	4.035
Academic ability to learn the subjects	3.995
Future job opportunities	3.925
Expectation of initial high salary	3.825
Self-employment opportunities	3.730
Long-term earnings prospects	3.715
Job security	3.675
Encouragement of teachers in the major	3.265
Classmate encouragement	2.700
Parental and family encouragement	2.400

Source: Survey Data (June 2017)

The study also conducts multinomial logistic regression to examine the association of major selection with the gender, personal factor, social encouragement factor, and future career factor. This analysis is to identify the extent to which these variables predict students' major choice, as well as how these relationships differ across major. Accounting & finance major is quite popular among TCU students, therefore it is used as a reference category to check which

independent variables differentiate the students who expect accounting and finance and those who expect other major specialization. The result on model fitting information is reported in Table 9.

Table 9: Multinomial Logistic Regression Model Fitting Information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	559.516			
Final	477.363	82.154	16	.000
Likelihood Ratio Tests				
Intercept	478.284	.921	4	.922
Gender	498.246	20.883	4	.000
Personal Factor	498.268	20.905	4	.000
Social Encouragement	480.520	3.157	4	.532
Career Factor	515.443	38.080	4	.000

Source: Survey Data (June 2017)

According to Table 9, the model showed that there is a statistically significant relationship between the major choice and the combination of the predictor variables; the probability of chi-square for the model is significant at the level of 0.01. The results of the likelihood ratio test showed that gender, personal factor, and career factor have significant predictions on students' major choice ($\chi^2=20.883$, $p<.01$; $\chi^2=20.905$, $p<.01$; $\chi^2=38.080$, $p<.01$). However, social encouragement has no significant relationship with students' major choice. Table 10 showed the multinomial logistics regression parameter estimates.

In the comparison of students who declared marketing management major to those who declared accounting and finance major, gender, personal factor and career factor are statistically significant in differentiating students' major selection (Wald= 11.432, $p<0.01$; Wald=7.178, $p<0.01$; Wald=7.943, $p<0.01$). Each unit increase in gender, the odds of selecting marketing management as a major increase by 438 percent (Exp (B)=5.388). Therefore, male students were more likely to choose marketing management major than accounting and finance major. Each unit increase in personal factor, the odds of selecting marketing management as a major increase by 129 percent (Exp (B)=2.290). It can be concluded that students reported higher level of personal factor influence were more likely to choose marketing management major than accounting and finance major. However, each unit increase in career factor, the odd of selecting marketing management as a major decrease by 62 percent (Exp (B)=0.378). It suggests that students who reported high level of career influence were less likely to choose marketing management major than accounting and finance major.

Table 10: Multinomial Logistics Regression Parameter Estimates

Expected Major		B	Std. Error	Wald	df	Sig.	Exp (B)
Marketing Management	Intercept	-.733	1.668	.193	1	.661	
	Gender	1.684	.498	11.432	1	.001	5.388
	Personal Factor	.828	.309	7.178	1	.007	2.290
	Social Encouragement	.173	.260	.442	1	.506	1.188
	Career Factor	-.974	.346	7.943	1	.005	.378
Regional Development	Intercept	-.378	1.965	.037	1	.848	
	Gender	1.096	.585	3.513	1	.061	2.991
	Personal Factor	1.525	.378	16.243	1	.000	4.596
	Social Encouragement	.072	.292	.062	1	.804	1.075
	Career Factor	-1.834	.390	22.129	1	.000	.160
Applied Statistics	Intercept	.693	1.740	.158	1	.691	
	Gender	1.877	.539	12.125	1	.000	6.532
	Personal Factor	.725	.334	4.707	1	.030	2.065
	Social Encouragement	.445	.295	2.274	1	.132	1.560
	Career Factor	-1.547	.390	15.732	1	.000	.213
Social Enterprise Management	Intercept	1.797	4.260	.178	1	.673	
	Gender	3.227	1.249	6.672	1	.010	25.192
	Personal Factor	1.288	.826	2.430	1	.119	3.627
	Social Encouragement	-.427	.822	.269	1	.604	.653
	Career Factor	-2.817	.771	13.356	1	.000	.060

In the comparison of students who declared regional development major to those who declared accounting and finance major, personal factor and career factor are statistically significant in differentiating students' major selection (Wald=16.243, $p<0.01$; Wald=22.129, $p<0.01$). Each unit increase in personal factor, the odds of selecting regional development as a major increase by 360 percent (Exp (B) =4.596). It can be concluded that students reported higher level of personal factor influence are more likely to choose regional development major than accounting and finance major. However, each unit increase in career factor, the odd of selecting regional development as a major decrease by 84 percent (Exp (B) =0.160). It suggests that students who reported high level of career influence are less likely to choose regional development major than accounting and finance major.

In the comparison of students who declared applied statistics major to those who declared accounting and finance major, gender, personal factor and career factor are statistically significant in differentiating students' major selection (Wald=12.125, $p<0.01$;

Wald=4.707, $p<0.05$, Wald=15.732, $p<0.01$). Each unit increase in gender, the odds of selecting marketing management as a major increase by 553 percent (Exp (B) =6.532). Therefore, male students were more likely to choose applied statistics major than accounting and finance major. Each unit increase in personal factor, the odds of selecting applied statistics as a major increase by 107 percent (Exp (B) =2.065). It can be concluded that students reported higher level of personal factor influence were more likely to choose applied statistics major than accounting and finance major. However, each unit increase in career factor, the odd of selecting applied statistics as a major decrease by 79 percent (Exp (B) =0.213). It suggests that students who reported high level of career influence were less likely to choose applied statistics major than accounting and finance major.

In the comparison of students who declared social enterprise management major to those who declared accounting and finance major, gender, and career factor are statistically significant in differentiating students' major selection (Wald=6.672, $p<0.05$; Wald=13.356, $p<0.00$). Each unit increase in gender, the odds of selecting social enterprise management as a major increase by 2419 percent (Exp (B) =25.192). Therefore, male students were more likely to choose social enterprise management major than accounting and finance major. However, each unit increase in career factor, the odd of selecting social enterprise management as a major decrease by 94 percent (Exp (B) =0.060). It suggests that students who reported high level of career influence were less likely to choose social enterprise management major than accounting and finance major.

FINDING AND DISCUSSION OF THE STUDY

This study firstly explore the students' expected major in TCU. Then, the study analyzed the factors influencing the students' major selection. These factors are gender, personal factor, social encouragement, and career factor. To achieve the objectives of the study, primary data are collected using simple random sampling method. The study selected 200 respondents and then data are collected through structured self-completed questionnaire.

The study finds that accounting & finance major is the most popular among students in TCU, followed by marketing management, regional development, applied statistics, and social enterprise management. In terms of gender, most of the male students prefer marketing management major while most of the female students prefer accounting and finance major. This is consistent with previous research findings. Taylor Report (2000) stated that accounting majors are more likely to be female. Lowe & Simons (1997) finds that female accounting

majors ranked more important than did male accounting major. In addition, Hall (2010) reported that the individuals' career choice are influenced by gender.

Regarding information sources, most of the students consider all the sources listed in the study as important sources. Therefore, the teachers from each faculty should explain and communicate about the major to assist the decision making of students. The faculty teachers must provide career information, advice and consultation to influence the students in choosing major. This reflect that students have trust in their teachers and they rely upon teachers especially when they are far from home. In addition, most of the students considered website as important information source, thus the university should develop its own website and share information about each major, job opportunities, and university alumni and network. The study reveals that students are likely to visit the university website and sought more related information about the major. Also, each major department should provide brochure containing information about the programme; objectives, courses, outcomes, benefits, and job opportunities of the major. The university and major departments should learn how to best communicate with and inform the students undiscovered the career opportunities at the first year course.

Then the study examines the prediction of independent variables (gender, personal factor, social encouragement, and career factor) on the variation of dependent variable (students' major choice) using multinomial logistics regression. The study finds that gender, personal factor and career factors have statistically significant impact on the students' major choice. Regarding gender, male students are more likely to choose marketing management, applied statistics, and social enterprise management than accounting and finance while female students are more likely to choose accounting and finance major than other majors. However, there is no significant gender impact for students who declared accounting and finance major and those who declared regional development. The study concludes that the students who report higher personal factor influence are more likely to choose marketing management, regional development, applied statistics, and social enterprise management and those who report higher career factor influence are more likely to choose accounting and finance major.

CONCLUSION

This research is the first attempt to get insight information as to how students at TCU choose their majors and which variables have the largest effect. This study enriches to the pool of literature regarding students' major selection in universities and further enhances the

understanding of backgrounds of the students in TCU. It also provides for the university and major department some perspectives to support the students' major selection decision. TCU students reveals that they made decisions based on a combination of personal factors and career factors. This study could provide some knowledge for students to develop interest in specific major and career. For parents of the students, the study enlightens them of their role to influence their children's major and career decisions. For teachers and faculty members, the study highlights the prime role in influencing the students' major and career choice. In particular, teachers must explain the career opportunities right soon after completing the course in order to support the students' major choice in the university.

LIMITATIONS OF THE RESEARCH

Firstly, the research might have limitation in exploring the factors affecting the students' major choice since there are the other factors such as socio-economic condition, family background, financial aid, major reputation, cost of study, etc. In addition, the study mainly focuses on survey method of data collection. Thus, respondents in the study have to answer limited range of responses categories, thereby limiting the ability to obtain rich information. In addition, this study mainly covers second year students who are attending in the academic year of 2016-2017. Therefore, the limitation of the study is that it cannot cover the students from other classes and for other academic years. The future research should include socio-economic and other factors explaining the students' major choice. Similar research can be conducted in other universities to know the more accurate picture of students' major choices in universities.

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The Impact of HRM Practices on Employee Turnover Intention

**(A Case of Thanlyin Co-operative University and
Phaunggyi Co-operative College)**

Soe Soe Thaug¹

Abstract

The broad aim of the study is to investigate the impact of HRM practices on employee turnover intention in Thanlyin Co-operative University and Phaunggyi Co-operative College. 202 respondents were participated in the study. Data was collected by using survey method. The data were analyzed by using descriptive and inferential statistics. The HRM practices of the study are performance appraisal, reward, working condition, equal employment opportunity, training, and employee autonomy. The research stated that HRM practices such as reward, equal employment opportunity, training, and employee autonomy have significantly negative relationship with turnover intention although performance appraisal and working condition are not significant. The study also showed that the independent variable of employee autonomy has contribute the most and has stronger effect on the turnover intention in comparison with the all other independent variables. This research provided an opportunity to know how to develop the HRM practices and how to reduce turnover intention for many organizations including TCU and CCP.

Key Words: HRM practices, Employee Turnover Intention

1. Introduction

Human resource is the most valuable and expensive asset for any organization and it is the source of achieving competitive advantages. The success of an organization is greatly influenced by the caliber and attitude of its human resources. Without employees, organization can't operate at all. Ulah & Yasmin (2013) asserted that organizations cannot survive without its potential human resources in the current competitive business environment. Thus, every organization needs to conduct the HRM practices such as attracting, recruiting, selecting, appointing and retaining qualified employees. HRM practices refer to organizational activities directed at managing the pool of human resources and ensuring that the resources are employed towards the fulfillment of organizational goals. This paper was designed to assess HRM practices and their effect on employees' turnover intention in Thanlyin Co-operative University (TCU) and Phaunggyi Co-operative College (CCP).

¹ Associate Professor, Department of Management Studies

2. Rationale of the Study

Turnover intention is a popular topic in today. Many organizations including TCU and CCP are facing turnover intention problem. Turnover intention causes a serious problem for any organization because of losing of talents, additional employment and training costs. There are several factors which were affected the employees' turnover intention. HRM practices are one of the important factors that affected the turnover intention of employees. Turnover intention has been widely used in many researches as an appropriate dependent variable as it is linked with actual turnover.

Staff turnover can occur in any organizations, however, it may differ from one organization to another. Employee turnover rate can be used as one indicator of the business competitiveness. The high turnover rate can cause the business to lose their cost competitiveness. High turnover rate generates a significant amount of costs to the organization including costs arising during the recruiting process, training costs, and opportunity costs such as work delay during the recruiting and training process.

Thus, turnover is very pressing issue for any organization. They need to understand the general turnover rates and causes of labour turnover. Accordingly, this paper was designed to investigate how HRM practices effect employee turnover intention in Thanlyin Co-operative University (TCU) and Phaunggyi Co-operative College (CCP).

3. Objective of the Study

The objective of the study is to investigate the impact of human resources management practices on employee turnover intention in selected organizations.

4. Scope and Limitation of the Study

This study examines how HRM practices affect employee turnover intention in TCU and CCP. The independent variables of this study are HRM practices and the dependent variable is employee turnover intention. In practice, there are many types of HRM practices, however, HRM practices such as performance appraisal, reward, working condition, equal employment opportunity, training, and employee autonomy were used in this study. The study only used questionnaire to gather the data, thus, it limits to get some more information. In the future studies, focus interview method should be combined to get richer information about HRM practices and turnover intention.

5. Literature Review

5.1 Turnover intention

Turnover intention refers to the voluntary intention of employees to leave an organization. Intention to turnover refers to an individual's perceived probability of leaving an employing organization (Cotton, and Tuttle, 1986).On the other hand, Tett and Meyer, (1993) referred to turnover intentions as a conscious and deliberate willfulness to leave the organization.

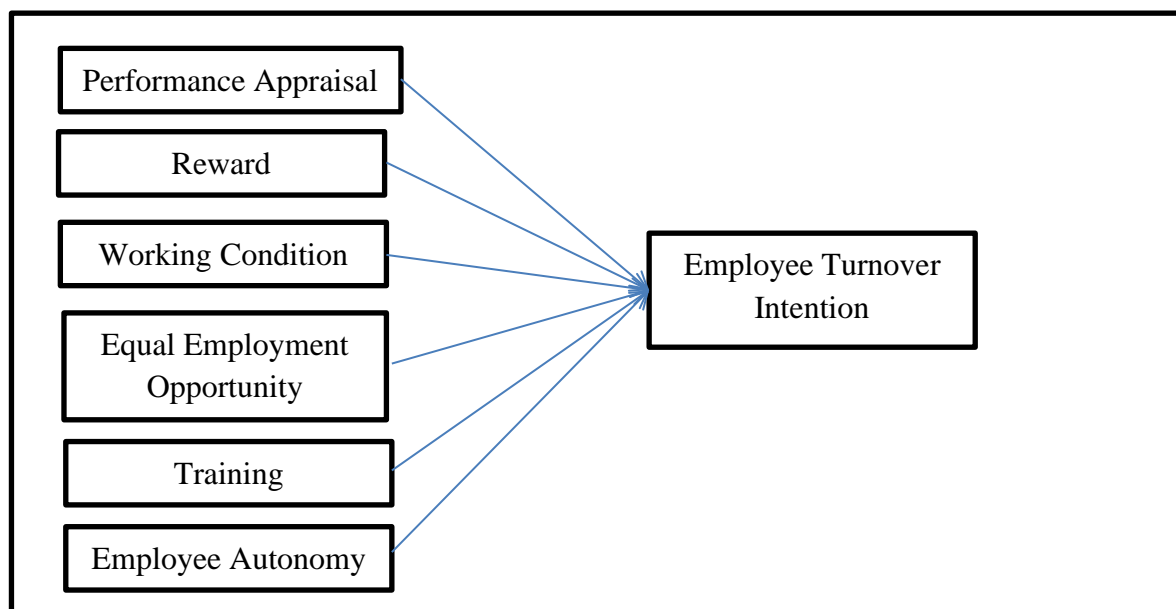
There are three essential parts of the word turnover intention in the withdrawal cognition process. The first one refers to when employees have thoughts of quitting the job, second is when employee intent to search for different jobs and the last one is when they intent to quit the job (Carmeli & Weisberg, 2006). Employee turnover causes huge cost burden for any organization. It may be direct or indirect. Training cost, hiring cost, selection cost is considered as direct cost and indirect cost include loss of reputation, low employee morale (Staw, 1980). According to Mobley WH, Horner SO & Hollingsworth AT. (1978) turnover intention is an antecedent of actual employee turnover and it is the prime important to see the reason for and causes of employee turnover intentions.

Several researchers attempted to investigate the relationship between HRM practices and turnover intention. Bergiel, E.B., Nguyel, V.Q., Clenney, B.F., & Taylor, G.S., (2009) found that HRM practices such as compensation, supervisory support, employee training, and employees' perceived growth opportunities are all negatively related to employee turnover intention. Rainayee (2013) also suggested that organizations can retain employees if they undergo good management policies. Kemer (2008) also described that organization must take care of the job factors because if employees are dissatisfied with intrinsic job factors, they may think of moving out from the organization. Fotoohnejad, Manafi, Gheshmi, Fazel, Roozbeh, and Seyedabrishami (2011) also found that a suitable HR practices could increase organizational commitment and thus it reduce turnover intention in educational industry of Iran. Juhni et al., (as cited in Chong Phei Wen, Khor Wen Huey, Lee Joo Li, Ooi Shi Ying, Tan Yee Kee, 2013) also stated that well managed HRM practices will create high commitment and lower the intention to quit. Choi S. L., Panniruky, P., and Musibau, A. A., (2012) also showed that the independent variables of the HRM practices have relationship with the dependent variable of turnover intentions. Joarder and Sharif (2011) also proved that HRM practices such as job security, compensation, job autonomy, working condition, training & development, and supervisory support are significantly correlated with employee turnover intention in private universities of Bangladesh. Chong Phei Wen, Khor Wen Huey,

Lee Joo Li, Ooi Shi Ying, Tan Yee Kee, (2013) also found that HRM practices such as performance appraisal, reward, working condition, equal employment opportunity have significant relationship with turnover intention in University Tunku Abdul Rahman (UTAR) in Malaysia. Owolabi (2012) observed that organizational justice has a great influence on employee turnover intentions. It means organization justice reduces employee turnover intentions and it also lead to the efficiency and better performance. Based on the previous literature, this study examined the impact of HRM practices such as performance appraisal, reward, working condition, equal employment opportunity, training, and employee autonomy on employee turnover intention.

Based on the literature review, the relationship between HRM practices and employee turnover intention can be conceptualized and depicted in Figure (1).

Figure (1) Conceptual Framework of the Study



5.2 Performance Appraisal

Performance appraisal is a system or process of obtaining, analyzing and recording information about the relative worth of an employee. This system able to identify the development goals and also the plan for achieve the particular goals. Performance appraisal is playing an important role in assessing employees and develops their competencies, boost performance and distribute reward (Lemba & Ismail, 2010). A good appraisal system provides right feedback about the performance of an employee. It imparts benefits not only to the employees but also on supervisors, management and organizations.

5.3 Reward

Many organizations view rewards as a means of motivating certain behaviours in employees. Specifically, rewards are intended to motivate employees to perform effectively and efficiently towards achieving organizational goals. Milkovich & Newman (2004) defined reward as all the tangible benefits and provisions an employee obtain as a part of “employment relationship”. According to the concept of six sigma, there are four categories of rewards. They are intrinsic, extrinsic, social and the organizational remuneration. Intrinsic rewards refer to internal feelings of satisfaction, involvement, growth, autonomy and self-competence an individual experience during his career (Allen RS, Takeda MB, White CS, Helms MM, 2004). Extrinsic rewards are based upon organizational participation and performance and further categorized into direct and indirect form (Westover & Taylor, 2008). Larson (2003) stated the direct reward as a “small token of appreciation” while indirect reward refers to the financial security and better future prospects. Social Rewards are associated with team based projects that reinforce the employees to interact with peers in order to obtain the shared goal outcomes. Organizational rewards refer to the probability of increased profits and productivity.

5.4 Working Condition

Working Condition is the working environment and all existing circumstances affecting labour in the workplace, including job hours, physical aspects, legal rights and responsibilities. According to the Spanish Working Condition Survey (as cited in Garcia Serrano, 2004), it also contains employee individual characteristics and also firm characteristics or characteristics related to the job of the employee such as sector, industry, size, firm, type of contract (temporary, permanent), occupation, and firm tenure, provided by the worker at the time of the survey interview.

5.5 Equal Employment Opportunity

Equal employment opportunity is the law which act as prohibition of employment discrimination which referred to age, religion, race, color, disability, sex, pregnancy, national origin, marital status and health related issues (Guchait, 2007). It means that the working environment policies, practices, behaviours and rules that are fair to every employee. All workers will be respected and valued equally by the organization. Every employee will have equal opportunity in getting promotion, reward, training, wages, retirement, responsibility, vacation, pensions, and other benefits. Thus, organization should provide equal employment

opportunity in their workplace. By doing so, any employee will try to achieve their organizational goals.

5.6 Training

“Training is systematic development of the knowledge, skills and attitudes required by an individual to perform adequately a given task or job” (Armstrong, 2001). Flippo (1984), “Training is the act of increasing knowledge and skills of an employee for doing a particular job”. Training helps in updating old talents and developing new ones. Training and development is one of the human resource practices which can help any organization to gain competitive advantages (Schuler and MacMillan, 1984). Evans and Lindsay (1999) stated that training and development can increase the quality of the employees and this will bring the advantages for the organization in the long term.

5.7 Employee Autonomy

Mrayyan (2006) defined autonomy as a context of accountability, authority and responsibility. Job autonomy, also known as task autonomy or employee autonomy can be defined as the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling work and in determining the procedures to be used in carrying it out. Job autonomy is one of several core job design characteristics (the others are skill variety, task identity, task significance and feedback from the job) developed by Hackman and Oldham (1975).

6. Research Methodology

The study employed the descriptive cross-sectional design. There were totally 316 population in selected organizations. Among them, 202 people or 64% of the total population was participated. In 202 people, 151 were from TCU and 51 from CCP. Primary data was collected by using survey method. The main instrument used for data collection was self-completed questionnaire. The questionnaire is structured based on variables found in previous studies. This study used a five point Likert scale in the questionnaire where 1 used for strongly disagree and 5 used for strongly agree. Data was analyzed using measurement of central tendencies: the mean, standard deviation, as well as frequencies, and percentages. Additionally, inferential analysis was conducted to measure and prove the relationship between dependent variable with each different independent variable.

7. Reliability statistics of the Study

Cronbach's Alpha was employed to analyse the reliability of the study. The result was reported in Table (1). The Cronbach's Alpha for performance appraisal was 0.688 which means the level of relative internal consistency and reliability result was fair situation. But, the reliability result of this variable was the lowest among all other variables. This means that all variables were having high reliability and consistency.

Table (1) The Cronbach's Alpha for all variables

Sr. No.	Variables	Cronbach's Alpha	Results of Reliability	Number of Items
1	Turnover Intention	.786	Good	5
2	Performance Appraisal	.688	Fair	5
3	Reward	.891	Very Good	5
4	Working Condition	.778	Good	4
5	Equal Employment Opportunity	.807	Very Good	5
6	Training	.881	Very Good	5
7	Employee Autonomy	.819	Very Good	5

Source: Survey Data, 2017

8. Respondent Demographic Profile

Table (2) showed that the respondents' demographic factors such as name of university, age, education level, gender, marital status, staff category, service in years. There were totally 202 respondents in the study. Among them, 151 were from TCU, 51 from CCP. Ages of respondents were being classified into five categories which were 23-29, 30-36, 37-43, 44-51 and 52 and above. Majority of the respondents were between the ages of 23-29 which were amounted 41.1% (83 people) of total amount of respondents. Followed by the category of age 30-36 which amounted 26.7% (54 people), 37-43 which was approximately 16.8% (34 people), 44-51 which was approximately 11.9% (24 people), and 52 and above was 3.5% (7 people). In education level, majority of the respondents are master degree holders. According to the gender, the numbers of female respondents were more than male respondents. In marital status, majority of the respondents were single which consisted of 136 people or 67.3% of the total respondents. There were 66 people or 32.7% of the total respondents in marriage. In staff category, 118 people or 58.4% of the total respondents were academic staff. The remainder 84 people or 41.6% were supporting staff. According to the length of services, majority of the respondents were under 5 years which were amounted

46.5% (94 people). The rest 5-10, 11-20, and 21 and above were 23.3% (47 people), 24.8% (50 people), and 5.4% (11 people) respectively.

Table (2) Demographic Factors of the Respondents

Particulars	N	%	Particulars	N	%
University			Gender		
Thanlyin	151	74.8	Female	178	88.1
Phaunggyi	51	25.2	Male	24	11.9
Age			Marital Status		
23-29	83	41.1	No	136	67.3
30-36	54	26.7	Yes	66	32.7
37-43	34	16.8	Staff Category		
44-51	24	11.9	Academic Staff	118	58.4
52 and above	7	3.5	Supporting Staff	84	41.6
Education Level			Service in Years		
Doctorate	6	3	Under 5 years	94	46.5
Master	113	55.9	5 to 10	47	23.3
Bachelor	71	35.2	11 to 20	50	24.8
Others	12	5.9	21 and above	11	5.4

Source: Survey Data, 2017

9. Analysis of Intention to quit

Central tendencies measurement is used to discover the mean score for turnover intention. Table (3) showed on how to respond about turnover intention by the respondents. Referring to the table, the mean score for each item ranges between 2.36 and 3.84, implying that the respondents have some degree of variation across the intention items. The overall mean value of 2.99 suggested that respondents have no high level of intention to quit from the organization.

Table (3) Descriptive Statistics for Turnover Intention

Statements	SD	D	N	A	SA	Mean (SD)
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	
1. I often think about quitting my job.	14 (6.9%)	41 (20.3%)	69 (34.2%)	50 (24.8%)	28 (13.9%)	3.18 1.12
2. I currently look for a job outside my organization.	40 (19.8%)	80 (39.6%)	61 (30.2%)	12 (5.9%)	9 (4.5%)	2.36 1.00
3. I will leave this organization if I could find a similar position at another organization.	27 (13.4%)	42 (20.8%)	48 (23.8%)	52 (25.7%)	33 (16.3%)	3.11 1.28
4. It is very possible that I will look for a new job within next year.	37 (18.3%)	75 (37.1%)	56 (27.7%)	19 (9.4%)	15 (7.4%)	2.51 1.12
5. If I may choose again, I will never choose to work for the organization.	17 (8.4%)	24 (11.9%)	20 (9.9%)	55 (27.2%)	86 (42.6%)	3.84 1.32
Overall						2.99 0.86

Source: Survey Data, 2017

This study also analyzed the intention to quit of respondents in term of gender variable using simple independent sample t test. The result was reported in Table (4). The mean score of male respondents was relatively higher than that of female respondents. However, p value is above 0.05 in the study, thus it was found that there is no significant difference in intention to quit between male and female respondents.

Table (4) Intention to quit by Gender

Gender	N	Mean	SD
Female	178	2.97	0.84
Male	24	3.22	1.03
t=-1.126; p = .270			

Source: Survey Data, 2017

The study also analyzed the intention to quit of respondents in term of age group using One-Way ANOVA. The result reported in Table (5).

Table (5) Intention to quit by Age Group

Age Group	N	Mean	SD
23-29	83	3.09	0.86
30-36	54	3.19	0.88
37-43	34	2.72	0.71
44-51	24	2.83	0.95
52-59	7	2.34	0.57
F= 3.227; p= .014			

Source: Survey Data, 2017

The result showed that p value is less than 0.05. It implied that there is significant difference in intention to quit between age group. The respondents whose ages between 30-36 have the highest intention to quit while the respondents whose ages between 52-59 have the lowest intention to quit. Thus, the organization should pay attention to those staffs aged 30 to 36 in order to keep the organization's turnover intention level.

The study also analyzed the intention to quit in term of education level using One-Way ANOVA. The result reported in Table (6) showed that p value is above 0.05, thus it was found that there is no significant difference in intention to quit between education levels.

Table (6) Intention to quit by Education Level

Education Level	N	Mean	SD
Doctorate	6	2.93	1.08
master	113	3.08	0.86
bachelor	71	2.93	0.86
others	12	2.63	0.76
F= 1.218; p= .304			

Source: Survey Data, 2017

The study also analyzed the intention to quit in term of marital status using simple independent sample t test. The result was reported in Table (7). The mean value of single respondents is more than that of married respondents. However, p value is above 0.05 in the study, it was found that there is no significant difference in intention to quit between single and married respondents.

Table (7) Intention to quit by Marital Status

Marital Status	N	Mean	SD
No	136	3.04	0.88
Yes	66	2.91	0.82
t=1.081; p= .282			

Source: Survey Data, 2017

This study also analyzed the intention to quit in term of staff category using simple independent sample t test. The result was reported in Table (8). In this study, p value is less than 0.05 which was implied that there is significant difference in intention to quit between staff category. The intention to quit of academic staff is higher than that of supporting staff. Thus, the organization should pay attention to academic staffs in order to keep the organization's turnover intention level.

Table (8) Intention to quit by Staff Category

Staff Category	N	Mean	SD
Academic Staff	118	3.11	0.87
Supporting Staff	84	2.84	0.83
t= 2.227; p= 0.027			

Source: Survey Data, 2017

This study also analyzed the intention to quit in term of service in years using One-Way ANOVA. The result was reported in Table (9). In this study, the mean score of the respondents is neutral. Then, p value is above 0.05. It implied that there is no significant difference in intention to quit between four groups of services in years.

Table (9) Intention to quit by Service in Years

Service in years	N	Mean	SD
under 5 years	94	3.07	0.85
5 to 10	47	3.10	0.99
11-20	50	2.83	0.77
21 and above	11	2.76	0.71
F= 1.327; p= .267			

Source: Survey Data, 2017

10. Analysis of HRM practices

The study also analyzed how respondents perceived the HRM practices of their organization. For this purpose, measurement of central tendencies is used to discover the mean score for HRM practices. The higher mean score (above the midpoint 3) implies that the respondents have favourable attitude and perception on the HRM practices of their organization. In the current study, performance appraisal, reward, working condition, equal employment opportunity, training, and employee autonomy practices are explored. Table (10) showed that the mean value for each HRM practice ranges between 3.00 and 3.57, implying that the respondents have some degree variation across them.

Table (10) Descriptive Statistics for HRM practices

HRM Practices	Mean	SD
Performance Appraisal	3.31	0.56
Reward	3.18	0.77
Working Condition	3.57	0.68
Equal Employment Opportunity	3.18	0.64
Training	3.26	0.74
Employee Autonomy	3.00	0.70

Source: Survey Data, 2017

The overall mean value of 3.31 suggested that respondents have some degree of satisfaction on the organisation's performance appraisal system. They agreed that they get the feedback and their strength & weakness from the system in practice. The overall mean value was 3.18 suggested that there is some degree of acceptance on the organization's reward

system. The overall mean value was 3.57, implying that respondents have favourable perception on the organization's working condition. The overall mean value was 3.18 suggested that respondents satisfied to some extent on the organization's equal employment opportunity practices. The overall mean value was 3.26, implying that there is some degree of favourable attitude on the organization's training and development practices. The overall mean value was 3.00, implying that there is low level of acceptance on the organization's autonomy practice. Among the six practices, working condition practice had scored the most and employee autonomy scored the least. Thus, the study concluded that staffs from TCU and CCP have considerably favourable perception and attitude on the working condition practice while they have low attitude and perception on the employee autonomy practice.

11. Relationship between HRM practices and Employee Turnover Intention

This study employed Pearson correlation test to discover the relationship between HRM practices and employee turnover intention. The result was reported in Table (11).

Table (11) Pearson Correlation Test for all variables

Variables	TI	PA	R	WC	EEO	T	EA
Turnover Intention (TI)	1						
Performance Appraisal(PA)	-0.074	1					
Reward (R)	-0.203**	0.482**	1				
Working Condition (WC)	-0.097	0.408**	0.389**	1			
Equal Employment Opportunity (EEO)	-0.186**	0.416**	0.568**	0.505**	1		
Training (T)	-0.218**	0.405**	0.429**	0.517**	0.628**	1	
Employee Autonomy (EA)	-0.279**	0.391**	0.401**	0.346**	0.531**	0.561**	1

** Correlation is significant at the 0.05 level (2-tailed)

Source: Survey Data, 2017

According to result, correlation values of all variables were negative in this study. This proved that all of the variables have the negative relationship with turnover intention. However, p values of performance appraisal and working condition were above 0.05, implying that there is no significant relationship between both of the variables and employee turnover intention. It is found that there can have high level of intention to quit although performance system and working condition were good situation.

12. The Impact of HRM Practices on Employee Turnover Intention

This study used multiple regression method to analyse the impact of HRM Practices on employee turnover intention. The result was reported in Table 12.

Table (12) Prediction of Turnover Intention by HRM practices

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.968	.410		9.671	.000
Performance appraisal	.157	.126	.102	1.239	.217
Reward	-.161	.098	-.143	-1.632	.104
Working Condition	.049	.107	.039	.460	.646
Equal Employment Opportunity	.025	.136	.019	.186	.853
Training	-.119	.114	-.101	-1.043	.298
Employee Autonomy	-.281	.107	-.228	-2.632	.009
R=0.317					
R ² =.10					
F-value=3.622					
p=.002					

Source: Survey Data, 2017

According to the model summary, the R square value (0.10) means that 10% of dependent variable of turnover intention can be explained by the six independent variables such as performance appraisal, reward, working condition, equal employment opportunity, training, and employee autonomy. It will conclude that the remainder 90% of dependent variable of turnover intention is explained by other potential factors that have not been considered in this study. According to the ANOVA, the p value was less than 0.05. Therefore, the value of F-statistics was significant at 3.622.

According to the multiple regression coefficients, the p value of employee autonomy is less than 0.05 and all other independent variables are above 0.05 in this study. The result clearly shows that employee autonomy has negative relation with employee turnover intention. Moreover, the beta value of employee autonomy was the highest negative among all other independent variables. The beta value of employee autonomy was -0.228. This means that every increase of 1 unit of employee autonomy will cause the decrease of 0.228units in turnover intention. The study concluded that the independent variable of

employee autonomy has contributed the most and has stronger effect on the turnover intention. Therefore, this organization needs to pay attention to employee autonomy problem in order to keep the organization's turnover intention level.

13. Conclusion

The purpose of this study is to investigate the impact of HRM practices on employee turnover intention in TCU and CCP. This study focused mainly on whether the HRM practices have direct effect on the turnover intention among employees in TCU and CCP. The independent variable of the study are HRM practices such as performance appraisal, reward, working condition, equal employment opportunity, training and employee autonomy. There were either positive or negative relationship between independent variables and dependent variable (employee turnover intention) based on the previous literature reviewed. From the result of the study, HRM practices have negative relationship with turnover intention. This means that if HRM practices are accepted by employees, turnover intention will be low. This study also found that 43.6 percent (88 people) of the respondents had the intention to quit, implying that there was high turnover intention rate among employees in TCU and CCP. Besides that, the study also showed that the independent variable which is employee autonomy is the main reason which caused employees to have the intention to quit. This means that the independent variable of employee autonomy has contribute the most and has stronger effect toward the turnover intention in comparison with the all other independent variables. Therefore, this organization needs to pay attention to employee autonomy problem in order to keep the organization's turnover intention level.

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မြန်မာမှုဆိုင်ရာ အတိုကောက်စကားလုံးအသုံးပြုမှုများ

မြေသန့်

စာတမ်းအကျဉ်း

ဤစာတမ်းတွင် မြန်မာဘာသာစကား၌ အသုံးပြုလျက်ရှိသော မြန်မာမှုဆိုင်ရာအတိုကောက် စကားလုံးများအကြောင်းကို ဘာသာဗေဒအမြင်နှင့်အတ္ထုဗေဒအမြင်တို့ပေါင်းစပ်ကာလေ့လာ ဖော်ထုတ်တင်ပြထားပါသည်။ ဤသို့တင်ပြရာတွင် မြန်မာတို့အစဉ်အလာအားဖြင့် အသုံးပြု နေသောအတိုကောက်စကားလုံးများအကြောင်းကို ခေတ်အဆက်ဆက်အသုံးများနှင့် နှုတ်ပြော စကားများမှလည်းကောင်း၊ သတင်းစာ ဂျာနယ် မဂ္ဂဇင်းများမှ လည်းကောင်း၊ လူမှုကွန်ရက် တစ်ခုဖြစ်သော အင်တာနက်မှလည်းကောင်း ဖော်ထုတ်တင်ပြထားပါသည်။

သော့ချက်ဝေါဟာရများ- အတိုကောက်၊ စကားလုံး၊ မြန်မာမှု၊ အစဉ်အလာ၊ နေ့စဉ်သုံး

နိဒါန်း

ဘာသာစကား၏ သဘောသဘာဝအရ အချိန်ကာလပြောင်းလဲမှုကြောင့်လည်းကောင်း၊ မှတ်တမ်း တင်ရာတွင် လွယ်ကူစေရန်အတွက်လည်းကောင်း၊ ဘာသာစကားဆက်သွယ်မှုပိုမိုလျင်မြန်စေရန် လည်းကောင်း၊ ပတ်ဝန်းကျင်အခြေအနေအရ လျှို့ဝှက်သည့်အနေဖြင့်လည်းကောင်း၊ ရှည်လျားစွာ မသုံးလို၍လည်းကောင်း၊ တိုတိုနှင့်ထိထိမိမိ ပြောလို၍လည်းကောင်း စကားလုံးများကို အတိုကောက်ပြုလုပ်ကာ အသုံးပြုကြကြောင်း တွေ့ရပါသည်။

အတိုကောက်စကားလုံးအသုံးပြုခြင်းက ပုဂံခေတ်ကျောက်စာများမှစ၍ ယနေ့မျက်မှောက် ခေတ် သတင်းစာ၊ ဂျာနယ်၊ မဂ္ဂဇင်းများအထိတွေ့ရပါသည်။ အတိုကောက်စကားလုံးဟုဆိုရာတွင် အရေးဘာသာစကားနှင့် အပြောဘာသာစကားနှစ်ခုလုံးတွင်ရှိသော နေရာကိုလျော့နည်းစေသည့် စကားလုံးများ၊ ရတ်ဆိုရာတွင်အားစိုက်ထုတ်မှုကိုသက်သာစေသည့်စကားလုံးများ၊ အချိန်တိုတိုဖြင့် ထိထိရောက်ရောက် ပြောဆိုရေးသားနိုင်သည့် စကားလုံးများကို ဆိုလိုခြင်းဖြစ်ပါသည်။

အတိုကောက်စကားလုံး အသုံးပြုမှုသည် ဘာသာစကားတစ်ခုရှိ စကားလုံးသစ်ဖွံ့ဖြိုးမှုကို အထောက်အကူပြုစေပါသည်။ အတိုကောက်စကားလုံးများကို စာကြီးပေကြီးများတွင် အတွေ့ရ နည်းသော်လည်း အပြောတွင်မူ နေ့စဉ်နှင့်အမျှ တွင်တွင်ကျယ်ကျယ် အသုံးပြုလျက်ရှိပါသည်။ 'ကမ္ဘာကြီးသည် ရွာကြီးတစ်ရွာဖြစ်သည်'ဟူသော ယနေ့ခေတ်တွင် ဆက်သွယ်မနည်းပညာများ ကျယ်ကျယ်ပြန့်ပြန့် ထွန်းကားလာသည်နှင့်အတူ အတိုကောက်စကားလုံးများ၏ အခန်းကဏ္ဍမှာ လည်း ကျယ်ပြန့်လာပါသည်။ တယ်လီဖုန်းများဖြင့် စာများ၊ သတင်းများ ပေးပို့ရာတွင် အတိုကောက်များကို အမျိုးမျိုးအဖုံဖုံပြုလုပ်၍အသုံးပြုကြသည်ကိုတွေ့ရပါသည်။ အတိုကောက် အသုံးများကိုမသိလျှင် ခေတ်တစ်ခေတ် နောက်ကျကျန်ခဲ့နိုင်သည်ဟုပင် ဆိုရလောက်အောင် အတိုကောက်အသုံးပြုမှုသည် တွင်ကျယ်လျက်ရှိပါသည်။

သို့ဖြစ်၍ ဘာသာစကားဆက်သွယ်ရေးတွင် အမှုမဲ့အမှတ်မဲ့အသုံးပြုရာမှလူမှုဆက်ဆံရေး

တွင် အရေးပါလာသော အတိုကောက်စကားလုံးများကို လေ့လာခြင်းဖြင့် မြန်မာဘာသာစကား၏ သဘောသဘာဝကို ပို၍ကျယ်ကျယ်ပြန့်ပြန့်သိရစေနိုင်ရန်ရည်ရွယ်၍ ဤစာတမ်းက ဘာသာဗေဒ နှင့် အတ္ထုဗေဒရှုထောင့်တို့မှ သုတေသနပြုလုပ်ကာ လေ့လာတင်ပြခြင်း ဖြစ်ပါသည်။

အတိုကောက်စကားလုံးများအသုံးပြုပုံကို စာတမ်းတစ်စောင်အဖြစ်ပြုစုရန် ရွေးချယ်ခဲ့ရခြင်းမှာ ပတ်ဝန်းကျင်တွင် နေ့စဉ်နှင့်အမျှကြားမြင်နေရသော အတိုကောက်စကားလုံးများ၏ အဓိပ္ပာယ်အပြည့်အစုံကို စူးစမ်းလေ့လာမိရာမှ ဆက်လက်သုတေသနပြုလုပ်လိုခဲ့ခြင်းဖြစ်ပါသည်။

သုတေသနပြုရာတွင် ခေတ်အဆက်ဆက် မှတ်တမ်းတင် ရေးသားခဲ့ကြသော စာပေများ၊ ခေတ်ကိုထင်ဟပ်အောင်ရေးသားလေ့ရှိသော သတင်းစာ၊ ဂျာနယ်၊ မဂ္ဂဇင်းများနှင့် ဆက်သွယ်မှု မီဒီယာများအပြင် နှုတ်တက်ဆောင်မှတ်သားလေ့ရှိသော အချက်အလက်များ၊ ခိုင်မာသော အကိုးအကားများနှင့် လူမှုပတ်ဝန်းကျင်တွင် နေ့စဉ် ပြောဆို ရေးသားနေသော စကားသုံးများ၊ စိုက်ထူထားသော ဆိုင်းဘုတ်များကို အလေ့လာခံနယ်ပယ်အဖြစ် သတ်မှတ်လေ့လာခဲ့ပါသည်။

‘မြန်မာမှုဆိုင်ရာ အတိုကောက်စကားလုံးများ အသုံးပြုပုံ’ စာတမ်းတွင် အတိုကောက် စကားလုံးများ၏ အဓိပ္ပာယ်ကားအဘယ်နည်း။ အတိုကောက်စကားလုံး အသုံးပြုခြင်းဖြင့် အကျိုး သက်ရောက်မှုမည်မျှရှိသနည်း။ ဟူသောမေးခွန်းများအပေါ် အခြေခံ၍ လေ့လာခဲ့ပါသည်။ အတိုကောက်စကားလုံးနှင့်ပတ်သက်၍ သီးသီးသန့်သန့်လေ့လာမှုကို ယခင်က မည်သူမျှမလုပ်ခဲ့ ကြဘူးသော်လည်း မြန်မာဘာသာစကားဖွံ့ဖြိုးမှုကို လေ့လာတင်ပြထားသော စာတမ်းမားနှင့်ကျမ်း များတွင်မူ အစိတ်အပိုင်းတစ်ခုအဖြစ် လေ့လာတင်ပြထားသည်ကို တွေ့ရပါသည်။

ဤစာတမ်းတွင်မူ မြန်မာမှုဆိုင်ရာ အစဉ်အလာအရအတိုကောက်အသုံးများနှင့် လူမှု ပတ်ဝန်းကျင်တွင် နေ့စဉ်တွေ့နေကြားနေရသော အတိုကောက်အသုံးများကို ခွဲခြားဖော်ပြထား သည်ကို တွေ့ရမည်ဖြစ်ပါသည်။

၁။ မြန်မာမှုဆိုင်ရာ အတိုကောက်စကားလုံး အသုံးပြုမှုများ

မြန်မာဘာသာစကားတွင် အကြောင်းအရာအမေးမျိုးအတွက် ပြောဆိုရေးသားရာ၌ အချိန်နှင့် နေရာ လျော့နည်းစေရန်၊ စကားသံဖြစ်အင်္ဂါများ၏အားစိုက်ထုတ်မှုသက်သာစေရန်၊ မှတမိလွယ်စေရန်နှင့် နှုတ်အာသွက်လက်စေရန် အတိုကောက်စကားလုံးများကို အသုံးပြုလေ့ရှိကြပါသည်။ အသုံးပြုရာ တွင် မြန်မာတို့၏အစဉ်အလာအရ အသုံးပြုခဲ့ကြသော အတိုကောက်စကားလုံးများနှင့် လူမှု ပတ်ဝန်းကျင်တွင် နေ့စဉ်အသုံးပြုလျက်ရှိသော အတိုကောက်စကားလုံးများဟူ၍ နှစ်မျိုးသုံး ကြောင်း တွေ့ရပါသည်။

မြန်မာဘာသာစကားတွင် အတိုကောက်စကားလုံး စတင်အသုံးပြုပုံနှင့်ပတ်သက်၍

“အကျဉ်းချုံးရေးနည်းကို မြန်မာစာပေပေါ်စ ပုဂံခေတ်ကပင်လျှင် မှတ်တမ်းတင် စာပေဝင် တွင်တွင်ကျယ်ကျယ်သုံးခဲ့ကြပြီး ယခုခေတ်ဤအကျဉ်းချုံးရေးသားနည်း မျိုးကို စာကြီးပေကြီးများတွင် ရေးလေပုံနှိပ်လေ့မရှိပါ။ တစ်ဦးနှင့်တစ်ဦး ရင်းရင်း

နှီးနှီး ဆက်ဆံရာမှာလည်းကောင်း၊ မှတ်စုမှတ်ရာအချိန်လှ၍ ရေးရာမှာ လည်းကောင်း သုံးလေ့သုံးထ ရှိပါသည်။”^၁

ဟူ၍ ‘မြန်မာဘာသာစကားမြန်မာကျောက်စာဆောင်းပါးများ’တွင် ဆိုထားသည်ကို တွေ့ရပါသည်။

ထို့ကြောင့် ဘာသာစကား အသုံးပြုပြောဆိုသူတို့သည် စကားပြောဆိုရေးသားသည့်အခါ အချိန်သက်သာစေရန်လည်းကောင်း၊ အားထုတ်မှုကိုချွေတာသည့်အနေဖြင့်လည်းကောင်း စကားလုံး များကို ဖြတ်တောက်၍တစ်မျိုး၊ အသွင်ပြောင်း၍တစ်ဖုံတိုအောင်ပြုလုပ်ကာ အသုံးပြုခြင်းဖြစ်သည် ဟု ယူဆရပါသည်။

မြန်မာမှုဆိုသည်မှာ “မြန်မာ့ယဉ်ကျေးမှုနှင့်ဆိုင်သော အကြောင်းအရာ ဓလေ့”^၂ ဟု ဖွင့်ဆို ထားသည်ကိုတွေ့ရပါသည်။ ‘အစဉ်အလာ’ ဆိုသည်မှာ ‘အစဉ်အဆက်။ အစဉ်အဆက် ကျင့်သုံး လာသောဓလေ့ထုံးစံ။’ဟုဆိုပါသည်။ ထို့ကြောင့် မြန်မာမှုဆိုရာ အတိုကောက်စကားလုံးဟု ဆိုရာတွင် မြန်မာတို့၏အစဉ်အဆက်ပြောဆိုကျင့်သုံးလာသော အတိုကောက်စကားလုံးများနှင့် မျက်မှောက်အခြေအနေတွင် လူမှုပတ်ဝန်းကျင်၌ ပြောဆိုရေးသားနေဆဲ အတိုကောက်စကားလုံး များအားလုံးကိုဆိုနိုင်ပါသည်။

သို့ဖြစ်၍ ‘မြန်မာမှုဆိုရာ အတိုကောက်စကားလုံးအသုံးပြုမှုများ’ဟူသော ဤစာတမ်းတွင် အစဉ်အလာအရ မြန်မာမှုဆိုရာအတိုကောက်စကားလုံးအသုံးပြုမှုများနှင့် နေ့စဉ်လူမှုပတ်ဝန်းကျင် ဆိုင်ရာ အတိုကောက်စကားလုံးအသုံးပြုမှုများ ဟူ၍ (၂)ပိုင်းခွဲကာ တင်ပြထားပါသည်။

၂။ အစဉ်အလာအရ မြန်မာမှုဆိုရာ အတိုကောက်စကားလုံးအသုံးပြုမှုများ

ရှေးမြန်မာကြီးတို့သည် မိမိတို့ပြောဆိုရေးသားနေသောစကားလုံးများနှင့် အကြောင်းအရာအမျိုးမျိုး ကို တိုတိုနှင့်ထိထိမိမိအသုံးပြုနိုင်စေရန် အတိုကောက်စကားလုံးများကို အသုံးပြုရေးသား ပြောဆို လာကြသည်မှာ ပုဂံခေတ်ကတည်းကပင် ဖြစ်ပါသည်။

၂။ ၁။ အက္ခရာဆင့်၍ အတိုကောက်အသုံးပြုမှုများ

မြန်မာဘာသာစကားစတင်ချိန် ပုဂံခေတ်ကပင် မြန်မာပညာရှိကြီးများသည် အလှူမှတ်တမ်းတင် ကျောက်စာများ ရေးထိုးရာတွင် ကျောက်စာချပ်အနေအထားအရ နေရာကိုချို့သည့်အနေဖြင့် အက္ခရာတို့ကိုဆင့်၍ အတိုကောက်စကားလုံးများ ရေးသားအသုံးပြုခဲ့ကြကြောင်း တွေ့ရပါသည်။

သာဓကအားဖြင့် တင်ပြရလျှင် ‘ခုယ်ဝက်တြိစ္ဆန်အပ္ပဗ္ဗန်နှင့် ဖြစ်စိယံ (ခွေးဝက်တိရစ္ဆာန် အဖြစ်နှင့် ဖြစ်စေ)’၊ ‘နတ္ထဝိဇ္ဇန်သုဗျက် (နတ်တော်လဆန်းသုံးရက်)’၊ ‘ခရီး’ ကို ‘ခြီး’၊ ‘ဆရာ’ ကို ‘ဆြာ’၊ ‘သမား’ ကို ‘သွား’၊ ‘သမီး’ ကို ‘သွီး’၊ ‘သခင်’ ကို ‘သွင်’၊ ‘လက်ဖက်’ ကို ‘လွက်’၊

^၁ သန်းဆွေ၊ ဒေါ်၊ ၁၉၈၀၊ ၃၄၁။

^၂ မြန်မာစာအဖွဲ့၊ ၂၀၀၈၊ ၂၉၂။

‘လက်ယာ’ ကို ‘လက်ျာ’၊ ‘ဂါထာ’ ကို ‘ဂွါ’ စသည်ဖြင့် နေရာအနေအထားအရချို့သည့်အနေဖြင့် အက္ခရာစာလုံး ဆင့်ကာ အတိုကောက်ရေးသားထားသည်ကို တွေ့ရပါသည်။

၂၊ ၂။ ကိန်းဂဏန်းများဖြင့် အစားထိုး၍ အတိုကောက်အသုံးပြုမှုများ

အတိုကောက်စကားလုံးအသုံးပြုမှုတွင် ကိန်းဂဏန်းများဖြင့်အစားထိုးကာ စကားလုံးများကိုလျှော့၍ လည်းကောင်း၊ စကားလုံးမလျှော့ဘဲ နေရာကိုချို့စေလို၍လည်းကောင်း အတိုကောက်စကားလုံး များကို ရေးသားအသုံးပြုခဲ့ကြသည်ကိုလည်း တွေ့ရပါသည်။

သာဓကအားဖြင့် တင်ပြရလျှင် ‘၁ချက်၂နိယံ (တစ်ရက် တနင်္လာနေ့)’၊ ‘၅ နိယံ (ကြာသပတေးနေ့)’ စသည်ဖြင့် နေ့နံအစား ကိန်းဂဏန်း အစားထိုး၍လည်းကောင်း၊ ‘အဖွဲ့၂ (အဖြစ်ဖြစ်)’၊ ‘ကောက်၂ စင်၂ (ကောက်ကောက်စင်စင်)’၊ ‘မုန့်၂ ညက်၂ (မုန့်မုန့်ညက်ညက်)’ စသည်ဖြင့် အနက်တူနှစ်ထပ်ပြုစကားလုံးအစား ဂဏန်း ၂ ရေးထိုး၍ လည်းကောင်း၊ ‘(၁၃)၂ တေ (တစ်ခုတစ်ခုတေး)’၊ ‘တစ်တင်း၂ (တစ်တင်းတင်း)’ စသည်ဖြင့် အနက်တူစကားလုံးနှစ်လုံးတွဲ အစား ၂ ဂဏန်းဖြင့်လည်းကောင်း ရေးသားထားပုံများကို တွေ့ရပါသည်။

ဤသို့ဖြင့် မြန်မာစာပေအစဖြစ်သော ပုဂံခေတ်ထိုး ကျောက်စာများတွင် စာလုံးဆင့် ရေးခြင်းနှင့် ၂ ဂဏန်းအစားထိုး၍ ရေးသားထားခြင်းတို့သည် ရှေးမြန်မာကြီးများ၏ မြန်မာမှုပြု ထားသော အတိုကောက်ရေးနည်းဟု ဆိုနိုင်ပါသည်။ ယခုအချိန်ထိ မှတ်စုတို့ ရေးသားရာတင် အကြိမ်ထပ်စကားလုံးများကို အသုံးပြုလျှင် ကိန်းဂဏန်း ၂ ဖြင့် အစားထိုးရေးခြင်းကို ဆက်လက် ၍ တွင်ကျယ်စွာ အသုံးပြုလျက်ရှိကြောင်း တွေ့ရှိရပါသည်။

၂၊ ၃။ ဗျည်းလျှော့၍ အတိုကောက်အသုံးပြုမှုများ

ပုဂံခေတ်၊ ပင်းယခေတ်များမှစ၍ ပေါ်ပေါက်လာသော ပေစာများရေးသားထားပုံကို ကြည့်လျှင် ဗျည်းအက္ခရာများကိုလျှော့၍ အတိုကောက်စကားလုံး အသုံးပြုရေးသားကြသည်ကို တွေ့ရပါသည်။ ဤသို့သော အတိုကောက်စကားလုံး အသုံးပြုမှုမျိုးကို အရေးဘာသာစကားတွင်သာ တွေ့ရပြီး အပြောဘာသာ စကားတွင်မူ အရှိအတိုင်းအသုံးပြုကြသည်ကို တွေ့ရပါသည်။

သာဓကအားဖြင့် ‘သက္ကရာဇ်’ ကို ‘သကြဇ်’၊ ‘သွေးသောက်’ ကို ‘သွောံ’၊ ‘လက်နက်’ ကို ‘လံ့’၊ ‘၁ အင်္ဂါ’ ကို ‘ဒါ’၊ ‘၄ ချပ်’ ကို ‘ငှ’၊ ‘၁ပိဿာ’ ကို ‘၁ါ’ ဟုလည်းကောင်း၊ ‘တောင်၊ ထွာ၊ မိုက်၊ လက်သစ်’ တို့ကို ရေးသောအခါ ‘တောင်’ ကို အဆုံးက ‘င’ သာယူပြီး ‘ဒံ (တစ်ထောင်)’၊ ‘ထွာ’ ကို ဝဆွဲရေးချသာယူပြီး ‘ဥာ(တစ်ထွာ)’၊ ‘မိုက်’ ကို လုံးကြီးတင်သာယူပြီး ‘ဒိ(တစ်မိုက်)’၊ ‘လက်သစ်’ ကို သေးသေးတင်ဖြင့် ‘ဝံ (တစ်လက်သစ်)’ဟု ဗျည်းလျှော့၍ အတိုကောက်ရေးကြကြောင်း တွေ့ရပါသည်။ ထိုသို့သော အသုံးများကို လွယ်ကူစွာ မှတ်မိစေရန်

“ကျပ်စိတ်မိုက်တွင်၊ လုံးကြီးတင်၊ မြပင်မှတ်ကုန်ဘိ။
 လက်သစ်မတ်လံ၊ သေးတင်ပြန်၊ ဧကန်မှတ်အပ်၏။
 တင်းနှင့်တောင်းတွင်၊ ကင်းစီးတင်၊ မှန်ပင်မယွင်းသိ။
 ရေးချပြီးခါ၊ ကင်းစီးပါ၊ အင်္ဂါခေါ်အပ်၏။
 တစ်ချပ်တစ်လံ၊ ခေါ်ဝေါ်ဟန်၊ ရေးရန်သေးတင်ဘိ။
 ပြည်မှာမူကား၊ တံခွန်လွှား၊ အများမှတ်ကုန်ဘိ။
 မောက်ချပ်သာ၊ ရေးဝေါဟာ၊ တထာဤနည်းသိ”

ဟု နေရာအနေအထား လျော့နည်းသွားစေရန်အတွက် ရှေးမြန်မာကြီးများက ဗျည်းများလျှော့၍ ဖန်တီးရေးသားခဲ့ကြောင်း ဤအတိုကောက်ရေးနည်း စာချိုးလင်္ကာဖြင့် သိနိုင်ပါသည်။

ထို့ပြင် ‘သည်’ ကို ‘သ်’၊ ‘မည်’ ကို ‘မ်’၊ ‘တည်း’ ကို ‘တ်’၊ ‘နည်း’ ကို ‘န်’၊ ‘ပစ္စည်း’ ကို ‘ပဉ်’ ဟု ဗျည်းအက္ခရာများချို့ကာ အတိုကောက်ရေးသားထားသည်များကို ပေစာ၊ ပုရပိုက်စာများတွင် တွေ့ရပါသည်။ ယနေ့ခေတ်တွင်မူ ထိုသို့သော အတိုရေးနည်းများကို အချို့အကြောင်းအရာများတွင်သာတွေ့ရပြီး အသုံးမတွင်ကျယ်တော့ကြောင်း သိရပါသည်။

၂။ ၄။ စကားလုံးလျှော့၍ အတိုကောက်အသုံးပြုမှုများ

အတိုကောက်စကားလုံးဖန်တီးမှုတွင် စကားလုံးများကို အရှိအတိုင်းရေးသားပြောဆိုခြင်း မပြုဘဲ စကားလုံးများကိုလျှော့၍ အတိုကောက်စကားလုံးအသုံးပြုမှုကိုလည်း တွေ့ရပါသည်။

အင်းဝခေတ်စာဆိုကျော် ရှင်မဟာရဋ္ဌသာရရေးသော ‘သီကုံးပန်းသွင် နေ့တိုင်းဆင်’ ဟု အမည်ရသော ဧကပိုဒ်ရတုတွင် ပညာသင်ယူနေသော စာသင်သား လူငယ်လူရွယ်တို့အား ပညာသင်ရာတွင် လိုက်နာအပ်သောအချက်ရှစ်ချက်ကို ‘သုစိပုဘာဝိလိသီဓာ’ ဟူသော အတိုကောက်စကားလုံးရှစ်လုံးဖြင့် လမ်းညွှန်မှုပြုခဲ့သည်ကိုတွေ့ရပါသည်။ ထို့ကြောင့် ပညာသင်သားလူငယ်တို့သည် အထက်ပါအတိုကောက်များအရ ‘သုဏေယျ (ကြားနာခြင်း)၊ စိန္တေယျ (ကြံစည် တွေးတောခြင်း)၊ ပုစ္ဆေယျ (မေးမြန်းခြင်း)၊ ဘာသေယျ (ပြောဆိုခြင်း)၊ ဝိစာရေယျ (စူးစမ်းဆင်ခြင်ခြင်း)၊ လိခေယျ (ရေးမှတ်ခြင်း)၊ သိက္ခေယျ (လေ့ကျင့်ခြင်း)၊ ဓာရေယျ (နှုတ်တက်ဆောင်ရခြင်း)’ ဟူသော အချက်ရှစ်ချက်ကို နေ့စဉ် နေ့တိုင်း လိုက်နာကျင့်ကြံရမည်ဖြစ်ကြောင်း၊ လိုက်နာကျင့်ကြံပါက အောင်မြင်မှုရရှိနိုင်ကြောင်း သိရပါသည်။

မြန်မာမှုအနုပညာများနှင့်ပတ်သက်သော အတိုကောက် စကားလုံးများတွင် ဘုရားမတင်၊ နတ်မဝင်၊ လူတွင်ပန်းဆယ်မျိုးရှိပုံ အကြောင်းကိုလည်း

^၁ ထွန်းမြင့်၊ ဦး (၁၃၇၆-)၊ ၁၉၇၁၊ ၅၉။

“ပွတ်၊ ပဲ၊ ထိမ်၊ ရန်၊ မော့၊ ယွန်း၊ တော့၊ ချီ၊ တဉ်း၊ ပု၊ ပန်းဆယ်ပါးစု”

ဟု အတိုကောက် သုံးထားသည်ကိုလည်း တွေ့ရပါသည်။ မူလအမည်အပြည့်အစုံမှာ ‘ပန်းပွတ်၊ ပန်းပဲ၊ ပန်းထိမ်၊ ပန်းရန်၊ ပန်းတမော့၊ ပန်းယွန်း၊ ပန်းတော့၊ ပန်းချီ၊ ပန်းတဉ်း၊ ပန်းပု’တို့ ဖြစ်ကြပါသည်။

ထို့အတူ မြန်မာတို့သည် မြန်မာမှု ကဗာလင်္ကာသီချင်းများ ရေးဖွဲ့ရာတွင်လည်း အတိုကောက်များသုံး၍ ရွတ်ဆိုရလွယ်အောင်ရေးသားလေ့ရှိကြောင်းတွေ့ရပါသည်။ ကဗျာဖွဲ့နည်း စနစ်အရ အသံအရေအတွက် ကန့်သတ်မှုများရှိသဖြင့် စကားလုံးများကို မူလအရှိအတိုင်း မရေးဘဲ စကားလုံး၏ အစိတ်အပိုင်းအချို့ကို လိုအပ်သလိုချုံ့၍ ရေးသားလေ့ရှိကြောင်း တွေ့ရပါသည်။ ထိုသို့ရေးသားခြင်းမှာလည်း စကားလုံးသစ်များ ဖြစ်ပေါ်တိုးပွားစေသည့် အတိုကောက် အသုံးပင် ဖြစ်ပါသည်။ ‘ငါးမည်ရ ပြည်ရွှေဘို’ ကဗျာတွင်

“ရန်ကြီးအောင်၊ ကုန်းဘောင်ခပါတဲ့၊ ငါးမည်ရပြည်ရွှေဘို

ဘေးရန်ကပြီ၊ မုဆိုးဖို နာသိဃံ၊ ဘိုးတော့ဒေသ”

ဟူ၍ အလောင်းမင်းတရားကြီး၏ အောင်မြေဒေသများကို စပ်ဆိုထားရာ ‘ရတနာသိဃံ’ ကို ‘နာသိဃံ’ဟု အတိုကောက်အသုံး သုံးထားကြောင်း သိနိုင်ပါသည်။ ထို့ပြင် ကုန်းဘောင်ခေတ် တွင် ဦးတိုးရေးသော ရာမရကန်၌

“ဝေယန်နန်းမြင့်၊ ပန်တိုင်းတင့်မို့၊ မြို့ဝန်မင်းစာ၊ လိပ်မပါဘဲ၊

ကွယ်ရာဈေးပြင်၊ ရောင်းလို့များမြင်မလား”

ဟူသောသင်္ဃန်းဘွဲ့တွင် ‘သိကြားမင်းစံရာဝေယန္တနတ်နန်း’ကို ‘ဝေယန်နန်း’ဟု လည်းကောင်း၊ ‘ခွင့်ပြုအမိန့်စာ’ကို ‘စာ’ ဟုလည်းကောင်း၊ ‘စာလိပ်’ကို ‘လိပ်’ဟု လည်းကောင်း အနက်အဓိပ္ပာယ် မပျက် အတိုကောက်ရေးသားထားသည်ကို တွေ့ရပါသည်။

ဘကြီးတော်လက်ထက်က ပေါ်ပေါက်ခဲ့သော

“တံတားဦးက၊ ကွမ်းနုဝါ၊ ငမြာကဆေး၊ ကွမ်းသီးတောင်ငူနှင့်

ကိုင်းထုံးဖြူပြည်ရှား၊ သာဝါးလို့ထွေး”

ဟူသောစာချိုးတွင် တံတားဦးရွာအနီးရှိ ရွာများမှထွက်သော ကွမ်းရွက်၊ ငမြာရွာက ဆေးရွက်ကြီး၊ တောင်ငူက ကွမ်းသီး၊ စစ်ကိုင်းကထုံးနှင့် ပြည်ကရှားစေးတို့သည် အကောင်းဆုံးဖြစ်ကြောင်းစပ်ဆို ထားရာ ‘စစ်ကိုင်းမြို့’ကို ‘ကိုင်း’ ဟု အတိုကောက် ရေးထားကြောင်း တွေ့နိုင်ပါသည်။ ထို့ပြင်

“မလေးလွမ်းလေအောင်၊ ငှက်ရွှေဖိုးခေါင်၊

လွမ်းလေအောင်၊ ငှက်ရွှေဖိုးက၊ မြိုင်ရိုးကိုထိုး၊

ရွှေမြောင်းတောင်၊ ဆည်ပေါင်ရိုးက၊ ငှက်ရွှေဖူးသာ

ဆည်ပေါင်ရိုးက၊ ငှက်ဖိုးသာတယ်၊ နားနာကြလေး။”

^၁ မုံရွေးဆရာတော်၊ ၁၉၆၃၊ ချီး ခ။

ဟူသော ‘ရွှေမြောင်းရွာ’ ကဗျာတွင် ပထမအစ၌ ‘ဖိုးခေါင်’ကို ‘ဖိုးခေါင်’ ဟု အပြည့်အစုံ ရေးသားအသုံးပြုထားသော်လည်း ဒုတိယမြောက်အသုံးမှစ၍ ‘ဖိုး’ ဟူသော အတိုကောက်သုံးထားကြောင်း တွေ့ရပါသည်။ ထို့အတူ ‘မြင်းမိုရ်မြင့်မား၊ ဝတီဖျားက’ ဟူသော အသုံးတွင်လည်း ‘တာဝတိံသာ နတ်ပြည်’ ကို ‘ဝတီ’ ဟု အတိုကောက်သုံးထားကြောင်း တွေ့ရပါသည်။ တစ်ဖန်

“ငွေနှင်းငယ်မှု၊ လေညင်းရယ်တသုန်သုန်နှင့်

ချမ်းပုံမှာ ကမ်းကုန်ရစ်တာမို့

မန်းတုန်အောင် လမ်းဆုံက ဟစ်ချင်တော့”

ဟူသော အချုပ်တန်းဆရာဖေ၏ ‘ဆောင်းရတုပွဲ’ ကဗျာတွင်လည်းကောင်း၊

“လွမ်းမပြေ၊ မန်းမြေတမိတော့”

ဟူသော ‘ဖိုးစော်ကဲ’ ကဗျာတွင်လည်းကောင်း ‘မန္တလေး’ ကို ‘မန်း’ ဟု အတိုကောက်သုံးထားသည်ကို တွေ့ရပါသည်။ ထို့အတူ ‘မန်းမြို့သူ’၊ ‘မန်းတောင်ရိပ်’၊ ‘မန်းသင်္ကြန်’ ဟူသော အသုံးများတွင်လည်း ‘မန္တလေး’ ကို ‘မန်း’ ဟု အတိုကောက်သုံးထားကြောင်း သိရပါသည်။ မြန်မာမှု နယ်ပယ်၌ ‘မန်း’ ဟုဆိုလျှင် နန်းဆန်သည်၊ မြန်မာဆန်သည်ဟု ယူဆကြကြောင်း သိရပါသည်။

ယခုအချိန်တွင် မန္တလေးမြို့၌ ကားလမ်းများနှင့်ကားရပ်ရန်နေရာများကို လမ်းညွှန်ထားရာ ‘ရန်ကုန်-မန္တလေးကားလမ်း’ ကို ‘ရန်-မန်း လမ်း’ ဟု အတိုကောက်ရေးသားထားသည်ကို တွေ့ရပါသည်။

ဗုဒ္ဓဘာသာဝင်တို့၏အထွတ်အထိပ်ဖြစ်သော ဂေါတမမြတ်စွာဘုရားကိုယ်တိုင် ဟောကြားတော်မူခဲ့သော ဘုရား၏ ဖြစ်တော်စဉ်ပေါင်း ငါးရာလေးဆယ့်ခုနစ်ဘဝရှိရာ မှတ်ရလွယ်အောင် ဇာတ်တော်ငါးရာငါးဆယ်ဟု ဆိုကြပါသည်။ ဤတွင် ဘုရားလောင်း၏နုနယ်သောဘဝပေါင်းမှာ ငါးရာသုံးဆယ့်ခုနစ်ဘဝရှိ၍ အရင့်အမာဘဝ ဆယ်ဘဝကို ပေါင်းကာ

“နုမှာငါးရာ၊ ရင့်မှာတစ်ကျိပ်”

ဟု မှတ်သားကြပါသည်။ ‘နု’ သည် ‘နုနယ်သောဘဝ’ ကို ဆိုလို၍ ‘ရင့်’ သည် ‘အရင့်မာဆုံးဘဝ’ ကို ဆိုလိုကြောင်း စကားလုံးတစ်လုံးတည်းဖြင့် အတိုသုံးထားသည်မှာ ကျစ်ကျစ်လျစ်လျစ်ရှိကြောင်း တွေ့ရပါသည်။

တစ်ဖန် မြန်မာမှုနယ်ပယ်တွင် ‘နတ်နှင့်နဂါးမလှည့်စားနှင့်’ဟူသောအဆိုရှိပုံကို ကြည့်ခြင်းဖြင့် မြန်မာတို့သည် နတ်နှင့်နဂါးတို့ကို ယုံကြည်မှုရှိကြောင်း သိနိုင်ပါသည်။ ကောင်းကင်ယံမှ နဂါးကြီး၏ဦးခေါင်းသည် အတည်မရှိဘဲ တစ်လနှင့်တစ်လ လှည့်လည်ပြောင်းရွှေ့နေပြီး နဂါးကြီး၏ဦးခေါင်းရှိရာအရပ်မှ အမြီးရှိရာအရပ်သို့ မကျော်ဖြတ်ရကြောင်းသိရပါသည်။ မိမိတို့၏လုပ်ငန်းဆောင်တာများ လုပ်ဆောင်ရာတွင် ဆင်ခြင်မှတ်သားဖွယ်ရာတစ်ခုအဖြစ် မှတ်သားအသုံးပြုကြောင်း သိရပါသည်။ ထိုသို့ နဂါးခေါင်းပြောင်းလဲမှုကို အလွယ်တကူ သိနိုင်စေရန်

“တတာကနောက်၊ နဝါဝါမြောက်၊ တော်ကျွတ်မုန်းရှေ့၊

နတ်ပြာတွဲတောင်၊ ဤလူ့ဘောင် ရှောင်ပါနဂါးလှည့်”^၁

ဟူ၍ မှတ်သားလေ့ရှိကြောင်း တွေ့ရပါသည်။ ဤတွင် ‘တ’ သည် ‘တပေါင်းလ’၊ ‘တာ’ သည် ‘အတာကူးသောလ၊ တန်ခူးလ’၊ ‘က’ သည် ‘ကဆုန်လ’ ဖြစ်၍ ထိုလများတွင် နဂါးခေါင်းသည် အနောက်အရပ်သို့လှည့်ကြောင်း သိရပါသည်။ ထို့အတူ ‘န’ သည် ‘နယုန်လ’၊ ‘ဝါဝါ’ သည် ‘ဝါဆိုလနှင့်ဝါခေါင်လ’ များဖြစ်၍ နဂါးခေါင်းသည် မြောက်အရပ်သို့ လှည့်ကြောင်း၊ ‘တော်’ သည် ‘တော်သလင်းလ’၊ ‘ကျွတ်’ သည် ‘သီတင်းကျွတ်လ’၊ ‘မုန်း’ သည် ‘တန်ဆောင်မုန်းလ’ များ ဖြစ်၍ နဂါးခေါင်းသည် အရှေ့အရပ်သို့ လှည့်ကြောင်း၊ ‘နတ်’ သည် ‘နတ်တော်လ’၊ ‘ပြာ’ သည် ‘ပြာသိုလ’၊ ‘တွဲ’ သည် ‘တပို့တွဲလ’ များဖြစ်၍ နဂါးခေါင်းသည် တောင်အရပ်သို့လှည့်ကြောင်း သိရပါသည်။ မြန်မာမှုနယ်ပယ်တွင် တစ်နေရာမှတစ်နေရာသို့ ပြောင်းရွှေ့ရာတွင်လည်းကောင်း၊ ခရီးသွားလာရာတွင်လည်းကောင်း နဂါးနှင့်ပတ်သက်၍ ယုံကြည်မှုလွန်ကဲကြောင်း သိရပါသည်။

ထို့ပြင် လူတို့သည် ဓမ္မတာအရ အချိန်တန်အရွယ်ရောက်လာပါက ယောက်ျားမိန်းမ လက်ထပ်ထိမ်းမြားခြင်းကို ပြုလုပ်တတ်ကြသည်။ လက်ထပ်ရာတွင် နေ့ကောင်းနေ့မြတ်များ ရွေး၍ မိမိတို့၏ လုပ်ငန်းဆောင်တာများ အောင်မြင်အောင် လုပ်ဆောင်လေ့ရှိကြပါသည်။ ထိုသို့ နေ့ကောင်း ရက်မြတ်ရွေးပုံနှင့် ပတ်သက်၍

“ဝါဝါတော်တော်၊ ပြာပေါင်းနော်၊ မလျော်ခြောက်လရှောင်”^၂

ဟု ‘ဝါဆို၊ ဝါခေါင်၊ တော်သလင်း၊ နတ်တော်၊ ပြာသို၊ တပေါင်း’ လများတွင် မင်္ဂလာဆောင်ရန် မသင့်ကြောင်း မှတ်သားသိရှိရပါသည်။

ဤသို့ မှတ်သားဖွယ်ကောင်းသော မြန်မာမှုဆိုင်ရာအတိုကောက်အသုံးများကို တွေ့ရသကဲ့သို့ ချစ်ခင်နှစ်သက်ဖွယ်ကောင်းသော အတိုကောက်အခေါ်အဝေါ်များကိုလည်း တွေ့ရပါသည်။ မြန်မာတို့သည် မြို့အမည်များ၏ရှေ့တွင် ‘ရွှေ’ ဟူသောစာလုံးကိုထည့်ကာ အတိုကောက်စကားလုံးအဖြစ် အသုံးပြုကြကြောင်း တွေ့ရပါသည်။ မန္တလေးမြို့ကို ‘ရွှေမန်း’၊ မော်လမြိုင်မြို့ကို ‘ရွှေမြိုင်’၊ ထားဝယ်မြို့ကို ‘ရွှေဝယ်’ စသည်ဖြင့် မြို့အမည်များကို အတိုကောက်ပြုကာ ရှေ့မှ ‘ရွှေ’ ဟူသော စာလုံးကိုထည့်၍ အသုံးပြုသည်မှာလည်း မြန်မာတို့၏ချစ်စရာဓလေ့ဟု ဆိုနိုင်ပါသည်။

ဤသို့ဖြင့် အစဉ်အဆက် ထွန်းတောက်ခဲ့သော ပညာရှင်တို့သည် နှောင်းလူတို့မှတ်သားသင့်သည်များကို အတိုကောက်အသုံးများဖြင့်လက်ဆင့်ကမ်းပေးခဲ့ကြပါသည်။ ထို့အတူ စကားလုံးကို အပြည့်အစုံမရေးဘဲ အတိုကောက်ရေးသားပြောဆိုသည့်အတွက် အခက်အခဲ ဖြစ်ရပုံကိုလည်း တွေ့ရပါသည်။

‘ဆယ်ရေးတစ်ရေး၊ ကိုးရေးတစ်ရာ’ ဟူသောအတိုကောက်စကားလုံး အသုံးနှင့် ပတ်သက်၍ သိနိုင်ရန် ကြိုးပမ်းကြပုံဖြင့် တင်ပြလိုပါသည်။ “အမရပူရမြို့ ကောင်းစားစဉ် အခါက ကသည်းမတစ်ယောက်သည် ဝမ်းဘဲဥများကို တောင်းနှင့်ရွက်၍ ရောင်းချရန် မြို့တွင်းသို့ နံနက်စောစော ဝင်ရောက်လာရာ မြို့တံခါးမှူးက ဖယ်ရှားသဖြင့် ဝမ်းဘဲဥများ ကျကွဲကုန်လေသည်။

^၁ သူရဇာ ၂၀၀၄၊ ၁၉၃။

^၂ သူရဇာ ၂၀၀၄၊ ၁၉၃။

လွှတ်တော်သ ဦးတိုက် သွားရောက် လျှောက်ထားရာ မယ်မင်း ဘဲဥလုံးရေ မည်မျှလဲဟု စစ်မေးပါသည်။ ကသည်းမက ‘ကျွန်တော်မ ဝမ်းဘဲဥသည် ခုနစ်လုံးပုံလျှင် တစ်လုံးကြွင်းပါသည်။ ကားလုံးစီပုံလျှင် သုံးလုံးကြွင်း ပါသည်’ ဟု လျှောက်ထားလေသော် လွှတ်တော်အရာရှိတို့က ဝမ်းဘဲဥ အရေအတွက်ကို သိနိုင်ရန် ပုံပါသော်လည်း အကြွင်းမမှန်သည်ကို တစ်စတစ်စ စကားအကျယ်ပွားလာသဖြင့် ဆီသည်ယောက်ျားတစ်ယောက်သိ၍ ထိုဆီသည်က လွှတ်တော် စာရေးတစ်ယောက်ကို ပုရပိုက်ဖြန့်စေ၍ ဂဏန်းတစ်ဆယ်ရေးလိုက်၊ ၎င်းအောက်က တစ်ရေးလိုက်၊ ၎င်းအောက်က ကိုးရေးလိုက်၊ ၎င်းအောက်က တစ်ရာရေးလိုက် ပြီးလျှင် ပေါင်းကြည့်ပါက တစ်ရာ နှစ်ဆယ်ဖြစ်မည်။ ကသည်းမလျှောက်ချက်အရ ၇ လုံး တစ်ပုံစီပုံလျှင် တစ်လုံးကြွင်းမည်။ ၉ လုံးစီ ပုံလျှင် သုံးလုံး ကြွင်းလိမ့်မည်ဟု ပြောသည့်အတိုင်း ပြုလုပ်ရာ ဟုတ်မှန်သောကြောင့် ဆီသည်ကို သင့်လျော်သောဆုလာဘ်များ ပေးသနားတော်မူသည်”^၁ ၎င်းဆီသည် အပြောကိုထောက်၍ ‘တစ်ဆယ်ရေး တစ်ရေး ကိုးရေးတစ်ရာရေး’ ကို ယခု ‘ဆယ်ရေး တစ်ရေး ကိုးရေး တစ်ရာ’ဟု ဆိုထားသဖြင့် အခက်အခဲတွေ့ရခြင်းဖြစ်သည်ဟု ဆိုလေ့ရှိကြောင်းသိရပါသည်။

ရှေးမြန်မာကြီးများသည် မိမိတို့မှတ်သားလိုသည်များကို အလွယ်တကူမှတ်မိနိုင်စေရန် ကြံစည်တွေးတောကာ အတိုကောက်စကားလုံးများကို အသုံးပြုခဲ့ကြကြောင်းတွေ့ရပါသည်။

၂။ ၅။ သင်္ကေတစကားလုံးသုံး၍ အတိုကောက်အသုံးပြုမှုများ

ရှေးမြန်မာတို့သည် မှတ်သားစရာများကို နောင်လာနောက်သားတို့ မှတ်မိလွယ်စေရန် ခုနစ် သက္ကရာဇ်နှင့်စာသားများအစား သင်္ကေတသဘောဆောင်သည့် အမှတ်အသားများဖြင့် မှတ်သားခဲ့ ကြသည်ကိုတွေ့ရပါသည်။ ကိန်းဂဏန်းများကို ရွတ်ဆိုရလွယ်ကူစေရန် ကဗျာသံပေါက်များဖြင့် အကြောင်းအရာကိုချုံ့၍ မှတ်သားလေ့ရှိကြသည်ကိုလည်း တွေ့ရပါသည်။ ကိန်းဂဏန်းများသည် စာလုံးအရေအတွက်အနေဖြင့် ထူးထူးခြားခြားလျော့နည်းမသွားစေနိုင်သော်လည်း စကားသံထွက်ရ မည့်ပမာဏလျော့နည်းသွားစေသောကြောင့် အတိုကောက်သဘောသက်ရောက်သည်ဟု ဆိုနိုင်ပါ သည်။ ထို့ကြောင့် အတိုကောက်စကားလုံးများအဖြစ် တင်ပြလိုပါသည်။

ဘိုးတော်ဘုရားလက်ထက်က သွန်းလုပ်ခဲ့သော မင်းကွန်းခေါင်းလောင်းကြီး၏ အလေး ချိန်သည် ‘ငါးသောင်း ငါးထောင် ငါးရာ ငါးဆယ့်ငါးပိဿာ’ ရှိကြောင်းကို ‘မင်းဖြူမှန်မှန်ပြော’ ဟူသော စာလုံး ၅ လုံးဖြင့် အတိုကောက်မှတ်သားကြသည်ကို တွေ့ရပါသည်။ ထို့အတူ မန္တလေး မြို့ရှိ တန်ခိုးကြီးမဟာမြတ်မန်ဘုရားကြီးတွင် လှူဒါန်းထားသောကြေးစည်တော်ကြီး၏အလေးချိန် ကိုဖော်ပြရာ၌ ‘ညိမ်း(ငြိမ်း)ချမ်းသာယာ ချိန်ပိဿာ’ဟု ဆိုထားသဖြင့် ကြေးစည်တော်ကြီး၏ အလေးချိန်သည် ၃၂၆၄ ပိဿာရကြောင်းသိရပါသည်။ တစ်ဖန် ပုဂံမြို့တွင်ရှိသော ဘုရားစေတီ များ၏ အရေအတွက်ကို ‘လှည်းဝင်ရိုးသံတည်ညံ၊ ပုဂံဘုရားပေါင်း၊ ရခိုင်ပြည်ရှိ ဘုရားစေတီများ ၏ အရေအတွက်ကို ‘သဇင်ပန်းခိုင်တမြိုင်မြိုင် ရခိုင်ဘုရားပေါင်း’ စသည်ဖြင့် နှုတ်တက်ဆောင် မှတ်သားကြရာ ယခုအချိန်ထိ အလွယ်တကူ မှတ်မိသိရှိနေကြပါသည်။

ထို့ပြင် ရှေးမြန်မာဘုရင်များ နန်းတက်နှစ်နှင့်ပတ်သက်၍လည်း အတိုကောက်မှတ်သား လေ့ရှိကြပါသည်။ ပင်းယခေတ်စတင်သည့်နှစ်ကို ‘သော်တာလ ပင်းယတည်’၊ အင်းဝခေတ် စတင်

^၁ ထွန်းမြင့်၊ ဦး (၁၃၇၆-)၊ ၁၉၇၁၊ ၁၇၁။

တည်ထောင်သည့်နှစ်ကို ‘ထိန်ကျော်ဟိုး သတိုးမင်းဖျား’ ဟု မှတ်သားပြီး ထိုအင်းဝခေတ်သည် သက္ကရာဇ် ၈၈၈ ခုနှစ်တွင် သိုဟန်ဘွားတို့ တရားယွင်းဖောက်သဖြင့် ရဟန်းတို့ကိုသတ်၊ ဘုရားစေတီပုထိုးတို့ကို ဖျက်ဆီးကာ သာသနာတော် ညစ်နွမ်းစေခဲ့သဖြင့် သင်္ဂါယနာ တင်ခဲ့ရသည်။ ထိုသင်္ဂါယနာတင်ချိန် သက္ကရာဇ်ကိုလည်း ‘ဂဇယ်သုံးခု ဥသျှစ်ထု’ဟု မှတ်သားထားလေ့ရှိပါသည်။ ထိုသို့ သင်္ကေတစာလုံးသုံး၍ အတိုကောက်အသုံးပြုခြင်းကို ရှေးကပိုမိုသုံးလေ့ရှိကြောင်း တွေ့ရပါသည်။

တစ်ဖန် ကဝိလက္ခဏာ သတ်ပုံသံပေါက်ကျမ်း နိဒါန်းတွင် ဒုတိယအင်းဝခေတ်ခေါ် ညောင်ရမ်းခေတ်တွင် မဟာဓမ္မရာဇာဓိပတိ (ဟံသာဝတီရောက်မင်းတရားကြီး) နန်းကလျှောကျကြောင်း ဖော်ပြရာ၌ ‘အာ၊ ဣ၊ ဥ၊ စော နန်းကလျှော’ ဟုလည်းကောင်း၊ ကုန်းဘောင်ခေတ်အလောင်းမင်းတရားကြီး ထီးနန်းတက်သည့်နှစ်ကို ‘ဥ၊ ဩ၊ ဥ၊ လာ ကုန်းဘောင်လောင်းရာဇာ’ ဟုလည်းကောင်း ဆိုထားသည်ကို ကြည့်ခြင်းဖြင့် မဟာဓမ္မရာဇာဓိပတိ (ဟံသာဝတီရောက်မင်းနန်းကလျှောသည့် သက္ကရာဇ် ၁၁၁၃ ကိုလည်းကောင်း၊ အလောင်းမင်းတရားထီးနန်းတက်သည့် သက္ကရာဇ် ၁၁၁၄ ကိုလည်းကောင်း သိနိုင်စေပါသည်။ ကုန်းဘောင်ခေတ် စတင်တည်ထောင်သော သက္ကရာဇ် ၁၁၁၅ ကိုလည်း ‘ဥဩအော်မြည် ကုန်းဘောင်တည်’ ဟု မှတ်သားကြပါသည်။ ထိုသို့ နှုတ်တက်ဆောင် မှတ်သားကြသည်မှာ မြန်မာတို့ အစဉ်အဆက်ပင် ဖြစ်ပါသည်။ ခုနစ် သက္ကရာဇ် ကိန်းဂဏန်းများကို ရွတ်ဆိုရလွယ်ကူစေရန် ကဗျာသံပေါက်များဖြင့် မှတ်သားလေ့ရှိကြသည်မှာ စိတ်ဝင်စားဖွယ်ကောင်းလှပါသည်။

ရှေးက မြန်မာပညာရှိကြီးများသည် မြန်မာတို့၏ရိုးရာ ရက်ကောင်းရက်မြတ် ရက်ရာဇာရွေးနည်းကို နှောင်းလူတို့ အလွယ်တကူ သိရှိမှတ်သားမိနိုင်စေရန်

“တန်ခူးကျော်သာလှ၊ ထွန်းပကဆုန်၊

နယုန်ညွတ်စ၊ အောင်လှဝါဆို

သာလိုဝါခေါင်၊ မြတ်တောင်တော်သလင်း

သီတင်းကျွတ်ဆီ၊ သောရီတန်ဆောင်မုန်း

ချမ်းလုံးနတ်တော်(သံလုံးနတ်တော်)၊ မနော်ပြာသို

မိညိုတပို့တွဲ၊ ထဲဝင်တပေါင်း”

ဟူသော အက္ခရာတို့၏ နေ့နံသင်္ချာဖြင့် တွက်ယူသော စာချိုးလင်္ကာလေးများဖြင့် နှုတ်ဆင့်ကမ်း မှတ်သားကြသည်ကို တွေ့ရပါသည်။ တန်ခူးလတွင် ‘ကျော်သာလှ’၏ နေ့နံဖြစ်သော ‘တနင်္လာနေ့၊ သောကြာနေ့၊ ဗုဒ္ဓဟူးနေ့’တို့သည် ရက်ရာဇာ ရက်ကောင်းရက်မြတ်များဖြစ်ကြောင်း သိရှိရပါသည်။ ထို့အတူ နယုန်လတွင် ‘ညွတ်စ’ ဟုဆိုထားသဖြင့် ‘အင်္ဂါနေ့’ သည် ရက်ကောင်းရက်မြတ် ဖြစ်သည်။ ဝါဆိုလတွင် ‘အောင်လှ’ ဟု ဆိုထားသည့်အတွက် ‘တနင်္ဂနွေနေ့၊ ဗုဒ္ဓဟူးနေ့’ ဝါခေါင်လတွင် ‘သာလို’ ဟု ဆိုထားသည့်အတွက် ‘သောကြာနေ့၊ ဗုဒ္ဓဟူးနေ့’ တော်သလင်းလတွင် ‘မြတ်တောင်’ ဟု ဆိုထားသည့်အတွက် ‘ကြာသပတေးနေ့၊ စနေနေ့’၊ သီတင်းကျွတ်လတွင်

^၁ သုရှု၊ ၂၀၁၄၊ ၁၉၃။

‘ဆီ’ ဟု ဆိုထားသည့်အတွက် ‘အင်္ဂါနေ့’၊ တန်ဆောင်းမုန်းလတွင် ‘သောရီ’ ဟု ဆိုထားသည့်အတွက် ‘သောကြာနေ့၊ ဗုဒ္ဓဟူးနေ့’၊ နတ်တော်လတွင် ‘ချမ်းလုံး’ ဟု ဆိုထားသည့်အတွက် ‘တနင်္လာနေ့၊ ဗုဒ္ဓဟူးနေ့’၊ ပြာသိုလတွင် ‘မနော်’ ဟု ဆိုထားသည့် အတွက် ‘ကြာသပတေးနေ့၊ စနေနေ့’၊ တပို့တွဲ လတွင် ‘မိညို’ ဟု ဆိုထားသည့်အတွက် ‘ကြာသပတေးနေ့၊ အင်္ဂါနေ့’၊ တပေါင်းလတွင် ‘ထဲဝင်’ ဟု ဆိုထားသည့်အတွက် ‘စနေနေ့၊ ဗုဒ္ဓဟူးနေ့’ တို့သည် ရက်ရာဇာ ရက်ကောင်းရက်မြတ် ဖြစ်ကြောင်း ဤစာချိုးလင်္ကာကို ရွတ်ဆိုခြင်းဖြင့် အလွယ်တကူ သိနိုင်ပါသည်။

ခြွင်းချက်အနေဖြင့် ဝါထပ်နှစ်များတွင် နတ်တော်လ၌ ရက်ရာဇာမှာ ‘တနင်္လာနေ့၊ ဗုဒ္ဓဟူးနေ့’ တို့အစား ‘သောကြာနေ့၊ ဗုဒ္ဓဟူးနေ့’ တို့ဖြစ်ကြောင်းကိုသိရှိစေရန် ‘သံလုံး နတ်တော်’ ဟုဆိုထားပြန်သေးသည်ကိုလည်းတွေ့ရပါသည်။ မြန်မာမူပတ်ဝန်းကျင်ရှိ ကျေးလက်တောရွာများ မှ လူကြီးမိဘအများစုနှင့် အချို့သောမြန်မာမူလိုက်စားသူများသည် ထိုသို့ အတိုကောက်မှတ်သား လေ့ရှိကြောင်း တွေ့ရပါသည်။

တစ်ဖန် ခေါင်းလျှော်ရေချိုးရန် ကောင်းမွန်သော နေ့နှင့်ပတ်သက်၍လည်း

“အိုးစည်တီး ပြီးအောင်လျှော်

ကရင်သားမွေး ခေါင်းမဆေးနှင့်”

ဟု မှတ်သားလေ့ရှိကြောင်း သိရပါသည်။ ‘အိုး’ သည် ‘တနင်္ဂနွေနေ့’၊ ‘စည်’ သည် ‘အင်္ဂါနေ့’ ကို ရည်ညွှန်းကြောင်း တွေ့နိုင်ပါသည်။ ထိုစကားအရ ခေါင်းလျှော်ရန် အကောင်းဆုံးရက်မှာ ‘တနင်္ဂနွေနေ့နှင့်အင်္ဂါနေ့’များသာ ဖြစ်ကြောင်း သိနိုင်ပါသည်။ တစ်ဖန် ‘က’ သည် ‘တနင်္လာနေ့’၊ ‘ရင်’သည် ‘ဗုဒ္ဓဟူးနေ့’၊ ‘သား’သည် ‘သောကြာနေ့’၊ ‘မွေး’သည် ‘ကြာသပတေးနေ့’ ဖြစ်၍ ‘တနင်္လာ၊ ဗုဒ္ဓဟူး၊ ကြာသပတေး၊ သောကြာ’ နေ့များတွင် ခေါင်းလျှော်ရန်မသင့်ကြောင်းဆိုထား သည်ကို လည်း မှတ်သားဖွယ်တွေ့ရပါသည်။ သို့သော် ယခုအခါတွင် အများစုက မိမိတို့အချိန် အားလပ်မှု အပေါ်မူတည်၍ ခေါင်းလျှော်ကြသည်ကို တွေ့ရပါသည်။

ထိုနည်းတူပင် ရှေးမြန်မာဆရာကြီးများက ဖျားနာပြီးစ နေပြန်ကောင်းလာသူများအား ရေစတင်ချိုးရန် သင့်သည့်နေ့များကိုလည်း အတိုကောက်စာချိုးလင်္ကာများဖြင့် မှတ်သားလေ့ရှိ ကြောင်း တွေ့ရပါသည်။

လင်္ကာအမှတ်အသားမှာ

“ငါ့သားရွှေတောင်၊ ရေကိုရှောင်၊

အောင်စံဖြိုး၊ ရေကိုချိုး”^၂

ဟူ၍ဖြစ်ရာ ‘ငါ့’ သည် ‘တနင်္လာနေ့’၊ ‘သား’ သည် ‘သောကြာနေ့’၊ ‘ရွှေ’ သည် ‘ဗုဒ္ဓဟူးနေ့’၊ ‘တောင်’ သည် ‘စနေနေ့’ များဖြစ်၍ ထိုနေ့များတွင် လူနာများသည် ရေစတင်ချိုးခြင်းကို ရှောင်ကြဉ်သင့်ကြောင်း၊ ‘အောင်’ သည် ‘တနင်္ဂနွေနေ့’၊ ‘စံ’ သည် ‘အင်္ဂါနေ့’၊ ‘ဖြိုး’ သည်

^၁ ဒဂုံ၊ ဆရာ၊ ၁၉၈၈၊ ၅၈။

^၂ သူရဇ၊ ၂၀၁၄၊ ၁၉၃။

‘ကြာသပတေးနေ့’ များဖြစ်၍ ထိုနေ့များတွင် ရေစတင်ချိုးသင့်ကြောင်း ဆိုထားသည်မှာလည်း မှတ်သားဖွယ် ကောင်းလှပါသည်။

မြန်မာတို့သည် စကားလုံးများကို အတိုကောက်ပြုရာတွင် စာလုံးများဖြင့် အတိုကောက် ပြုရုံသာမက စာလုံးအစား သင်္ကေတများသုံး၍လည်း အတိုကောက်ပြုကာ အသုံးပြုကြသည်ကို တွေ့ရပါသည်။ မြန်မာတို့၏ငွေကြေးဆိုင်ရာ အသုံးအနှုန်းများကို လေ့လာကြည့်လျှင် ‘ကျပ်၊ ပြား’ ဖြင့် အသုံးပြုကြသည်ကိုတွေ့ရပါသည်။ သို့သော် အပြောတွင် ‘ကျပ်၊ ပြား’ ဟု အရှိအတိုင်း အသုံးပြုပြောဆိုသော်လည်း ရေးသားသည့်အခါ သင်္ကေတဖြင့် ‘-/-၊ -|’ ဟူ၍ အတိုကောက် သုံးကြသည်ကို တွေ့ရပါသည်။ ယနေ့ခေတ်တွင်မူ အပူချိန်ကို ဖော်ပြရာ၌ ‘ဒီဂရီဖာရင်ဟိုက်’ နှင့် ‘ဒီဂရီစင်တီဂရိတ်’တို့ကို အသုံးပြုရေးသားရာတွင် ထိုသို့အရှည်မရေးဘဲ ‘F’၊ ‘C’ဟု အတိုကောက် ရေးထားသည်ကို တွေ့နိုင်ပါသည်။ ထို့ပြင် ရာခိုင်နှုန်းကို ‘%’ သင်္ကေတဖြင့် အတိုကောက် ရေးသားထားသည်ကို တွေ့ရပါသည်။ ဤအချက်များကို ကြည့်ခြင်းအားဖြင့် ဘာသာစကား ပြောဆိုအသုံးပြုနေသူတို့သည် မိမိတို့၏ အားစိုက်ထုတ်မှုသက်သာအောင်၊ အချိန်နေရာသက်သာ အောင် အတိုကောက်စကားလုံးများ အသုံးပြုခြင်းဖြင့် မိမိတို့ဘာသာစကားကို တိုးပွားလာအောင် အစဉ်အဆက်ကြိုးပမ်း လာကြကြောင်း တွေ့ရပါသည်။

၂။ ၆။ အကြောင်းအရာကို ချုံ့၍ အတိုကောက်အသုံးပြုမှု

မြန်မာမှုဆိုင်ရာ အတိုကောက်အသုံးများတွင် စကားလုံးများကိုသာမက အကြောင်းအရာတစ်ရပ်လုံး ကိုပါ ချုံ့၍ အတိုကောက်အသုံးပြုလေ့ရှိကြသည်ကို တွေ့ရပါသည်။ အကြောင်းအရာ၏အဓိက အချက်ဖြစ်သော စကားလုံးတစ်လုံးတည်းကိုသာယူ၍ အတိုကောက်အသုံးပြုခြင်းမျိုး ဖြစ်ပါသည်။

ကုန်းဘောင်ခေတ်စာဆိုကျော် စလေဦးပုည၏ကဗျာတွင်

“ထုံးမတိမ်၊ ငုံးအိမ်ကျူလနှင့် တူမျှစံနှိုင်း၊ ထပ်တစ်ညီ၊

ကပ္ပဋ္ဌိတင်ထိုက်တဲ့ ယဉ်သိုက်ဝင်သည်၊ မေနှင်းရယ်၊ ငါးဆင့်သမိုင်း”

ဟူ၍ တစ်ကမ္ဘာပတ်လုံး မပျောက်မပျက်တည်ရှိသည့်အရာ ၄ ပါးဖြစ်သည့် ‘ကပ္ပဋ္ဌိတိ ၄ ပါး’ ကို ‘ငုံးအိမ်ကျူလ’ ဟု အတိုကောက် သုံးထားကြောင်း တွေ့ရပါသည်။ ‘ငုံးအိမ်ကျူလ’ တွင်ပါသော ‘ငုံး’ သည် ‘ဘုရားလောင်းငုံးမင်းဖြစ်စဉ် တောမီးလောင်ရာ သစ္စာဆိုသဖြင့် ၁၆ မင်းပယ်စာပမာဏ ရှိသောငုံးမင်းနေရာကို မီးမလောင်ဘဲ ကွင်းသွားသည်။ ထိုတောနေရာသည် တစ်ကမ္ဘာလုံး တည်ရှိ နေသောနေရာဖြစ်သည်။ ကပ္ပဋ္ဌိတိတစ်ပါးဖြစ်ကြောင်းကို ဆိုလိုပါသည်။ ‘အိမ်’သည် ‘ကဿပ ဘုရားလက်ထက်တွင် ဃဋိကာရအိုးထိန်းသည်၏ အလှူထက်သန်မှုကြောင့် ၎င်း၏အိမ်တည် နေရာသည် မိုးရေမစတဘဲ တစ်ကမ္ဘာပတ်လုံးတည်နေသည့်အတွက် ကပ္ပဋ္ဌိတိတစ်ပါး ဖြစ်ကြောင်း’ ကို ဆိုလိုပါသည်။ ‘ကျူ’ သည် ‘ဘုရားလောင်း မျောက်မင်းဖြစ်စဉ် ယက္ခိဿ စောင့်သော နဠပါန ရေကန်မှ ရေကို အန္တရာယ်မရှိဘဲသောက်နိုင်ရန် ကျူရိုးအဆစ်များကိုဖောက်ပြီး ရေကို စုပ်သောက် ခဲ့သည်။ ထိုကျူတောမှ ကျူပင်များသည် အဆစ်မရှိဘဲ တစ်ကမ္ဘာပတ်လုံးတည်သည့်အတွက် ကပ္ပဋ္ဌိတိတစ်ပါးဖြစ်ကြောင်း’ ကို ဆိုလိုပါသည်။ ‘လ’ သည် ‘လဝန်း၌ရှိသော ယုန်အရပ်သည် တစ်ကမ္ဘာပတ်လုံး တည်နေသည့်အတွက် ကပ္ပဋ္ဌိတိတစ်ပါးဖြစ်ကြောင်း’ကို ဆိုလိုပါသည်။ ခေတ်

အဆက်ဆက် စာဆိုတို့သည် ဤကဲ့သို့သော အတိုကောက်စကားလုံးများဖြင့် မိမိတို့ပြောချင်သည် အကြောင်းအရာများကို စာဖတ်သူတို့သိရှိစေရန် ရေးသားလေ့ရှိကြောင်း တွေ့ရပါသည်။

တစ်ဖန် မြန်မာ့ဇာတ်သဘင်ဆိုင်ရာ အတိုကောက်အသုံးများကိုလည်း တွေ့ရပါသည်။ မြန်မာ့ဇာတ်ပွဲတွင် ဇာတ်မင်းသမီးလုပ်သူသည် အမျိုးသမီးဆိုင်ရာ ကကြိုးကကွက်များကို နိုင်နင်းစွာ တတ်ကျွမ်းရသည်။ ဤတွင် မင်းသမီးကောင်းတစ်လက်ဖြစ်ရန် ‘ပိုး၊ မွေး၊ ခေါ်၊ မျှော်၊ အောင်၊ ဇော်၊ လှ၊ ဘ၊ ရူး၊ အ၊ သေ၊ ပစ်’ ဟူသော မင်းသမီးတို့တတ်အပ်သည့် ပညာ ဆယ့်နှစ်ပါးကိုလည်း တကယ်တတ်ရမည်’^၁ ဟု ရုပ်သေးမင်းသမီးကြီးဆရာပုက မြန်မာ့စွယ်စုံကျမ်းတွင် ဆိုထားပါသည်။ ဤတွင် အတိုကောက်အသုံးနှင့်ပတ်သက်၍ ဆရာပုက

“ပိုး - မိန်းမတန်မဲ့ယောက်ျားများကို ပိုးခန်းကြုံလျှင် သဘာဝကျကျ တကယ့်အဖြစ်နှင့်တူအောင် ပိုးရသည်။

မွေး - မိန်းမတို့ဓမ္မတာအရ အပျိုပင်ဖြစ်သော်လည်း ဆယ်လမွေးသည့် မိခင်တစ်ဦးအတိုင်း သရုပ်ပါပါ မွေးတတ်ရမည်။

ခေါ် - လင်၊ သား၊ အရှင် စသူတို့ကို ထုံးတမ်းစဉ်လာနှင့်အညီ ခေါ်တတ် ပြောတတ်ဖို့လိုသည်။

မျှော် - ရည်းစားမျှော်၊ လင်မျှော်၊ သားမျှော် စသည်ဖြင့် မျှော်တတ်ရသည်။

အောင် - စစ်ကိုင်း၊ ကျောက်ပန်း၊ ကန်ကြီးကုန်း၊ ရာဇဝင်ဖြစ်သော ဆားတောင်သူအောင်ဖြူဇာတ်ကို နိုင်နင်းစွာ ကပြနိုင်ရမည်။

ဇော် - ဇော်ဂျီအဖြစ်နှင့် ကတတ်၊ ပြောတတ်၊ ပြုမူတတ်ရမည်။

လှ - လင်လှခန်း၊ သားလှခန်းများတွင် နိုင်နင်းရမည်။

ဘ - ဘီလူးအကကို နိုင်နင်းစွာကတတ်ရမည်။

ရူး - ဇာတ်ကွက်နှင့်အညီ တကယ့်အရူးနှင့်တူအောင် ကပြနိုင်ရမည်။

အ - ဘာတစ်ခွန်းမျှမပြောနိုင်ဘဲ မျက်နှာအမူအရာအမျိုးမျိုးဖြင့် ထုတ်ဖော် ပြနိုင်ရမည်။

သေ - မင်းသမီးလုပ်သူသည် အသေတတ်ရမည်။

ပစ် - သားပစ်၊ သမီးပစ်၊ စွန့်ပစ်တတ်ရန် လိုသည်။”^၂

ဟူ၍ ရှင်းပြထားပါသည်။

မြန်မာ့မူမြန်မာ့ဟန်ဖြစ်သော ကဗျာလင်္ကာသီခင်းများတွင် ဤသို့အတိုကောက်စကားလုံးများကို အသုံးပြုမှတ်သားကြရာ အကျိုးရှိလှသော်လည်း တစ်ခါတစ်ရံ အတိုကောက်မှတ်သားမှုကြောင့်အလွဲလွဲအချော်ချော်ဖြင့်ရယ်စရာဟာသမြောက်မှုများဖြစ်သွားသည်ကိုလည်းတွေ့ရပါသည်။

သင်္ဂဇာဆရာတော်ထံသို့ စာတတ်ပေတတ်ပုဂ္ဂိုလ်တစ်ဦးက ‘ကျမ်းဂန်များ အထင်အရှားအခိုင်အမာရှိပါလျက် ဝါဒချင်းမတူ အယူကွဲပြားငြင်းခုံနေကြခြင်း’ အကြောင်းကို မေးမြန်းရာမှ

^၁ မြန်မာ့စွယ်စုံကျမ်း၊ အတွဲ ၁၀၊ ၁၉၆၆၊ ၈၀။

^၂ မြန်မာ့စွယ်စုံကျမ်း၊ အတွဲ ၁၀၊ ၁၉၆၆၊ ၈၀-၈၁။

ပြောပြသောပုံပြင်တစ်ပုဒ်ဖြစ်သည့် ‘ကျွတ်မုန်းဝင်’ ဟူသော အတိုကောက်စကားလုံး အသုံးကြောင့် ဟာသမြောက်ရုပ်ကိုလည်း တင်ပြလိုပါသည်။

အရပ်တကာလှည့်လည်သွားလာနေသော စိတ်မနှံ့သူတစ်ဦးသည် ဧရပ်ခါးပန်းမှာ ‘ကျွတ်-မုန်း-ဝင်’ဟူသော စကားလုံးကြီးများကို ထုံးနှင့်ရေးသားထားရာ တံမြက်စည်းလှည်းရန် ရောက်လာသော ဧရပ်ဒကာကတွေ့ပြီး ဆရာတော်ဘုန်းကြီးထံ မေးလျှောက်လေသည်။ ဘုန်းကြီးက ‘လောကီလောကုတ္တရာ နှစ်လီမြင်တဲ့ ပညာရှိများ ရေးသွားတာဖြစ်ရမယ်။ ‘ကျွတ်’ ဆိုတာ ‘တဏှာရာဂ၊ လောဘ၊ ဒေါသတို့က ‘ကျွတ်’ လို့ရရင်၊ ဝဋ်ဆိုတဲ့ ဒုက္ခသစ္စာကို ‘မုန်း’ ပြီး မဂ္ဂသစ္စာကို ပွားလျက် နိဗ္ဗာန်သို့ ‘ဝင်’ နိုင်တယ်။ ထို့ကြောင့် ကျွတ်မုန်းဝင်ဟု ရေးသားထားခြင်း ဖြစ်နိုင်သည်’ ဟု ဆိုထားကြောင်း ရှင်းပြပါသည်။

ဆေးဆရာကမူ ‘ကျွတ်’ ဆိုတာ ‘မိုကျွတ်’ ဟု၊ ‘မုန်း’ ဆိုတာ ‘သမုန်းကတိုးခေါက်’၊ ‘ဝင်’ဆိုတာ ‘သင်းဝင်ပေါက်ဖြူ’ ကိုပြောတာ၊ သုံးခွက်တစ်ခွက် ကျိုသောက်ရင် ဒုလ္လာပါဒရက်ပျောက်တယ်’ ဟု ရှင်းပြပါသည်။

အဂ္ဂိရတ်သမားကမူ ‘အဂ္ဂိရတ်စာပဲဗျ၊ ကျားမင်းကြွက်၌ ဆဒ္ဒန်ရိုက်က ပြာလျှင်ကျသည်။ မုချနိဗ္ဗာန်ဝင်ကြောင်းတည်းလို့ ဆိုထားသဗျ။ ‘ကျွတ်’ ဆိုတာ တနင်္လာနံ ‘ကျား’၊ ‘မုန်း’ ဆိုတာက ကြာသပတေးနံ ‘ကြွက်’ ကိုယူတာ၊ ‘ဝင်’ ဆိုတာ ဗုဒ္ဓဟူးနံ ‘ဆင်’ ကိုယူထားတဲ့ အဂ္ဂိရတ်စာပဲ’^၁ ဟု ပြောပါသည်။

အထက်ပါ သာဓကများကိုကြည့်လျှင် အတိုကောက်စကားလုံးများသည် မိမိတို့၏ ပတ်ဝန်းကျင်နှင့် လိုက်လျောညီထွေဖြစ်အောင် အနက်ကောက်ယူတတ်သော၊ ကောက်ယူနိုင်သော သဘောရှိခြင်း၊ လျှို့ဝှက်ချက်ရှိပြီး နီးစပ်သောအကြောင်းအရာဖြင့် အနက်ယူနိုင်ကြောင်းတို့ကြောင့် စကားလုံး၏အနက်ကို ရှုပ်ထွေးစေကြောင်း တွေ့ရပါသည်။

အမှန်တကယ်ရေးသော စိတ်မနှံ့သူနှင့်တွေ့သောအခါ ‘ကျွတ်’ဆိုတာ ‘သီတင်းကျွတ်’၊ ‘မုန်း’ဆိုတာ ‘တန်ဆောင်မုန်း’ ရောက်ရင်၊ ‘ဝင်’ ဆိုတာ ‘ဝင်္ကပါပွဲ’မှာ မုန့်ဟင်းခါးစားရတော့မယ်လို့ မှတ်ထားတာဗျ’ ဟုပြောကြောင်း ဆိုထားပါသည်။ ကြားရသူတို့မှာ ထင်ရာတွေးတတ်သော လူတို့၏ဘဝကို ရယ်ပြုံးဖွယ် တွေးမိခံစားမိစေပါသည်။

တစ်ဖန် မှော်ဘီ ဆရာသိန်း၏ ‘အရူးလွယ်အိတ်’စာအုပ်တွင်ပင်

“ဖြစ်ပလေထောက်အကိုးတွေနှင့် အမစ္စကျောက်ပေါက်မိုးငယ်တို့ အမျိုးမျိုး

မူပြန်တယ်”^၂

ဟု စပ်ဆိုထားသည်ကိုကြည့်လျှင် ‘ကျောက်’သည် ‘ကျောက်မြောင်းအတွင်းဝန်မင်း’ ကို ဆလိုခြင်း ဖြစ်ကြောင်း၊ ‘ပေါက်’ ဆိုသည်မှာ ‘ပေါက်မြိုင်အတွင်းဝန်မင်း’ ကို ဆလိုခြင်း ဖြစ်ကြောင်း၊ ‘မိုး’ ဆိုသည်ကမူ ‘မိုးတားဝန်မင်း’ ကို ဆလိုခြင်းဖြစ်ကြောင်း သိရပါသည်။

၂။ ၇။ စကားလုံးအစား ဗျည်းကိုယူ၍ အတိုကောက်အသုံးပြုမှုများ

^၁ မြတ်လှ၊ ဦး၊ ၁၉၉၂၊ ၄၄-၄၆။

^၂ သိန်းကြီး၊ ဆရာ (မှော်ဘီ-)၊ ၁၉၆၇၊ ၃၆၀-၃၆၁။

စကားလုံးများတွင်ပါဝင်သောစာလုံးများကို ‘အ’သရုပ်စံအသုံးပြု၍ သိသိသာသာတို့သွားစေသော စကားလုံးများကိုလည်း အသုံးပြုကြကြောင်းတွေ့ရပါသည်။ မြန်မာနိုင်ငံသားဖြစ်ကြောင်းမှတ်ပုံတင်ရာတွင် မှတ်ပုံတင်နံပါတ်ကိုဖော်ပြရာ၌ မှတ်ပုံတင်ပိုင်ရှင်နေထိုင်ရာ မြို့နယ်မြို့နယ်အမည် သို့မဟုတ် မှတ်ပုံတင်ပြုလုပ်ရာမြို့နယ်အမည်ကို အတိုကောက်ရေးပြီး ဖော်ပြကြပါသည်။ သာဓကအားဖြင့် ကမာရွတ်မြို့နယ်တွင် မှတ်ပုံတင်ပြုလုပ်ပါက ‘ကမရ’ ဟူသော အတိုကောက်ဖြင့် မှတ်သားကြသည်ကို တွေ့ရပါသည်။ ထို့အတူ ကြည့်မြင်တိုင်မြို့နယ်ကို ‘ကမတ’၊ စမ်းချောင်းမြို့နယ်ကို ‘စခ’၊ ဗဟန်းမြို့နယ်ကို ‘ဗဟန’၊ ရန်ကင်းမြို့နယ်ကို ‘ရကန’ဟု မှတ်သားကြသည်ကို ကြည့်လျှင် သိနိုင်ပါသည်။ ထိုကဲ့သို့ အတိုကောက်ပြုလုပ်နည်းကို စာမေးပွဲခုံအမှတ်များ ဖော်ပြရာတွင်လည်း အစဉ်အဆက် အသုံးပြုခဲ့ကြကြောင်း တွေ့ရပါသည်။ ‘ပထမနှစ်သင်္ချာ’ ကို ‘သခ’၊ ‘ဒုတိယနှစ်မြန်မာစာ’ကို ‘၂မ’၊ ‘တတိယနှစ်သမိုင်း’ကို ‘၃မ’၊ ‘စတုတ္ထနှစ် ရုက္ခဗေဒ’ကို ‘၄ရခ’၊ ‘ပဉ္စမနှစ်ဥပဒေ’ကို ‘၅ဥ’ စသည်ဖြင့် အတိုကောက် အသုံးပြုကြကြောင်း တွေ့ရပါသည်။

မြန်မာ့လူမှုဆက်ဆံရေးတွင် အတိုကောက်အသုံးများကို လျှို့ဝှက်သည့်အနေဖြင့် အသုံးပြုကြသည်ကိုလည်း တွေ့ရပါသည်။ အချင်းချင်းနားလည်မှုဖြင့်ပြုလုပ်သည်ကို ‘နလမ’၊ မလိုတစ်မျိုးလိုတစ်မျိုး ပြုတတ်သည်ကို ‘မလတမ လတမ’ ဟု ပြောတတ်ကြောင်း သိရပါသည်။ ဗမာ့ခေတ်သတင်းစာ၌ပင် ‘ပြည်သူ့လွတ်လပ်ရေးတပ်မတော် ဗိုလ်ကျဦး’ ကို ‘ပသလလရတမတ ဗိုလ်ကျဦး’ ဟု ရေးသားထားသည်ကို တွေ့ရပါသည်။

ရှေးမြန်မာပညာရှိကြီးများသည် မှတ်သားလိုသည့်အကြောင်းအရာများကို မိမိတို့စိတ်တွင် စွဲမြဲစွာမှတ်မိနိုင်စေရန်နှင့် နောင်လာနောက်သားများသိရှိနိုင်စေရန် ဗျည်းအက္ခရာနှင့် နေ့နံဖလှယ်သည့် အတိုကောက်စကားလုံးများဖြင့် မှတ်သားကြသည်မှာလည်း အစဉ်အဆက်နည်းလမ်း တစ်ခုဖြစ်ကြောင်း သိရပါသည်။ အက္ခရာတို့၏ နေ့နံသင်္ချာနှင့်ပညတ်အမည်များကို မှည့်ခေါ်ရာတွင် အက္ခရာတို့အပေါ် ယူဆချက်များရှိပါသည်။ အက္ခရာတို့၏ နေ့နံသင်္ချာတို့မှာ

(၁) အ၊ အာ၊ ဣ၊ ဤ၊ ဥ၊ ဦ၊ ဧ၊ ဩ	- တနင်္ဂနွေ	- (၁) ဂဏန်း
(၂) က၊ ခ၊ ဂ၊ ဃ၊ င	- တနင်္လာ	- (၂) ဂဏန်း
(၃) စ၊ ဆ၊ ဇ၊ ဈ၊ ည	- အင်္ဂါ	- (၃) ဂဏန်း
(၄) ယ၊ လ၊ ဝ	- ဗုဒ္ဓဟူး	- (၄) ဂဏန်း
(၅) ပ၊ ဖ၊ ဗ၊ ဘ၊ မ	- ကြာသပတေး	- (၅) ဂဏန်း
(၆) သ၊ ဟ	- သောကြာ	- (၆) ဂဏန်း
(၇) ဇူ၊ ဌ၊ ဍ၊ ဎ၊ ဏ၊ တ၊ ထ၊ ဒ၊ ဓ၊ န	- စနေ	- (၇) ဂဏန်း
(၈) ရ၊ ဠ	- ရာဟု	- (၈) ဂဏန်း

ဟူ၍ ဖြစ်ပါသည်။

အထက်ပါကဲ့သို့ မြန်မာတို့အစဉ်အလာအရ မှတ်သားအသုံးပြုလေ့ရှိသော မြန်မာမှုဆိုင်ရာ

^၁ ဗမာ့ခေတ်သတင်းစာ၊ ၁၉၄၈၊ ၇။

အတိုကောက်အသုံးများကို တွေ့ရသကဲ့သို့ မြန်မာတို့၏ လူမှုပတ်ဝန်းကျင်တွင် နေ့စဉ်နှင့်အမျှ အသုံးပြုရေးသားပြောဆိုနေကြသော အတိုကောက်အသုံးများကိုလည်း တွေ့ရပါသည်။

၃။ နေ့စဉ်လူမှုပတ်ဝန်းကျင်ဆိုင်ရာ အတိုကောက်စကားလုံးအသုံးပြုမှုများ

မြန်မာတို့၏ လူမှုဘဝပတ်ဝန်းကျင်တွင် ဘာသာစကားကို နေ့စဉ်အသုံးပြုရာ၌ သူ့နေရာနှင့်သူ သူ့ပတ်ဝန်းကျင်နှင့်သူ ကာလဒေသအလိုက်ပြောဆိုပုံတို့ မတူညီသကဲ့သို့ စကားလုံးများကို အသုံးပြုပုံချင်းလည်း မတူကြပေ။ သို့သော် မိမိပြောလိုသောစကားကို နားထောင်သူ သို့မဟုတ် စာပေဖတ်ရှုသူများအား ထိထိရောက်ရောက် သိရှိစေလိုသောဆန္ဒမှာ တူညီကြပါသည်။ ထို့ကြောင့် မိမိဆိုလိုချက်ကို အချန်တိုတိုအတွင်းသိရှိစေရန်နှင့် မှတ်သားရလွယ်ကူစေရန် အတိုကောက် စကားလုံးများ အသုံးပြုခြင်းသည် တွင်ကျယ်သောအသုံးပြုမှုတစ်ရပ် ဖြစ်လာသည်။

အတိုကောက်စကားလုံးများသည် နည်းအမျိုးမျိုးဖြင့် အကြောင်းအရာ အမျိုးမျိုးအတွက် အသုံးပြုခဲ့ကြသော်လည်း ရေးကသတင်းစာ၊ ဂျာနယ်၊ မဂ္ဂဇင်းစသည့် အတည်အခံ စာကြီးပေကြီး များတွင် အတိုကောက်စကားလုံး အသုံးနည်းကြောင်း တွေ့ရပါသည်။ မျက်မှောက်ခေတ်တွင်မူ စာပေများတွင် အတိုကောက်စကားလုံးများကို မြန်မာလိုရော အင်္ဂလိပ်လိုပါ တွင်တွင်ကျယ်ကျယ် အသုံးပြုနေကြပြီဖြစ်ကြောင်း တွေ့ရပါသည်။

၃.၁။ မြန်မာစကားလုံးအတိုင်း အတိုကောက်အသုံးပြုမှုများ

လူမှုပတ်ဝန်းကျင်တွင် နေ့စဉ်အသုံးပြုလျက်ရှိသော အပြောဘာသာစကားနှင့် နေ့စဉ် အပတ်စဉ် ထုတ် သတင်းစာ ဂျာနယ်များတွင် မြန်မာစကားလုံးအတိုင်း အတိုကောက်အသုံးပြုမှုများကို တွေ့ရပါသည်။ သာဓကများဖြင့် တင်ပြလိုပါသည်။

“မြန်-စာ-ပြန့် သည် မြဝတီအနှစ် ၂၀၀ ပြည့်ပွဲ ကျင်းပစဉ်က မြဝတီမင်းကြီး မည်သော စာအုပ်ကို ထုတ်နိုင်ခဲ့၏။”^၁

ဟု ရေးသားထားရာ ‘မြန်-စာ-ပြန့်’ ဟူသောစကားလုံးသည် ‘မြန်မာနိုင်ငံစာပေပြန့်ပွားရေး အသင်း’ ကို အတိုကောက်ပြုထားသော စကားလုံးဖြစ်ပါသည်။ ထိုသို့သောအသုံးမျိုးကို ယခုအခါ နေ့စဉ်၊ အပတ်စဉ်၊ လစဉ်ထုတ်စာပေများတွင် ရေးသားလာပြီဖြစ်ကြောင်း တွေ့ရပါသည်။

“ကုလတွင် စောင့်ကြည့်လေ့လာသူအဆင့်ဖြင့်ပါဝင်ခွင့်ရရန် နိုဝင်ဘာ ၂၉တွင် ပါလက်စတိုင်း အဆိုတင်သွင်းမည်။”^၂

“ကုလမှူးချုပ်၏ အကြံပေးအမှန်အကန်မြင်သွား ရခိုင်အရေးကိစ္စ ကြေညာချက်ထုတ်၍ဖော်ပြ”^၃

^၁ မြန်မာနိုင်ငံစာပေပြန့်ပွားရေးအသင်း စာစဉ် (၈)၊ ၁၉၇၀၊ ကု။

^၂ Messenger, vol.3, 2012, 16.

^၃ ဟေမာန်အောင်၊ ၂၀၁၂၊ ၁၉။

ဟု သတင်းစာဂျာနယ်တို့တွင် ခေါင်းစဉ်များအဖြစ် ထင်ထင်ရှားရှားအသုံးပြုထားသည်ကို တွေ့ရပါသည်။ ဤတွင် ‘ကုလသမဂ္ဂ’ ဟူသောစကားလုံးကို ‘ကုလ’၊ ‘အထွေထွေအတွင်းရေးမှူးချုပ်’ ဟူသော စကားလုံးကို ‘မှူးချုပ်’ဟု အတိုကောက်ပြုလုပ်ထားသည်ကို တွေ့ရပါသည်။ ထိုအတိုကောက်များကို အပြောတွင်မသုံးသော်လည်း အရေးတွင်မူ အသုံးများလာကြောင်း တွေ့ရပါသည်။ ထို့အတူ

“ပြောင်းရွှေ့ပေးရန် သတိပေးခံထားရသည့် ကျူး ၄ ဖွဲ့အတွက် မြေနေရာ

ပြန်လည်ရရှိရေးကော်မတီ ဖွဲ့စည်း”^၁

ဟူသော ဖော်ပြချက်တွင် ‘ကျူးကျော်နေထိုင်သူ’ များကို ‘ကျူး’ ဟု အတိုကောက်ရေးသားထားသည်ကို တွေ့ရပါသည်။ တစ်ဖန်

“နိုင်ငံလုံးဆိုင်ရာ ဒီချုပ်ညီလာခံ ဖေဖော်ဝါရီနောက်ဆုံးပတ် ကျင်းပမည်။”^၂

ဟု ရေးရာတွင်လည်း ‘ဒီချုပ်’ ဟူသောအသုံးသည် ‘အမျိုးသားဒီမိုကရေစီအဖွဲ့ချုပ်’ ဟူသော အသုံးကို အတိုကောက်ပြုထားကြောင်း သိနိုင်ပါသည်။ ထိုနည်းတူစွာပင်

“လစ်လပ်နေသော ပြည်ထောင်စုဒုဝန်ကြီး သုံးနေရာ ယခုလွှတ်တော်

အစည်းအဝေးများတွင် ခန့်အပ်ရန်။”^၃

ဟူသော အသုံးတွင် ‘ပြည်ထောင်စုဒုတိယဝန်ကြီး’ ကို ‘ပြည်ထောင်စုဒုဝန်ကြီး’ ဟု သုံးထားသည်မှာလည်း အတိုကောက်အသုံးပင် ဖြစ်ပါသည်။ တစ်ဖန်

“မန်းရှိ အဝေးပြေးကုန်တင်ယာဉ်ရပ်နားစခန်း ကုန်တင်ဂိတ်များ ထပ်မံ

တည်ဆောက်”^၄

ဟူသောအသုံးတွင်လည်းကောင်း၊

“ဇွန်လ ၃၀ ရက်နေ့ ညနေပိုင်း ၃ နာရီအချိန်တွင် မန္တလေးမြို့ မြူနီစပယ်ခန်းမ

ဆောင်ကြီး၌ မန်းမြူကော်မတီလူကြီးများ၏ လပတ်မြူအစည်းအဝေးကြီးကို

ကျင်းပပြုလုပ်ရာသန့်ရှင်းနှင့်တည်မြဲလူကြီးများ အကြိတ်အနယ်ဆွေးနွေးကြ၏။”^၅

ဟူသောအသုံးတွင်လည်းကောင်း၊ ပါဝင်သော ‘မန်း’ သည် ‘မန္တလေး’ ကို ဆိုလိုခြင်းဖြစ်ပြီး ‘မန္တလေးမြူနီစပယ်ကော်မတီလူကြီးများ’ ကို ‘မန်းမြူ’ ဟု အတိုကောက်သုံးထားခြင်းဖြစ်သည်။ ‘မြူ’သည် ‘မြူနီစပယ်’ကို ဆိုလိုသည့်အတိုကောက်စကားလုံးအဖြစ် ပြုလုပ်ထားသော စကားလုံးဖြစ်ပါသည်။ နေ့စဉ်သုံးသတင်းစာများတွင်လည်းကောင်း၊ အပတ်စဉ်ထုတ် ဂျာနယ်များတွင်လည်းကောင်း အတိုကောက်စကားလုံးများကို တွင်တွင်ကျယ်ကျယ် အသုံးပြုလာကြပြီဖြစ်ကြောင်း တွေ့ရပါသည်။ ထို့အပြင်

^၁ Messenger, volume.3,2012, 1.

^၂ 7 day news Journal, vol. 11, c.

^၃ Ibid, 2။

^၄ Voice, volume.8,2012, 16.

^၅ ဗမာ့ခေတ်၊ အတွဲ ၂၅၊ အမှတ် ၂၉၅၊ ၁၉၅၉၊ ၉။

“ကန်လူထုကို အထင်မသေးနဲ့ ဒုသမ္မတနစ်ဆင်က ရုရှဒုသမ္မတ ဧည့်ခံပွဲ၌ ပြောခြင်း”^၁

ဟူသောအသုံးတွင်လည်းကောင်း၊

“အင်းအိုင်တွင်း ငါးများကို လူစုလူဝေးနှင့် ဖမ်းယူစားသောက်သူများအား တစ်နပ် စား ညဉ့်ရှိသူများဟု မွေး/ရေ ဒုဝန်ကြီးပြော”^၂

ဟူသောအသုံးတွင်လည်းကောင်း၊

“ကာချုပ်နှင့်ကေအင်န်ယူခေါင်းဆောင်များ နှစ် ၅၀ ကျော်အတွင်း ပထမဆုံး အကြိမ်တွေ့”^၃

ဟူသော အသုံးတွင်လည်းကောင်း အမေရိကန်ပြည်သူလူထုကို ‘ကန်လူထု’၊ ဒုတိယသမ္မတကို ‘ဒုသမ္မတ’၊ မွေးမြူရေးနှင့် ရေလုပ်ငန်းကို ‘မွေး/ရေ’၊ ဒုတိယဝန်ကြီးကို ‘ဒုဝန်ကြီး’၊ ကာကွယ်ရေး ဦးစီးချုပ်ကို ‘ကာချုပ်’ဟု အတိုကောက်အသုံးများဖြင့် သုံးထားသည်ကို တွေ့နိုင်ပါသည်။ ထို့ပြင်

“အဖွဲ့ ၄ ဖွဲ့ပါဝင်ဖွဲ့စည်းထားသည့် နယ်စပ်ဒေသ၊ လူဝင်မှုစစ်ဆေးရေး ကွပ်ကဲမှု ဌာနချုပ် (နစက) ဖျက်သိမ်းလိုက်ပြီးနောက် ...နယ်စပ်လုံခြုံရေး တာဝန်များကို အမှတ် (၄) ရဲတပ်ရင်းများ ကွပ်ကဲရေးမှူးအဖွဲ့မှူး (ရကဖ)က တာဝန်ယူ ဆောင်ရွက်ခဲ့ပြီး လူဝင်လူထွက်ကိစ္စရပ်များကို နိုင်ငံခြားသားများမတရားဝင် ရောက်မှု ကာကွယ်တားဆီးရေးအဖွဲ့(မကဖ) ကတာဝန်ယူ ဆောင်ရွက်နေပြီး”^၄

ဟုလည်းကောင်း၊

“ရန်ကုန်တက္ကသိုလ် ကျောင်းသားများသမဂ္ဂ(တ-က-သ)/ ဗမာနိုင်ငံလုံးဆိုင်ရာ ကျောင်းသားများသမဂ္ဂ (ဗ-က-သ) ဥက္ကဋ္ဌဦးရာရှစ်ရာပြည့် အထိမ်းအမှတ် အခမ်းအနား ကျင်းပပေး”^၅

ဟုလည်းကောင်း ရေးသားထားသည်များကိုကြည့်လျှင် အတိုကောက်အသုံးချည်းသီးသန့်မဟုတ်ဘဲ အနက်အဓပ္ပာယ် အပြည့်အစုံဖြစ်သော မူရင်းစကားလုံးများနှင့် အတိုကောက်စကားလုံးများတွဲ၍ အသုံးပြုကြသည်ကိုလည်း တွေ့ရပါသည်။

တစ်ဖန် စကားလုံးကို အတိုကောက်ပြုခြင်းမဟုတ်ဘဲ အကြောင်းအရာကိုအတိုချုံ့ထားသော အတိုကောက်စကားလုံးကိုလည်း တွေ့ရပါသည်။ မိုးရာသီမတိုင်မီ အကြိုကာလကို ‘မိုးကြို’ ဟု အတိုကောက်သုံးထားပုံကို

“မိုး/လေနှင့် မိုးလေဝသပညာရှင်တို့မှာ ၂၀၁၁ ခုနှစ် မိုးကြိုကာလတွင်လည်း ဘင်္ဂလားပင်လယ်အော်၌မုန်တိုင်းဖြစ်နိုင်ကြောင်းခန့်မှန်းခဲ့ကြပြီး လက်တွေ့တွင် မုန်တိုင်းဖြစ်ပွားခဲ့ခြင်း မရှိပေ။”^၆

^၁ ဗမာ့ခေတ်၊ အတွဲ ၂၅၊ အမှတ် ၂၉၄၊ ၁၉၅၉၊ ၂။

^၂ 7 day news Journal , 2013, 1.

^၃ Ibid, 11။

^၄ မောင်ကံ (မောင်တော)၊ ၂၀၁၃၊ ၁၄။

^၅ Health care Journal, vol.3, 2012,1.

^၆ 7day news Journal, vol.10, 2011, 12.

ဟူသော အသုံးတွင် တွေ့နိုင်ပါသည်။ ထို့ပြင် ‘မိုးလေဝသနှင့် ဇလဗေဒပညာရှင်’ ကို ‘မိုး/လေ’ ဟု အတိုကောက်သုံးထားသည်ကိုလည်း တွေ့ရပါသည်။ ထို့အတူ

“ဘာသာရပ်ဆိုင်ရာ ထက်/လယ်/မူ ဆရာဆရာမများအတွက် သင်ကြားမှု အထောက်အကူဖြစ်စေရန် ဘာသာရပ်ဆိုင်ရာသဘောထားများကို တင်ပြ ဆွေးနွေးရန် ဖြစ်သည်။”^၁

ဟု ဖော်ပြထားရာတွင်လည်း ‘အထက်တန်းပြ၊ အလယ်တန်းပြ၊ မူလတန်းပြ’ ဟူသော အသုံးတို့ကို ‘ထက်/လယ်/မူ’ ဟူ၍ မျဉ်းစောင်းခံကာ အတိုကောက်ရေးသားထားပုံမျိုးကိုလည်း နေ့စဉ်အသုံးပြု နေကြကြောင်းတွေ့ရပါသည်။ ဤအတိုကောက်အသုံးပြုမှုမျိုးကို ကြေးမုံသတင်းစာ၊ မြန်မာ့အလင်း သတင်းစာ စသော နိုင်ငံပိုင်သတင်းစာများတွင်ပင် အသုံးပြုလျက်ရှိနေကြောင်း တွေ့ရပါသည်။

၃။ ၂။ မွေးစားစကားလုံးအတိုကောက်အသုံးပြုမှုများ

ယနေ့ခေတ်သည် အိုင်တီခေတ်ဟုဆိုထားသည့်အလျောက် မြန်မာမှုနယ်ပယ်တွင် မြန်မာဘာသာ စကားအတိုကောက်အသုံးများသာမက နိုင်ငံတကာသုံး အင်္ဂလိပ်ဘာသာစကားမှ မွေးစားထားသော အတိုကောက်အသုံးများကိုလည်း အကြောင်းအရာများစွာအတွက် နေရာအနှံ့အပြားတွင် တွင်တွင် ကျယ်ကျယ် အသုံးပြုနေကြသည်ကို တွေ့ရပါသည်။ သာဓကအားဖြင့်

“... SNLD သည် ၁၉၉၈ ခုနှစ်၊ အောက်တိုဘာလ ၂၁ ရက်နေ့တွင် နိုင်ငံရေး ပါတီအဖြစ် မှတ်ပုံတင်လျှောက်ခဲ့ပြီး ၂၆ ရက်နေ့တွင် ခွင့်ပြုချက်ကျ၍ ပါတီ ထူထောင်ခြင်းနေ့အဖြစ် သတ်မှတ်”^၂

ဟုလည်းကောင်း၊

“ပြည်ပမှ ကူမင်တန် (KMT) ကျူးကျော်မှုလည်း ရှိခဲ့သည်။”^၃

ဟုလည်းကောင်း၊

“အလုပ်သမားအဖွဲ့အစည်းခေါင်းဆောင်များ ရင့်ကျက်မှုရှိရန် လိုအပ်ဟု ILO က သုံးသပ်”^၄

ဟုလည်းကောင်း၊

“ဆရာဝန်အစည်းအဝေးမှ OG ward က တင်ပြတဲ့အခါ လူနာကို အချိန်မီမလွဲလို့ နောက်ကျသွားတာဆိုပြီး ဆရာဝန်မကြီးက မူလဆရာဝန်ကို အပြစ်တင်ပါတယ်”^၅

ဟုလည်းကောင်း၊

“အာဆီယံမစ်စီးပွားရေးနှင့် ရင်းနှီးမြှုပ်နှံမှုဆိုင်ရာ ဆွေးနွေးပွဲများတွင် မြန်မာနိုင်ငံ ၏ ICT အခြေအနေများ ဆွေးနွေးမည်။”^၆

^၁ ပညာတန်ဆောင်၊ အတွဲ ၂၇၊ ၁၉၇၈၊ ၇။

^၂ Vioice, vol.8, 2012, B.

^၃ Vioice, vol.8., 2011, 12.

^၄ မြန်မာ့ဂိုဏ်း ၂၀၁၂၊ ဘီ။

^၅ Health care Journal, vol.3, 2012, 22.

ဟုလည်းကောင်း မွေးစားစကားလုံးအတိုကောက်များအသုံးပြုထားသည်ကို တွေ့နိုင်ပါသည်။

သာဓကများကို လေ့လာကြည့်လျှင် SNLD သည် Shan National Democracy ဟူသော စကားစုမှ စာလုံးအချို့ကိုယူကာ အတိုကောက်ပြုလုပ်ထားကြောင်း တွေ့ရပါသည်။ KMT မှာမူ Kuomintang ဟူသော စကားလုံး၏အသံတစ်သံစီကို ကိုယ်စားပြုထားသော အက္ခရာများယူ၍ အတိုကောက် ပြုလုပ်ထားခြင်းဖြစ်ပါသည်။ ILO ဟူသော အတိုကောက်စကားလုံးမှာလည်း International Labour Organization ဟူသော အင်္ဂလိပ်စကားလုံး၏အစစာလုံးများကိုယူ၍ အတိုကောက်ပြုထားခြင်းဖြစ်ကြောင်း တွေ့ရပါသည်။ ထို့အတူ OG ward ဟူသော အတိုကောက် စကားလုံးသည် Obstetrics and Gynaecology ဟူသော စကားလုံးကို လည်းကောင်း၊ ICT ဟူသော အတိုကောက်စကားလုံးသည် Information and Computer Technology ဟူသော စကားလုံးကိုလည်းကောင်း အတိုကောက်ပြုကာ အသုံးပြုကြသည်ကို တွေ့ရပါသည်။

၃။ ၃။ ဗန်းစကား အတိုကောက်အသုံးပြုမှုများ

တစ်ခါတစ်ရံ ဗန်းစကားများဖြင့် အတိုကောက်ပြုကာအသုံးပြုကြသည်ကို တွေ့ရပါသည်။ ဖြစ်သလိုနေတတ်၊ ပြောတတ်သည်ကို ‘ပရမ်းပရာ(ပရမ်းပတာ)’ဟုပြောလေ့ရှိသည်။ ထိုသို့ပြော သည်ကို ယခုခေတ်လူငယ်များက BYBY ဟု အင်္ဂလိပ်နှင့် ဖလှယ်ကာ အတိုကောက်အသုံးပြုကြ သည်ကို တွေ့ရသည်။ ထို့အတူ တောက်တိုမယ်ရ ခိုင်းသည့်အတိုင်း လုပ်ဆောင်ပေးရသည့်သူကို TMY ဟု အသုံးပြုပြောဆိုကြသည်ကိုလည်းသိရပါသည်။ မြန်မာမှုနယ်ပယ်တွင် ‘ချိုသောဆိမ့် သော လက်ဖက်ရည်’ကို ‘ချိုဆိမ့်’၊ ‘ကြက်ဥနှင့်ပေါင်မုန့်ကြော်’ကို ‘ကြက်ပေါင်’၊ ‘ကြက်ဥနှင့် ခေါက်ဆွဲကြော်’ကို ‘ကြက်ခေါက်’၊ ‘မသိအောင်ယူထားသောငွေ’ကို ‘ဘတ်ငွေ’၊ ‘မုန့်ဟင်းခါးနှင့် ပဲကြော်’ကို ‘မုန့်ပဲ’၊ ‘ညှပ်ခေါက်ဆွဲနှင့်ဘူးသီးကြော်’ကို ‘ညှပ်ဘူး’ဟူသော ဗန်းစကား အတိုကောက် အသုံးများကိုလည်း နေ့စဉ်အပြောတွင်ရော အရေးတွင်ပါ တွေ့နိုင်ပါသည်။

၃။ ၄။ အင်တာနက်သုံး အတိုကောက်အသုံးပြုမှုများ

အင်တာနက်မှ တစ်ဦးနှင့်တစ်ဦး စာများရေးသားပေးပို့ပြောဆိုခြင်းကို နေ့စဉ်နှင့်အမျှ ပြုလုပ်နေကြရာတွင် မြန်မာဘာသာစကားသက်သက်ဖြင့်သာမက အင်္ဂလိပ်ဘာသာစကားဖြင့် လည်းကောင်း၊ အင်္ဂလိပ်-မြန်မာနှစ်ဘာသာတွဲ၍လည်းကောင်းရေးသားကြသည်ကိုတွေ့ရပါသည်။ ဖေ့စ်ဘွတ်ခ် (facebook)ကို fb၊ သူငယ်ချင်းကို ‘သယ်ချင်း သို့မဟုတ် သယ်ရင်း’ဟုလည်းကောင်း၊ fri ဟုလည်းကောင်း၊ အစ်မ၊ ညီမကို sis၊ အစ်ကို၊ မောင် ကို bro၊ ကျေးဇူးတင်ပါသည် ကို thzi၊ ကျေးဇူးပြု၍ ကို plzi၊ မန္တလေးကို ‘မန်းလေး’ ဟုလည်းကောင်း၊ MDY ဟု လည်းကောင်း၊ အေးပါကွာ ကို apk ဟုလည်းကောင်း အတိုကောက် ရေးသားကြသည်ကို တွေ့ရပါသည်။

ထို့အတူ အင်္ဂလိပ်ဘာသာစကားကို အသံတူ အခြားသောအင်္ဂလိပ်စာလုံးများ၊ အသံတူ အင်္ဂလိပ်ကိန်းဂဏန်းများ အစားထိုး၍ အတိုကောက်ပြုလုပ်ကာ အသုံးပြုကြသည်ကိုလည်း တွေ့ရ

^၁ 7 day Journal, vol. 13, 2011, 20.

ပါသည်။ ‘တွေ့ကြမယ်’ ဟူသော အဓိပ္ပာယ်ကို အင်္ဂလိပ်ဘာသာဖြင့် ‘see you’ ဟု ပြော၍စာဖြင့် ဆက်သွယ်ရာတွင် အချိန်နှင့်နေရာကိုခွဲကွက်သောအားဖြင့် အသံနီးစပ်မှုရှိသော အင်္ဂလိပ်စကားလုံး ဖြင့် အစားထိုးကာ ‘cu’၊ ‘မင်းအတွက်’ဟူသော အဓိပ္ပာယ်ကို အင်္ဂလိပ် ဘာသာဖြင့် ‘for you’ ဟု အသုံးပြုပြီးရေးသားရာတွင် ‘4 u’၊ ‘အလွန်နောက်ကျသည်’ကို ‘too late’ဟု ရေးရမည့်အစား ‘2 1 8’၊ ‘ငါ့ကိုမမေ့ပါနှင့်’ဟူသောစကားကို ‘forget me’ ဟု သုံးရမည့်အစား ‘4 GM’ ဟု အသံတူ အင်္ဂလိပ် စကားလုံးများ၊ ကန်းဂဏန်းများအစားထိုးကာအသုံးပြုရေးလေ့ရကြောင်းသိရပါသည်။ ယနေ့ခေတ် ဆက်သွယ်မှုကွန်ရက်များ တွင်ကျယ်လာသည်နှင့်အမျှ အသုံးတွင်ကျယ်လာသော အတိုကောက် စကားလုံးအသုံးပြုမှုပင်ဖြစ်ပါသည်။ သို့သော် ထိုအတိုကောက်အသုံးပြုပုံမျိုးသည် မြန်မာဘာသာ စကားကို ပျက်ယွင်းစေသည့် အန္တရာယ်ရှိသောကြောင့် ထိန်းသိမ်းသင့်ပါသည်။

ဤသို့ဖြင့် ရှေးမြန်မာပညာရှိကြီးများ၏ မှတ်သားဖွယ်ရာအတိုကောက်စကားလုံးများဖြင့် ဖွဲ့ထားသောလင်္ကာများမှသည် သိပ္ပံနှင့်နည်းပညာ ဖွံ့ဖြိုးတိုးတက်သော ကျွန်ုပ်တို့၏ခေတ်ထိတိုင် လူငယ် လူရွယ် လူကြီးအားလုံးသည် ခေတ်နှင့်အညီ လိုက်လျောညီထွေဖြစ်စေမည့် အတိုကောက် စကားလုံးများက အသုံးပြု၍ မှတ်သားလေ့ရှိကြကြောင်း လေ့လာတွေ့ရှိရပါသည်။

ခြုံငုံသုံးသပ်ချက်

လူတို့သည် မိမိတို့ရေးသားပြောဆိုနေသော ဘာသာစကားကို အသုံးပြုကြရာတွင် မိမိဆိုလိုသည့် အဓိပ္ပာယ်ကို နားထောင်သူ (ကြားနာသူ)၊ ဖတ်ရှုသူတို့ လွယ်ကူထိမိစွာ နားလည်သဘောပေါက် စေရန် စကားလုံးများကို ပုံစံအမျိုးမျိုးပြုလုပ်ကာ အသုံးပြုကြသည်ကို တွေ့ရပါသည်။ ထိုသို့ အသုံးပြုကြရာတွင် မိမိတို့ဘာသာစကားအလျောက် ခေါ်ဝေါ်အသုံးပြုကြသော စကားလုံး ဝေါဟာရတို့ကို စကားလုံးပြည့်မဟုတ်ဘဲ အတိုကောက်စကားလုံးများအဖြစ် ဖန်တီးပြုလုပ် ပြောဆိုကြပါသည်။

ထို့ပြင် အတိုကောက်စကားလုံးအသုံးပြုခြင်းကြောင့် ဘာသာစကားပြောင်းလဲမှုကိုဖြစ်ပေါ် စေပါသည်။ အတိုကောက်စကားလုံးကို အပြောဘာသာစကားတွင်ရော အရေးဘာသာစကားတွင် ပါ တွေ့ရပါသည်။ သို့သော် အချို့အတိုကောက်စကားလုံးများကို ခံ့ညားထည်ဝါစွာ ပြောဆို ရေးသားရမည့်အခါတွင် အသုံးမပြုဘဲနှင့် ရုံးလုပ်ငန်းသုံးစာအမှတ်များ ရေးသားရာတွင်သာသုံး ကြောင်း အရပ်သုံးဆန်သော အသုံးဖြစ်ကြောင်း တွေ့ရပါသည်။

ဘာသာစကား၏ သဘောသဘာဝအရ အချိန်ကာလပြောင်းလဲမှုကြောင့် ဖြစ်စေ၊ အချိန်ကိ လုပ်ငန်းရသည့်အခါ၌ဖြစ်စေ မြန်မြန်နှင့်တိုတိုဖြစ်စေသော အတိုကောက်စကားလုံးများကို အသုံးပြု ကြကြောင်း တွေ့ရပါသည်။

မြန်မာဘာသာစကားတွင်လည်း မြန်မာဘာသာစကား စတင်ပေါ်ထွန်းသော ပုဂံခေတ် ကတည်းကပင် အတိုကောက်စကားလုံးအသုံးပြုမှုများရှိခဲ့ကြောင်း ကျောက်စာအထောက်အထား များအရ သိရပါသည်။ ပုဂံခေတ်ကျောက်စာများတွင် အဓိပ္ပာယ်ထိမိပေါ်လွင်စေသော လုံးချင်း စကားလုံးများကို အဓိကအသုံးပြုကြခြင်းသည် အတိုကောက်စကားလုံး သုံးရန်အစဖြစ်သည်ဟုပင် ဆိုနိုင်ပါသည်။

ပုဂံခေတ်ကျောက်စာများရေးထိုးကြရာတွင် ဗျည်းအက္ခရာများဆင့်ရေးထားခြင်း၊ ၂ ဂဏန်း အစားထိုးကာနေရာကျုံ့စေခြင်းတို့သည် စာလုံးအရေအတွက်အားဖြင့် လျော့နည်းမသွားသော် လည်း နေရာအနေအထားကို ကျဉ်းသွားနည်းသွားစေကြောင်း၊ သင်္ကေတများ အစားထိုးခြင်းသည် စာလုံးရေးရမည့် အချိန်နှင့် နေရာကို သက်သာလျော့နည်းစေကြောင်း တွေ့ရပါသည်။

ကျောက်စာပေစာများတွင် အတိုကောက်များ အသုံးပြုရေးသားသော်လည်း ကိုလိုနီခေတ် မတိုင်မီအချိန်အထိ စာကြီးပေကြီးများတွင် အတိုကောက်ရေးသား အသုံးပြုမှုမှာ အလွန်နည်းပါး ကြောင်း၊ နှုတ်ပြောစကားများနှင့် ဆေးကျမ်းများ၊ ဗေဒကျမ်းများ လောကတွင်သာ စကားလုံး အတိုကောက်များသုံးကြောင်းတွေ့ရပါသည်။ ကိုလိုနီခေတ်နှောင်းပိုင်းမှစ၍အတိုကောက်စကားလုံး များကို တွင်တွင်ကျယ်ကျယ် အသုံးပြုလာကြကြောင်း တွေ့ရပါသည်။

လူမှုဆက်ဆံရေးတွင် စာပေးစာယူစနစ်ကိုကျင့်သုံးရာ စာတိုက်မှစာကို ရိုးရိုးပေးပို့ခြင်း ထက် ပိုမိုမြန်ဆန်စေရန် ကြေးနန်းစာများကို ကုန်းဘောင်ခေတ်နှောင်းပိုင်း ယောမင်းကြီးကစ၍ အသုံးပြုခဲ့ကြခြင်းဖြစ်ပါသည်။ ကြေးနန်းစာများ တွင် ‘အ’ သရပြု အတိုကောက်စကားလုံးများ အသုံးများသည်ကို တွေ့ရပါသည်။ ယခုခေတ် ဆက်သွယ်မှုကွန်ရက်များ ပိုမိုဖွံ့ဖြိုးတိုးတက်လာ ချိန်၊ အီလက်ထရောနစ်စနစ်များ ကျယ်ပြန့်ထွန်းကား လာချိန်တွင် အတိုကောက်စကားလုံးများကို ပို၍ အသုံးများလာကြောင်း တွေ့ရပါသည်။ တယ်လီဖုန်းဖြင့် စာများပေးပို့ရာတွင် စကားလုံး အရေအတွက် ကန့်သတ်ချက်ဖြင့် ငွေပေးချေရသောကြောင့် ပြောလိုသည့်အကြောင်းအရာများကို စကားလုံးနည်းနည်း ကျစ်ကျစ်လျစ်လျစ်ဖြင့် ရေးသားအသုံးပြုလာကြသည်ကို တွေ့ရပါသည်။ ထို့ကြောင့် အတိုကောက်စကားလုံး အသုံးပြုမှုသည် ယနေ့ခေတ်တွင် အထွန်းကားဆုံးဖြစ်သည်ဟု ဆိုနိုင်ပါသည်။

တစ်ဖန် ဗန်းစကားများ ပြောဆိုခြင်းသည်လည်း အတိုကောက်စကားလုံးများ တိုးပွားလာ စေသည့် အကြောင်းရင်းတစ်ရပ်ဖြစ်ကြောင်းသိရပါသည်။ လူ့အဖွဲ့အစည်းအတွင်း အသုံးပြုနေ သော ဗန်းစကားများသည် တစ်ခါတစ်ရံ ထွင်သုံးသော အသုံးမားဖြစ်၍ အတိုချုံ့မှုများရှိကြောင်း တွေ့ရပါသည်။ ထိုသို့ ချုံ့ရေးခြင်းပြောခြင်းဖြင့် အနက်အဓိပ္ပာယ် ထိရောက်စေကြောင်း တွေ့ရပါ သည်။

အတိုကောက်စကားလုံးများကိုအသုံးပြုလိုလျှင် ဦးစွာ အရှိအတိုင်း (မူလအတိုင်း)ရေးပြီးမှ အတိုကောက်စကားလုံးကို သုံးသင့်ပါသည်။ အကယ်၍ အရှိအတိုင်းကို တစ်ကြိမ် တစ်ခါမှ အသုံးမပြုဘဲ အတိုကောက်ကိုသာ စရေးစပြောလျှင် စာဖတ်သူအဖို့ နားလည်ရန် ခက်ခဲပေမည်။ အတိုကောက်အသုံးများသည် လျှို့ဝှက်တတ်သောသဘော ရှိသည့်အတိုင်း အသုံးပြုရာတွင် အဓိပ္ပာယ်များ ထွေပြားစေကြောင်း သိရပါသည်။

အတိုကောက်စကားလုံးအချို့သည် စကားလုံးပုံစံအရ လျော့နည်းမသွားစေသော်လည်း ပြောလိုသည့် အကြောင်းအရာကို ကျုံ့သွားတိုသွားစေကြောင်း တွေ့ရပါသည်။ ‘ငုံးအိမ်ကျူလ’ ကဲ့သို့ အကြောင်းအရာကို တိုသွားစေသော အသုံးများလည်း ရှိကြောင်း သိရပါသည်။

မြန်မာဘာသာစကားတွင် အသုံးပြုနေသော အတိုကောက်စကားလုံးများတွင် အချို့ အတိုကောက်စကားလုံးများကို သက်ဆိုင်ရာနယ်ပယ်အသိုင်းအဝိုင်းတစ်ခုအတွင်း၌သာ နားလည် နိုင်မှုရှိပြီး အခြားသော အသိုင်းအဝိုင်းများတွင် အသုံးမပြုနိုင်ကြောင်း၊ နားမလည်နိုင်ကြောင်း တွေ့ရပါသည်။ ထို့ကြောင့် အတိုကောက်စကားလုံး အသုံးပြုမှုသည် စာရေးသူနှင့် စာဖတ်သူများ၊

ပြောသူနှင့် နာသူများ အကြားတွင် တစ်ခါတစ်ရံ အခက်အခဲဖြစ်စေကြောင်း တွေ့ရပါသည်။

တစ်ဖန် မြန်မာဘာသာစကားအသုံးပြုပြောဆိုနေသူတို့သည် ဘာသာစကားအသုံးပြုမှု၏ လိုအပ်ချက်အရ အတိုကောက်စကားလုံးများကို အသုံးပြုရာတွင် မိမိတို့ဘာသာစကားကို သာမက အခြားဘာသာစကားများမှ အတိုကောက်စကားလုံးများကို တိုက်ရိုက်မွေးစားယူခြင်း၊ အသံဖလှယ် မွေးစားယူကာ အတိုကောက်ပြုခြင်းများကို အသုံးပြု၍လည်း မိမိဘာသာစကားတွင် စကားလုံး သစ်များ ဖြစ်ပေါ်ပြီး ဖွံ့ဖြိုးတိုးတက်လာအောင် အသုံးပြုလျက် ရှိကြပါသည်။

အတိုကောက်စကားလုံးအသုံးပြုမှုသည် ဘာသာစကားကို ဖွံ့ဖြိုးတိုးတက်စေသော်လည်း အခြေအနေနှင့် အကြောင်းအရာကိုကြည့်၍ သုံးသင့်သောနေရာ၊ မသုံးသင့်သောနေရာများရှိ ကြောင်း တွေ့ရပါသည်။ အချို့သော အတိုကောက်စကားလုံးအသုံးပြုမှုများသည် ဘာသာစကား ပျက်ယွင်းမှုကိုဖြစ်စေပြီး အချို့မှာ အနက်အဓိပ္ပာယ်ကိုထွေပြားစေပါသည်။ ဆေးပညာရပ်ဆိုင်ရာ ဝေါဟာရစကားလုံးများကို ကြည့်လျှင် အတိုကောက် အသုံးပြုရေးသားမှု နည်းကြောင်း တွေ့ရပါ သည်။ ဆေးပညာရပ်ဆိုင်ရာစကားလုံးများကိုအသုံးပြုသည့်အခါ အတိုကောက်သုံးလျှင် မှားယွင်း နိုင်ပါသည်။ လူ့အသက်၊ ကျန်းမာရေးနှင့်ဆိုင်သောအသုံးများဖြစ်၍ ဆေးပညာဝေါဟာရစကားလုံး များကို အများအားဖြင့် အတိုကောက်သုံးမှု နည်းပါးကြောင်း သိရပါသည်။

အချုပ်အားဖြင့်ဆိုသော် အတိုကောက်စကားလုံးများအသုံးပြုခြင်းသည် နေရာအနေ အထား၊ အချိန်၊ လူတို့၏အားစိုက်ထုတ်မှုများမှာ သိသိသာသာ လျော့နည်းသွားစေသည့် အပြင် လူတို့၏မှတ်ဉာဏ်တွင် လွယ်ကူစွာမှတ်မိစေခြင်းဟူသော အကျိုးတရားများကို ရရှိစေပါသည်။ မြန်မာဘာသာစကားတွင် အသုံးပြုနေသော အတိုကောက်စကားလုံးများသည် ဘာသာစကား ဖွံ့ဖြိုးတိုးတက်ရေးလမ်းကြောင်းတွင် သက်ဆိုင်ရာနယ်ပယ်များ၌ ထိရောက်လျင်မြန်၍ ပြီးမြောက် အောင်မြင်နိုင်သောကြောင့် အရေးပါသောအသုံးပြုမှုတစ်ရပ်ဖြစ်ကြောင်း အထင်အရှားပြဆိုနေ သည်ကို တွေ့ရပါသည်။

နိဂုံး

မြန်မာမှုဆိုင်ရာ အတိုကောက်စကားလုံးများကို လေ့လာရသည်မှာ စိတ်ဝင်စားဖွယ်ကောင်း၍ ဗဟုသုတရရှိပါသည်။ မြန်မာ့ပတ်ဝန်းကျင်တွင် အစဉ်အလာအရ အသုံးပြုနေသော အတိုကောက် အသုံးများ၊ နေ့စဉ်သုံးအရေးနှင့်အပြောဘာသာစကားများတွင်တွေ့ရသော အတိုကောက်အသုံးများ အကြောင်းကို လေ့လာတင်ပြထားပါသည်။ ထို့ကြောင့် ဤစာတမ်းသည် မြန်မာဘာသာစကား လေ့လာသူများအတွက် အကျိုးပြုလိမ့်မည်ဟု ဆိုနိုင်ပါသည်။ အတိုကောက်စကားလုံးအသုံးသည် သက်ဆိုင်ရာနယ်ပယ်အလိုက် အသုံးပြုနေကြကြောင်း သိရပါသည်။ ထို့ပြင် အတိုကောက် စကားလုံးတိုင်း၏ အနက်အဓိပ္ပာယ်ကို မသိစေကာမူ အသုံးတွင်ကျယ်သော၊ ပြည်သူလူထု တစ်ရပ်လုံးနှင့်သက်ဆိုင်သော အတိုကောက်စကားလုံးများ၏ အနက်အဓိပ္ပာယ်ကိုမူ သိသင့်သည် ဟုယူဆမိပါသည်။ မြန်မာဘာသာစကားသည် ရှင်သန်နေသောဘာသာစကားဖြစ်၍ စကားလုံး များ အသုံးပြုမှုသည်လည်း အမြဲပြောင်းလဲရှင်သန်နေပါသည်။ ထို့ကြောင့် ပြောင်းလဲလာမှုများနှင့် အညီ ခေတ်စနစ်နှင့် ညီညွတ်စေရန် ဤစာတမ်းကို လေ့လာတင်ပြလိုက်ရပါသည်။

ကျမ်းကိုးစာရင်း

မြန်မာဘာသာ

ကံ၊ မောင် (မောင်တော)။ (၂၀၁၃၊ ဒီဇင်ဘာလ ၁၈)။ 7 Day News ဂျာနယ်၊ အတွဲ ၁၂၊ အမှတ်

၄၁။ ၁၄။

ကျော်အောင်စံထား၊ ဒုတိယ။ (၁၉၇၀)။ မြန်မာနိုင်ငံစာပေပြန့်ပွားရေးအသင်း စာစဉ် (၈)။

ရန်ကုန်၊ စာပေလောကစာအုပ်တိုက်။

ခင်မင်၊ မောင် (ခန့်ဖြူ)။ (၂၀၀၇)။ မိန်းမယောက်ျားတို့စကား။ ရန်ကုန်၊ သီဟရတနာစာပေ။

ခင်မင်၊ မောင် (ခန့်ဖြူ)။ (၂၀၀၉)။ ဘာသာအမြင်စာပေအမြင်။ ရန်ကုန်၊ ပုဂံစာအုပ်တိုက်။

ခင်မင်၊ မောင် (ခန့်ဖြူ)။ (၂၀၁၁ က)။ လူငယ်အတွက် စကားအကြောင်း၊ စာအကြောင်း။

ရန်ကုန်၊ ကောင်းသန့်စာပေ။

ချိုချိုတင့်၊ ဒေါက်တာ(ပါမောက္ခ-)။ (၂၀၁၁)။ မြန်မာအတိုကောက်စာလုံး။

မြန်မာစာသုတေသနစာတမ်းများ။ ရန်ကုန်၊ ကာလာနုပုံနှိပ်တိုက်။

ဂျာနယ်များ၊ (အပတ်စဉ်)

ငြိမ်းမောင်၊ ဦး။ (၁၉၈၂)။ ရှေးဟောင်းမြန်မာကျောက်စာများ (ဒုတိယတွဲ)။ ရန်ကုန်၊

ရှေးဟောင်း သုတေသန။

ငြိမ်းမောင်၊ ဦး။ (၁၉၈၃)။ ရှေးဟောင်းမြန်မာကျောက်စာများ (တတိယတွဲ)။ ရန်ကုန်၊

ရှေးဟောင်းသုတေသန။

စောလူ။ (၁၉၉၆)။ ပုဂံခေတ်မြန်မာစာ။ ရန်ကုန်၊ စာပေဗိမာန်ပုံနှိပ်တိုက်။

စိုးလွင်၊ ဒေါက်တာ။ (၂၀၁၂၊ စက်တင်ဘာ ၁၄)။ ကျမ်းမာရေးဂျာနယ်၊ အတွဲ ၁၃၊ အမှတ်၃၇။

အချပ်ပို ၂။

စိုးလွင်၊ ဦး။ (၂၀၀၉)။ အင်တာနက်သုံးသင်္ကေတများနှင့်ဗန်းစကားများ။ ရန်ကုန်၊ All star

စာပေ။

ညွန့်ဝေမိုး။ (၂၀၁၁)။ အတိုကောက်ဝေါဟာရအဘိဓာန် (တ-ကြိမ်)။ ရန်ကုန်၊ စာပေလောက

စာအုပ်တိုက်။

တင်ထွေး။ (၁၉၉၁)။ ဦးပုည၏စာပန်းကုံးများ(ဒု-ကြိမ်)။ ရန်ကုန်၊ ကြေးမုံသတင်းစာတိုက်နှင့်

ဂါးဒီးယန်းသတင်းစာတိုက်။

တင်လှ၊ ဦး။ (၁၉၆၆)။ ဘာသာနှင့်စာပေ။ ရန်ကုန်၊ ပုဂံစာအုပ်တိုက်။

ထွန်းမြင့်၊ ဦး (ဒဂုန်)။ (၁၉၇၁)။ စကားလုံးသံခိပ်ရေးနည်း။ ငွေတာရီမဂ္ဂဇင်း။ ရန်ကုန်။

ထွန်းမြင့်၊ ဦး (ဒဂုန်)။ (၁၉၉၇)။ သုခမှတ်စ(ဆဋ္ဌမအကြိမ်)။ ရန်ကုန်၊ ပါရမီစာပေ။

ထွန်းမြင့်၊ ဦး။ (၂၀၀၂)။ ဘာသာဗေဒ (ဒု-ကြိမ်)။ ရန်ကုန်၊ ရန်ကုန်တက္ကသိုလ် ဂျီအီးစီ

(ပညာရေး)။

ထွန်းမြင့်၊ ဦး။ (၂၀၀၄)။ သဒ္ဒဗေဒ၊ ဘာသာဗေဒအခြေခံ။ ရန်ကုန်၊ ပညာတန်ဆောင်ပုံနှိပ်တိုက်။

ဒဂုန် (ဆရာ)။ (၁၉၈၈)။ မြန်မာ့ရိုးရာဆန်းကျမ်းဗေဒပညာ။ ရန်ကုန်၊ စမ်းသီတာစာပေ။

ပညာတန်ဆောင်၊ အတွဲ ၂၇၊ အမှတ် ၅။ (၁၉၇၈)။
 ပညာတန်ဆောင်၊ အတွဲ ၃၃၊ အမှတ် ၆။ (၁၉၈၄)။
 ဗမာ့ခေတ်သတင်းစာ၊ အတွဲ ၅၊ အမှတ် ၂၅။ (၁၉၄၈)။
 ဗမာ့ခေတ် (အထူး)၊ အတွဲ ၂၅၊ အမှတ် ၂၉၄။ (၁၉၅၉)။
 မုဒိတာ (ကျိုက်လတ်)။ (၂၀၁၄၊ ဇူလိုင်လ)။ သက်ကြီးစုထား သိမှတ်စရာများ သက်ငယ်သုံးစား
 အကျိုးပွား။ သူရဇ္ဇမဂ္ဂဇင်း၊ အတွဲ ၁၄၊ အမှတ် ၇။
 မိုလာ၊ ဒေါက်တာ။ (၂၀၁၂၊ ဩဂုတ်လ ၄)။ အလှအပရဲ့နောက်ကွယ်မှာ(၈)။
 ကျန်းမာရေးဂျာနယ်၊ အမှတ် ၄၀၀။ ၆။
 မိုးညို။ (၂၀၁၃၊ ဒီဇင်ဘာလ ၁၈)။ 7 Day News ဂျာနယ်၊ အတွဲ ၁၂၊ အမှတ် ၄၁။ ၁။
 မောင်မောင်ညွန့် (မန်းတက္ကသိုလ်)။ (၂၀၀၂)။ ပေစာပုရပိုက်စာ(ဒု-ကြိမ်)။ ရန်ကုန်၊
 ပါရမီစာပေ။
 မုံရွေးဆရာတော်။ (၁၉၆၃)။ မုံရွေးမှတ်စု။ ရန်ကုန်၊ ဟံသာဝတီပုံနှိပ်တိုက်။
 မြန်မာစာအဖွဲ့။ (၁၉၈၀)။ မြန်မာသဒ္ဒါ။ ရန်ကုန်၊ မြန်မာစာအဖွဲ့ဦးစီးဌာန။
 မြန်မာစာအဖွဲ့။ (၁၉၉၁)။ မြန်မာအဘိဓာန်။ ရန်ကုန်၊ မြန်မာစာအဖွဲ့ဦးစီးဌာန။
 မြန်မာ့စွယ်စုံကျမ်း၊ အတွဲ ၈။ (၁၉၆၃)။ ရန်ကုန်၊ စာပေဗိမာန်စာအုပ်တိုက်။
 မြန်မာ့စွယ်စုံကျမ်း၊ အတွဲ ၁၀။ (၁၉၆၆)။ ရန်ကုန်၊ စာပေဗိမာန်စာအုပ်တိုက်။
 မြန်မာစာအဖွဲ့။ (၂၀၁၃)။ မြန်မာစာစာလုံးပေါင်းသတ်ပုံကျမ်းနှင့်ခွဲထား။ ရန်ကုန်၊ မြန်မာစာအဖွဲ့၊
 ဦးစီးဌာန။
 မြတ်လှ၊ ဦး။ (၁၉၉၂)။ သင်္ဂဓာဆရာတော်စကားပုံများ၊ ပုံပြင်များ (နဝမ-ကြိမ်)။ ရန်ကုန်၊
 ရတနာဂုဏ်ရည်စာပုံနှိပ်တိုက်။
 မြတ် (ကလေး)။ (၂၀၁၂၊ စက်တင်ဘာ ၂၇)။ ဒိုမိန်းတွေကိုလျှော့ဈေးနဲ့ရောင်းပေးတဲ့နေရာ။
 voice ဂျာနယ်၊ အမှတ် ၄၃၊ ၂၅။
 လှသမိန်။ (၂၀၀၅)။ မြန်မာဗန်းစကားအဓိပ္ပာယ်နှင့်သုံးနှုန်းနည်း (ဒု-ကြိမ်)။ ရန်ကုန်၊
 ပတ္တမြား ငမောက် စာပေ။
 ဝင်းမောင်၊ ဦး။ (၁၉၈၀)။ ပုဂံခေတ်စာလုံးချို့ရေးထုံး။ ပညာပဒေသာစာစောင်၊ အတွဲ ၁၄၊
 အပိုင်း ၃။
 သာဓိ၊ မောင်။ (၁၉၇၂)။ ဗမာစာ ဗမာစကား။ ရန်ကုန်၊ ဇွဲပုံနှိပ်တိုက်။
 သာဓိ၊ မောင်။ (၂၀၀၁)။ မြန်မာစကားနဲ့စာပေ။ ရန်ကုန်၊ တိုင်းလင်းစာပေ။
 သာလွန်။ (၂၀၀၇)။ အင်္ဂလိပ်မြန်မာအဘိဓာန် (ဒု-ကြိမ်)။ ရန်ကုန်၊ ဆယ်သန်းပုံနှိပ်တိုက်။
 သူရ။ (၂၀၁၂၊ နိုဝင်ဘာလ ၉)။ ကျန်းမာရေးဂျာနယ်၊ အတွဲ ၃၊ အမှတ် ၄၄။ ၄။
 သက်ပိုင် (ရွှေခြုံ)။ (၁၉၉၇)။ မြန်မာ့ရိုးရာဂဏန်းသင်္ချာ။ ရန်ကုန်၊ စာပေဗိမာန်။

သက်ရည်အေး၊ မ။ (၂၀၀၉)။ *၂၀ရာစုနှောင်းပိုင်းမှ ၂၁ရာစုအစပိုင်းအတွင်း မြန်မာဘာသာ စကားတွင် စကားလုံးအသစ်တိုးပွားမှု*။ ရန်ကုန်တက္ကသိုလ် မြန်မာစာ ပါရဂူဘွဲ့အတွက် တင်သွင်းသောကျမ်း။

သဏ်းစိုးမောင်။ (၁၉၇၁၊ အောက်တိုဘာလ)။ ကုလသမဂ္ဂနှင့်အပြည်ပြည်ဆိုင်ရာအဖွဲ့အစည်းများ။ *The Vioce ဂျာနယ်၊ အမှတ် ၁၃၆*။ ၂၁။

သန်းဆွေ၊ ဒေါ်။ (၁၉၈၀)။ *မြန်မာဘာသာစကားမြန်မာကျောက်စာ စာတမ်းဆောင်းပါးများ*။ ရန်ကုန်၊ ဘာသာပြန်နှင့် စာအုပ်ထုတ်ဝေရေးဌာန။

သိန်းကြီး၊ ဆရာ(မှော်ဘီ-)။ (၁၉၆၇)။ *အရူးလွယ်အိတ်*။ ရန်ကုန်၊ အောင်မြေစာပေ။

သိန်းလွင် (ဆရာ-)။ (၂၀၁၂)။ *သိမှတ်ဖွယ်ရာ စကားလုံးပဒေသာ* (ပဉ္စမအကြိမ်)။ ရန်ကုန်၊ ရွှေဟင်္သာစာပေ။

ဟေမာန်အောင်။ (၂၀၁၂၊ ဇွန်လ ၁၉)။ ကုလမှူးချုပ်၏အကြံပေးအမှန်အကန်မြင်သွား။ *7 Day News ဂျာနယ်၊ အမှတ်၊ ၈*။ ၁၉။

အိဖြူမွန်။ (၂၀၁၁၊ စက်တင်ဘာလ ၈)။ *7 Day News ဂျာနယ်၊ အတွဲ ၁၀၊ အမှတ်၊ ၂၅*။ ၁၂။

ဩ၊ ဦး (စိန္တကျော်သူ-)။ (၁၉၆၂)။ *ကဝိလက္ခဏာသတ်ပုံသံပေါက်နှင့်အတိုကောက်*။ ရန်ကုန်၊ ဟံသာဝတီပုံနှိပ်တိုက်။

အောင်ကိုမင်း (ထီလာ)။ (၁၉၇၈၊ ဖေဖော်ဝါရီလ)။ *ပညာတန်ဆောင်၊ အတွဲ ၂၇၊ အမှတ် ၂*။ ၇။

အောင်မြင့်ဦး၊ ဒေါက်တာ။ (၂၀၁၀)။ နေ့စဉ်သုံးမြန်မာစကားတွင် စကားလုံးသစ်ဖြစ်ပေါ်ပြောင်းလဲမှုများ။ *ဘာသာစကားသုတေသန*။ ရန်ကုန်၊ ရှုမဝစာအုပ်တိုက်။

အောင်မြင့်ဦး၊ မောင။ (၂၀၀၀)။ *ပုဂံခေတ်မြန်မာစာအရေးအသားစနစ်*။ ရန်ကုန်တက္ကသိုလ် မြန်မာစာပါရဂူဘွဲ့အတွက် တင်သွင်းသောကျမ်း။

အောင်သူရ။ (၂၀၁၂၊ နိုဝင်ဘာလ ၈)။ *7 Day News ဂျာနယ်၊ အတွဲ ၁၁၊ အမှတ်၊ ၃၅*။ အချပ်ပို A။

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A STUDY ON WELFARE SERVICE FOR ORPHAN AND VULNERABLE CHILDREN IN INSTITUTIONS IN HLEGU TOWNSHIP

Nyo Nyo

Chapter I Introduction

1.1 Rationale for the study

Around the world, millions of girls and boys grow up for substantial periods not in their own or alternative families, but under the control and supervision of care authorities or justice systems. The institutions they live in have many names, including orphanages, children's homes, care homes, prisons, juvenile detention facilities, reform schools, etc. Many are large-scale, and children who enter them can live for long periods of their lives inside these institutions. Whatever their name, these institutions govern the day-to-day lives, personal development and future life of these children.

In Myanmar, there are orphans and vulnerable children (such as street children, child labors, and child soldiers and disabled children) who are prone to live in poverty and fail to get basic education and health services.

Poverty: This is a significant factor in the decision of many parents to place children in residential care. When parents feel unable to provide for their children, and believe that children can receive better access to education, health care and adequate nutrition in residential facilities, they may choose to place their child in care, believing he or she will be better off than at home.

Although government and non-government (local as well as international) support is given to a number of social welfare services all over the country, there still exist deficiencies in the child welfare services and there is an urgent need to improve the services delivered.

This study focuses on children in 14 institutions in Hlegu Township, 2 initiated by Buddhist monks, 11 private and 1 Christian missions. In terms of the nationalities, there are altogether 20 nationalities including Indian, Chinese and other nationals. Among the children belonging to Burma, Shan, Chin and Pa-Oh are the majority. With this belief,

these 14 institutions are taking the responsibilities for the education and welfare of the children from various parts of the institutions.

Information regarding these institutions is very limited and a comprehensive picture of the existing institutions is not available. Moreover, some institutions are not registered at DSW. This paper intends to find out the general situation of the institutions operated by religious groups, community and individuals.

1.2 Objective of the study

The objective of this study is to investigate the situation of children in institution who are out of home care but are cared for in institutions and to find out weak and strong points of programs on safety net for orphans and vulnerable children in these institutions.

1.3 Method of study

Descriptive method was mainly used in this study based on data and information collected from Child Welfare Institutions and other selected from in-depth interviews and key informant interviews. These interviews were conducted to get more detailed information and were based on a structured questionnaire.

1.4 Scope of the study

This study covers only 14 institutions in Hlegu Township, 2 of them (14 %) are operated by the Buddhist monasteries, 11 of them (79 %) are operated by the private sector and 1 of them (7 %) are operated by the Christian Church. Some of the institutions are registered and some are not registered at DSW. Registered institutions are supported by the government Focus is on the situation of the children who are permanently residing and getting shelter, food, clothing, education and health services in these institutions during 2017.

1.5 Organization of the study

This paper is organized into four chapters; Chapter I is the introduction consisting the rationale, the objective, the method of the study and the scope and the organization of the study. Chapter II presents literature review. Chapter III presents child welfare service in orphanages under in institution in Hlegu Township. Finally, Chapter IV is presents the concluding chapter where some recommendations are given.

Chapter II

Literature Review

This chapter presents literature relevant to this research paper: concept on social safety nets, social safety nets programs and orphans and vulnerable children.

In Myanmar, Social Welfare Services was initiated by the Religious Associations and voluntary Associations. The majority of Myanmar citizens are Buddhists who are very generous and donate not only to religious organizations but also to the needy.

Therefore, various organizations for social services have been in existence in Myanmar for a long time. These organizations have carried out activities especially in the areas of care of the aged and care of the youth. Youth care activities were carried out by the Buddhist monasteries where youths were brought up and educated. Missionaries of other religions in Myanmar also took part in establishing institutions for the needy.

2.1 Social safety nets

The social safety net is a term used to describe a collection of services provided by the state (such as welfare, universal healthcare, homeless shelters, and perhaps various subsidized services such as transit), which prevent any individual from falling into poverty beyond a certain level. Social safety net programs can be an effective instrument to provide assistance to the most vulnerable groups in society, such as orphans and vulnerable children, the disabled or the elderly.

2.3 Social safety nets programs

Social Safety Nets are formal and informal measures that protect people from the worst effects of low income and poverty. Social Safety Nets are non-contributory transfer programs targeted to the poor or those vulnerable to poverty and shocks. Some people refer to such programs described as social assistance or social welfare programs. The social policy aspect of safety nets is concerned primarily with formal programs designed to provide or substitute for income. Common safety net programs include:

- Cash Transfers
- Food-Related Programs
- Price and Other Subsidies
- Public Works
- Micro Credit

Also included are means to insure people's access to essential public services, such as:

- Education (school vouchers or scholarships), electricity, housing
- Health Care Services

Informal (private) safety net arrangements are also important in protecting household income, and must be considered in the design of formal mechanisms. Cash and food transfers between households are important in many regions; labor exchange is common in country - charitable giving expected of every able adult – is important in many countries.

2.3 Orphans and vulnerable children

Today relatively few children are placed in residential care because they have no parents. Most commonly, children are placed in care because of disability, family disintegration, violence in the home, lack of social support systems, and poor social and economic conditions, including poverty. In some countries, natural disasters, armed conflict or the effects of the HIV/ AIDS pandemic may leave parents unable to care for their children. Illness, accidents, and incarceration may also separate children from their parents.

An orphan is a person, who has lost both parents, often through death. In addition, poverty and conflict also increase children's vulnerability to becoming child soldiers, street children and child laborers. In this environment, *Orphans and vulnerable children (OVC)*¹ who are most at risk of facing increased negative outcomes compared to the "average" child in their society. Main negative outcomes include; malnutrition, and lower than average rates of school attendance and completion at primary level, and in all probability, increased work burden (both paid and unpaid child labor). Moreover, these children tend to be exposed to a much higher risk of abuse, neglect and exploitation, not to mention the psychological impact of witnessing and living violence and of losing a parent. Orphans can place in orphanages or child-care canters.

¹ OVC are defined as "Children under the age of 18 whose mother, father, both parents and primary caregiver has died, and /or is in need of care and protection.

An orphanage is an institution dedicated to carrying for orphans (children who have lost their parents) and abused, abandoned, and neglected children. Generally the world orphanage is used interchangeably with children's home. Largely seen as an inferior alternative to family-based childcare such as some forms of foster-care, adoption and other family-based child care, orphanages may be privately or publicly funded, and may are run by religious organizations.

Chapter III

Child Welfare Service for Orphanage and Vulnerable Children In Institution

3.1 Background History of Hlegu Township

Hlegu Township is geographically situated in the Northern part of Yangon Region between latitude 16°59' N and 17 °19' N longitudes 96 °13' E and 96 °25' E. This Township area is 577.37 sq miles. It is from East to West about 13 miles and South to North about 35 miles in length.

Hlegu township share borders with Hmawbi Township and Taikkyi Township in the west, Bago Township of Bago Region in the North and East. North Okkalapa Township, North Dagon Township and Dagon Township in the South.

There are many brooks from North to South they flow. Especially, it is Nga Moe Yeik brook that is famous in Hlegu Township. There are over 2 million population in Hlegu Township it is annual growth rate is 1 % estimated. There are over 10 indigenous ethnic group spreads over 10 quarters. Significant ethnic group are the Kachin, Kayar, Kayin Chin, Mom, Banar, Rakhine, Shan and Foreigners.

Hlegu Township is basically agricultural Township. Current economic conditions favor the trading, manufacturing, Livestock breeding, as a vital role to progress of the Township economy.

3.2 Institutions Caring For Orphans and Vulnerable Children

In order to promote social development programmes with community participation, DSW makes grants-in-aids programmes to voluntary organizations in both cash and in kind transfer. Among the 14 institutions in this study, 4 (29%) are supported by the Department of Social Welfare (DSW) while 10 (71%) are not registered and therefore not supported by DSW. Tables (3.1) and (3.2) show the registered and non-registered institutions. The institutions can be generally classified into Monastic, Private and Church respectively.

Table (3.1) Registered Institutions (2017)

Sr No	Type of Institutions	Start Build Year	Registered Year	Rank
	<i>Private Institution</i>			
1	- Myitar Aye Yeik Myone Child Development Center	1995	28/8/2014	2
2	-Garden Home Child Development Center	2003	9/2/2009	1
3	-Mi Ba Myitar Child Development Center	1995	21/10/2015	1
4	-Myanmar Green Land	2004	22/8/2014	2

Sources: Survey data (2017) Note Rank-1; government supported food cost, Rank-2; government supported food and clothing cost.

Table (3.2) Non Registered Institutions (2017)

Sr No	Type of Institutions	Start Build Year
	<i>Monasteries Institution</i>	
1	Bawa A Lin Yone Monastic Education School	2016
2	Si Thu Hein Monastic Education School	2015
	<i>Christian Mission</i>	
3	Amar Nwai La Child Development Center	2006
	<i>Private Institution</i>	
4	U Win Orphanage Filmily	2004
5	AGAPE VINEYARD CHILDREN HOME	2011
6	Mother House Orphanage	2005
7	Boxer Child Development Center	2004
8	Taw Win Child Development Centre	2012
9	Ingyin Child Development Centre	2015
10	Morning Glory Orphanage	2007

Sources: Survey data (2017)

The monastic, church, and some private institutions are not registered with the Department of social welfare. In Buddhist society, there are operated by a monk or groups of monks and children who are orphans or from poor families rely on the monks for their survival and future. One institution operated by Christian Churches and private persons also look after orphans or poor children. Table (3.3) shows the average number of children in these institutions, by type of institution during 2017.

Table (3.3) Average number of children by type of institutions (2017)

Type of institution	Total Children	Number of institution	Average number of Children
Monastic	86	2	43
Private	549	11	50
Church	54	1	54
Total	689	14	49

Sources: Survey data (2017)

Note: Private institutions are run by Christians

Table (3.3) shows that, maximum capacity of the observed institutions is around 100 children and the minimum is 20. In terms of intake, there are two biggest ones among the visited institutions. The first one is U Win Orphanage Family, and the second one is Ingyin Child Development Centre in Sar Bu Taung village. The providing basic education in the campus including children from nears the environment. There is a free of charge school for all students. Children are learning at the school under the provision and supervision of the monks.

Table (3.4) Number of children care Male and Female by type of institutions (2017)

Type of institution	Male	Female	Total
Monastic	46	40	86
Private	303	246	549
Church	31	23	54
Total	380	309	689

Sources: Survey data (2017)

Table (3.4) shows that, all of the institutions are male and female mixed institutions. Out of the 2 monastic institutions, (46) were male and (40) were female. Private institutions,(303)were male and (246) were female. In church-based institution, (31) were

male and (23) were female. The numbers of male were 380 and female were 309. The total number of males and females are 689.

The number of children by age group in the three different types of institutions; Monastic, Private and Church are shown in the following table.

Table (3.5) Number of children by age group of type of institution (2017)

Age group Institutions	<5	5-9	10-14	15-18	>18	Total
Monasteries	5	24	10	13	34	86
Private	28	160	192	129	40	549
Church	6	9	21	15	3	54
Total	39	193	223	157	77	689

Sources: Survey data (2017)

Table (3.5) shows that, the age of those cared for in these institutions range from 1 to about 35 years. 612(89%) of children are under 18 years of age. The majority of children are between 10 to 14 years, and the second largest age range is between 5 to 9 years. Most of the institutions accepted children between the age from 5 to 18 years old. Children under 5 are cared for in Amar Nwai La Child Development Center and Taw Wan Orphanage Centre in private institutions.

Table (3.6) Type of Institutions, number of children and Staff in Institutions

Sr No	Type of Institutions	No of Children Total	Staff	
	<i>Monasteries Institution</i>		Male	Female
1	Bawa A Lin Yone Monastic Education School	50	3	5
2	Si Thu Hein Monastic Education School	36	5	3
	<i>Church Institution</i>			
3	Amar Nwai La Child Development Center	54	2	4
	<i>Private Institution</i>			
4	Myitar Aye Yeik Myone Child Development Center	48	4	3
5	Garden House Child Development Center	59	4	6
6	Mi Ba Myitar Child Development Center	50	3	2
7	Myanmar Green Land	50	3	5
8	U Win Orphanage Family	86	3	6
9	AGAPE VINEYARD CHILDREN HOME	30	1	2
10	Mother Home Orphanage	26	2	3

11	Boxer Child Development Center	48	2	3
12	Taw Wan Orphanage Centre	54	3	3
13	Ingyin Child Development Centre	71	3	3
14	Morning Glory Orphanage	27	3	3
	Total	689	41	51

Sources: Survey data (2017)

Table (3.6) shows that, in all of the institutions the total number of children is (689) people and the total number of staff is (92) people respectively in institutions.

The staff schedule is to work for 4 weeks and most of the teachers are in the compound only during school hours, though in Bawa A Lin Yone monastery, some of the teachers live in their own quarters in the monastery compound. In Garden House Child Development Center, caregivers have one day off per month. In the Christian institution, the staffs are also family members or relatives of the director. All of the institutions pay their staff, but mostly they are volunteer wages. The staffs all eat and sleep at the institutions. The caregivers in the institutions are both male and female that care for children. The principal of all institutions observed are either degree holders in formal education or in religion. Some principals, especially Buddhist monks and Christians were awarded honorable and high religious degree by the State. The majority of principals do not have any training related to child care and welfare. The education levels of caregivers (excluding principals) in private institution do not pass proper qualifications.

The majority of staff is genuinely committed to caring for children in difficult circumstances. However, because the institutions focus on discipline, religion, education, and caring for the children's physical needs, there is little awareness of children's psycho/social needs, and especially their need for love.

3.3 Type of vulnerability in the institutions

Although the institutions in this study are referred to as orphanages, it is interesting to note the vulnerability of the children in difference types of institutions.

Table (3.7) Number of children according to the types of vulnerability in Institutions (2017)

Type of vulnerable Institutions	Orphan	Motherless	Fatherless	Others
Monasteries	-	1 (2%)	4 (3%)	81 (29%)
Private	205 (95%)	53 (85%)	98 (75%)	193 (69%)
Church	11 (5%)	8 (13%)	29 (22%)	6 (2%)
Total	216	62	131	280

	(100%)	(100%)	(100%)	(100%)
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Sources: Survey data (2017)

Note: “Other” includes divorced parents, separated parents, and destitute.

Table (3.7) shows that, the majority (95%) of orphaned or abandoned child is cared for in private institutions. In church institutions, true orphans are approximately 5% of the total number of children. In monastic institutions are not true orphans. Most of the motherless or fatherless children are cared for in Private institution.

3.4 Ethnicity of children in the institutions

According to this study, there are altogether 20 races including Indian, Chinese, and small ethnic groups can be seen at various institutions. Among them, children belonging to Bamar, Pa-Oh, and Shan are the majority in monastic and Bamar, Chin and Kayin are the majority in private and church institutions.

In the monastic institutions the majority of (45%) are Pa-Oh, followed by Shan, Bamar, Kayin, Chin, Wa. Table (3.8) shows the number of children by ethnicity in monastic institution.

Table (3.8) Number of children by ethnicity in Monasteries, Private and Church institution (2017)

Ethnic Group	Monasteries		Private		Church	
	No of children	Percentage	No of children	Percentage	No of children	Percentage
Bamar	14	16.27	171	31.14	5	9.25
Shan	24	27.90	10	1.82	-	-
Kayin	1	1.16	29	5.28	2	3.70
Chin	1	1.16	157	28.59	46	85.18
Wa	7	8.13	-	-	-	-
Pa-ho	39	45.34	-	-	-	-
Kayar	-	-	6	1.09	1	1.85
Rakhine	-	-	23	4.18	-	-
Kachin	-	-	61	11.11	-	-
Mon	-	-	4	0.72	-	-
Indian	-	-	2	0.36	-	-
Chinese	-	-	1	0.18	-	-
Lar Hu	-	-	18	3.27	-	-

Pa taung	-	-	1	0.18	-	-
Kayan	-	-	26	4.73	-	-
Pa Long	-	-	4	0.72	-	-
Nar Ga	-	-	11	2	-	-
Lisue	-	-	25	4.55	-	-
Total	86	100	549	100	54	100

Sources: Survey data (2017)

This table shows number of children by ethnic groups in private institutions. The majority of children (31%) are Bamar, follow by Chin (29%) and Kachin (11%). Private institutions are run by Christians. The situation of the children by ethnicity in church based institutions, the majority of children (85%) are Chin.

3.5 Living arrangement and facilities in the institutions

All of the institutions have space for the children to sleep, but there is a large variation in the type of sleeping arrangement. In AGAPE VINEYARD CHILDREN HOME, Garden House Child Development Center with 2 or 3 bunk beds per room, each with its own mosquito net. In 5 out of 14 centers, the children sleep on the floor, and new buildings are required for sleeping. In 4 out of 14 centers, the sleeping space is fairly adequate. Bawa A Lin Yone Monastic Education School center sleeping space has hall type with 2 or 3 children sleeping on mats.

Table (3.9) shows the condition of the sleeping space for each child by type of institution.

Table (3.9) Number of institution by condition of sleeping space and by type of institutions (2017)

Type of institution	Adequate	In adequate	Fairly adequate	Total
Monasteries	2 (14%)	-	-	2 (14%)
Private	3 (22%)	5 (35%)	3 (22%)	11 (80%)
Church	-	-	1 (7%)	1 (7%)
Total	5 (36%)	5 (35%)	4 (29%)	14 (100%)

Sources: Survey data (2017)

Table (3.10) shows that 10 of the institutions have adequate pillows, blankets, and mosquito nets while 4 reported that are not enough pillows, blankets, and mosquito nets for children.

Table (3.10) Number of institution by availability of pillow, blanket and mosquito net by type of institution (2017)

Type of institution	Adequate	In adequate	Total
Monasteries	2 (14%)	-	2 (14%)
Private	8 (57%)	3 (22%)	11 (79%)
Church	-	1 (7%)	1(7%)
Total	10 (71%)	4 (29%)	14 (100%)

Sources: Survey data (2017)

Table(3.11) Availability of slippers, toothbrush and toothpaste by type of institutions

Type of institution	Adequate	Not Adequate	Total
Monastic	2 (14%)	-	2 (14%)
Private	10 (72%0	1 (7%)	11 (79%0
Church	-	1 (7%)	1 (7%)
Total	12 (85%)	2 (14%)	14 (100%)

Source: Survey data

Table (3.11) shows that, 2 out of 14 institutions could not provide adequate slipper, toothbrush and toothpaste to the children. In all of institutions, the children appear to have adequate clothes, with a school uniform and two to three changes of clothes. Most of their clothes are received from donors. These are sometime new or second-hand. Some institutions such as Myitar Aye Yeik Myone Child Development Center do not receive second-hand clothes. However, as shown in table (3.12), children in 8 institutions do not have adequate school uniforms.

Table (3.12) Number of institution by availability of school uniform and by type of institutions (2017)

Type of institution	Adequate	In adequate	Total
Monasteries	1 (7%)	1 (7%)	2 (14%)
Private	5 (36%0	6 (43%)	11 (79%)
Church	-	1 (7%)	1 (7%)
Total	6	8	14

	(33%)	(57%)	(100%)
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Sources: Survey data (2017)

As shown in table (3.13), half of the institutions have library. They have many kinds of books such as religious, children's, magazines and others. In most of institutions, the children do not use the library during schooling season because the supervisors and caregivers encourage them to learn their school lessons.

Table (3.13) Number of school with library by type of institution (2017)

Type of institutions	Yes	No	Total
Monasteries	1 (7%)	1 (7%)	2 (14%)
Private	5 (36%)	6 (43%)	11 (79%)
Church	1 (7%)	-	1 (7%)
Total	7 (50%)	7 (50%)	14 (100%)

Sources: Survey data (2017)

3.6 Income Generating Activities

To meet the cost of running these institutions, funds are required. Basically, the major sources of fund in these institutions are donations, DSW support and income generating activities, another source of fund from overseas. In some institutions which are totally dependent on the donation of the people, donations are not providing sufficient funds. The heads of the institutions are needed to find means and ways for generating income for the effective operation or their institutions. Therefore, some types of income generating activities are necessary. Table (3.14) shows that of 10 out of the 14 institutions studied had income generating activities. The remaining 4 institutions were totally dependent on donations.

Table (3.14) Income generating program by type of institution (2017)

Type of Institutions	Yes	No	Total
Monasteries	-	2 (14%)	2 (14%)
Private	9 (65%)	2 (14%)	11 (79%)

Church	1 (7%)	-	1 (7%)
Total	10 (72%)	4 (28%)	14 (100%)

Sources: Survey data (2017)

3.7 Health and Nutrition

Keeping children healthy depends on many conditions; not only health facilities but also the condition of the buildings and environment where they live are important. Children are given a medical check-up only in U Win Orphanage Family, Boxer Child Development Center once they are admitted to the institution. Mi Ba Myitar Child Development Center and Myittar Aye Yeik Moyne institutions keep separate health records for the children. Children from some institutions have the benefits of local physicians' volunteer services.

Regarding the health facilities, almost all institutions keep medicines for common illness. Some of them are western medicines and some are traditional ones. First aid kits are hardly seen at the institutions. About 43% of the institutions keep both type of medicines, but most of the institutions keep western medicines. Table (3.15) shows number of institutions by type of medicines available.

Table (3.15) Number of institution by type of medicines available and by type of institutions (2017)

Type of institution	Traditional	Western	Both	Total
Monasteries	-	1 (7%)	1 (7%)	2 (14%)
Private	1 (7%)	5 (36%)	5 (36%)	11 (79%)
Church	-	1 (7%)	-	1 (7%)
Total	1 (7%)	7 (50%)	6 (43%)	14 (100%)

Sources: Survey data (2017)

For nutrition, in most of the institutions, the children receive two main rice meals per day, and a lighter meal such as fried rice or snack food for breakfast. In the monasteries, however, the novices' last meal for the day is at 11 a.m. The rice is served with beans (pulses) and some vegetables. Vegetable is the main ingredient of children's meals. If there is enough money, the children eat meat twice a week, sometime mixed with vegetables. People often donated food to the children in the institutions on their birthdays. When there is such donation of food, children can have meat in their meal.

They sometimes serve afternoon snacks when there is a donation. In those private institutions which depend completely on donations, when there is not enough money for food, the children eat rice soup.

3.8 Discipline

All rules are set to help children live harmoniously in the institutions, there are some incidents where children failed or forget to observe some of the rules for which disciplinary actions had to be taken against them. Most of the heads and care-providers working in the institutions had the option that children need to learn from physical punishment to respect their elders, learn right from wrong, obey rules and work hard. Children do not obey or if they fight, or if they sleep or talk during study time. They also give the children extra chores, such as cleaning the toilets for a week, as a punishment, or deprive them of certain privileges, such as going out of watching TV. Most of principle and caregivers do not seem to be a very good understanding of the difference between disciplines. In the institution, the punishment should be balanced with the fault. Table (3.16) shows the way of discipline for children by type of institution. The majority of the institutions are Flexible in discipline. 4 out of 14 institutions are systematic in discipline, and 4 out of 14 institutions are strict.

Table (3.16) Way of discipline of children by type of institution

Type of institution	Systematic	Strict	Flexible	Total
Monasteries	-	2 (14%)	-	2 (14%)
Private	4 (29%)	1 (7%)	6 (43%)	11 (79%)
Church	-	1 (7%)	-	1 (7%)
Total	4 (29%)	4 (29%)	6 (43%)	14 (100%)

Sources: Survey data (2017)

3.9 Education

All heads of institutions strongly expressed their commitment to support children up to the university level if the latter are capable to do so. There are evidences where heads of the institutions are still supporting children who are attending the university.

Now, many villages where there are not a single lower secondary level graduate before are having upper secondary level graduates with some even having university graduates. At the same time parents or relatives provided crops to the institutions after

harvesting. This was done in gratitude to the care-providers of the institutions for providing education to their children.

The educational levels of the children varied a lot. It ranges from illiteracy to university level. The education level of children in the institutions is mentioned in the following table (3.17).

Table (3.17) Number of children by educational level by type of institutions

Type of Institutions	KG	Primary	Middle	High	University	Vocational	Illiterate	Total
Monasteries	5	24	12	36	9	-	-	86
Private	15	163	192	121	19	25	14	549
Church	-	16	17	14	1	-	6	54
Total	20 (2.90)	203 (29.46)	221 (32.08)	171 (24.82)	29 (4.21)	25 (3.63)	20 (2.90)	689 (100%)

Sources: Survey data (2017)

The number of children attending primary school level classes (Grade 1 to 5) was the constituting 30 % and with high school level classes (Grade 6 to 9) and (Grade 10 to 11) is 32 % and 25 % respectively. This clearly indicates that these institutions are catering for children from poor communities and poor families that cannot provide post-primary education to their children due to various reasons such as poverty, inaccessibility to post-primary schools in or near their villages, etc. Children who came to the institutions at the time of schooling age were able to learn better than those who came to the institutions in later years. All of the institutions do have a "study room" (often also the dining room) for the children. If the institution has a generator or it has constant government electricity, it has adequate lighting. Otherwise, they use candles at night.

Chapter VI

Conclusion

In this study the numbers of institutions, among the care for children, the majority of children were orphans and others in private institutions (includes children from divorced parents, separated parents, and destitute children). Out of 14 institutions, 4 institutions are registered take care by DSW institutions.

In the institutions, most of the children come from remote areas where there was not adequate basic education. In this study, out of 689 children, (29%) are taken care of by DSW Registrar institutions and (71%) are under the shelter of non-DSW Registrar institutions. Out of 689 children, 380 (55%) are males and 309(45%) are females in institutions. The majority of (32%) children is (10-14) age group and 6% of children are under 5 age group.

Out of 689 children, the majority of 32% children are middle school level, 25 % of children are high school, 30% children are primary school, 4% of children are university level, 3% of children are illiterates and 3% of children are attending vocational training and required to help their institutions. Vocational training for children is extremely lacking in all institutions. Most of the principals and care givers are helping children from poor communities to get educational opportunities. Motivation and commitment of the heads are strong.

In the DSW Registrar institutions, the intake is balanced with capacity. At Non-DSW registrar institution, the intake is higher than capacity except in most institutions. Major sources of fund support to the institution are government, public donation, and income generating activities. Most of the institution's finance depends on public donations. The principals face heavy financial burdens because of the demands of orphans and

vulnerable children's needs such as caring, feeding, and counseling. The major source of finance for education in Non-DSW registrar institution is public donation. Therefore, the head of the institutions should accept children based on their capacity and income generating activities.

There are two shortcomings in the observed Non-DSW registrar institutions regarding children's health. The first is the lack of health educational talks presented by health personal of the institutions. Another is that most of the institutions do not prepare and record the health history of children. Two third of the institutions are lacking any physicians or teams who regularly oversee the health of the children. Many of the institutions do not have well trained care provider in primary healthcare.

These institutions cannot provide very good environment for children as there are not enough care givers, there is not a nurturing atmosphere as the staffs are not properly trained, and sometimes there is not enough food. Most of the principals of these orphanages as well as the community and religious leaders have no awareness of the long-term consequence of the orphanages problems for these children. Children are going through the government education system as far as they are able to, with the hope of finding a good job in whatever city and stay on at the orphanages as staff. Most of the principals plan that the children are to go back to their remote villages to help their own people. But they do not go back to their native villages because some are orphans, are strange to their native town and relatives, and there is a difference in development and living standard between urban and rural (remote) areas. Therefore, there is the wide gap between the expectation of the heads of the institutions and intention of the children. This is because of the capacity of MOE which cannot support schools and teachers for every community. Therefore, MOE should provide schools and good skilled teachers especially in rural and remote areas. UNICEF and the NGO can also train the caregivers in these institutions, to bring awareness as to the needs of children to remain with their families, especially to the leaders of organizations, and to strengthen care giving initiatives in the communities.

Another issue worth looking into is the type of support that should be provided for all institutions. Direct subsidies in cash, for example orphan grants, can be incentive to help these institutions. Indirect subsidies in the form of education vouchers, clothing vouchers, etc can support the OVC. The indirect subsidies seem to be the more effective alternative as they are easy to monitor and they are less likely to be abused since they can only be used for what they are intended of the benefit of the orphan. The direct cash

subsidy of grant will be open to abuse; if the heads receiving these grants do not use them for the benefit of the orphan.

In terms of the best approach to be employed in catering for the needs of orphans as well as keeping children off the street, the consensus worldwide from various studies is that: First start with the family as the first line of defense, the second approach is Community based cared approach, and institutional care should be the last approach.

Co-operative University (Thanlyin)

Department of Co-operative Studies

A Study of Monastic and Nunnery Education
Schools in Thanlyin Township

U Thein Than Niang

Tutor

Department of Co-operative Studies

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Abstract

Education is a basic objective of development and one of the Eight Millennium Development Goals. In Myanmar, Buddhist monastic education system makes a very positive contribution to fill the gap in the country's education system and providing basic educational needs of the country especially for children from needy families and orphans. The objectives of the research are to explore the monastic education in Myanmar and to analyze the strength and weakness, issues and operational challenges of monastic education schools in Thanlyin Township. In this research, primary data and secondary data are used. This research shows that the monastic education schools in Thanlyin Township makes a very positive contribution to the education in Myanmar.

Introduction

Meeting the Millennium Development Goal 2- universal primary education – is critical to the achievement of other MDG targets. Education, particularly primary education, is a goal in and of itself, but it is also a powerful driver of progress toward the other MDGs.

Education, like health, is a basic objective of development as well as important end in itself. Education is essential for a satisfying and rewarding life which is fundamental to the broader notion of expanded human capabilities that lie at the heart of the meaning of development.

Education benefits the individual by improving health and nutrition. It is particularly powerful for girls with its profound effects on reproductive health, and also improves child mortality and welfare through better nutrition and higher immunization rates. Moreover, education can reduce inequalities among individuals. Primary education plays a catalytic role for those most likely to be poor, including girls, ethnic minorities, orphans, disabled people, and rural families.

Rationale of the study

In Myanmar, there is a steady progress towards achieving universal primary education but there are many challenges such as lack of budget for more school buildings, shortage of teachers in remote areas.

Luckily for Myanmar, Buddhist monastic education system makes a very positive contribution to address these challenges, by filling the gap in the country's education system and providing basic educational needs of the country especially for children from needy families and orphans.

Objectives of the study

This study is done with the following objectives.

- To explore the monastic education in Myanmar
- To analyze the strength and weakness, issues and operational challenges of monastic education schools in Thanlyin Township

Methods of the study

In this research, primary data and secondary data are used. The primary data used in this research are collected by surveying questionnaire to the principles of all monastic education schools in Thanlyin Township. Secondary data were collected from the library of Yangon University of Economics, relevant internet websites, Ministry of Religious Affairs and Culture, Department of Promotion and Propagation of Sasana and relevant published books. The data are compiled and analyzed by using descriptive method.

Scope of the study

The scope of the study of monastic education all over Myanmar is confined the period from 2000-2001AY to 2014-2015 AY. This research mainly focuses on monastic education schools in Thanlyin Township.

Background and General Information about Monastic Education

Background History of Monastic Education

The Buddhist monastic education system in Myanmar is an old educational system with a very long history, dated back to 11th Century King Anawrahta period. The schools provided important educational needs throughout Myanmar's history and they were the only source of education for all sorts of lives ranging from royal princes to unskilled workers until colonial period. The Buddhist monastic schools helped to give Myanmar a rate of literacy considerably above those of other Far Eastern countries in early 1990s. In 1931, 56 percent of the males over the age of five and 16.5 percent of the females were literate-approximately four times as high as those reported for India at the same time.

Monastic Education and Myanmar Culture

Monastic education is the tap root of Myanmar culture. Since Theravada Buddhism established in Myanmar in 11th century thanks to Reverend Arahana, Bagan flourished under the guidance of monastic education system. Famous Bagan pagodas are the good examples of

skills and intelligence of Bagan people. Modern experts are fascinated by architecture of Bagan pagodas. In Pinya, Saging and Inwya Periods, monastic education system seemed to be led by Gamawathi, the monks who were involved in secular affairs, for the benefits of people. At these times, monastic schools taught not only basic literacy skills but also other subjects and livelihood skills such as medicine, arts and crafts, astronomy, military strategy, etc and even dancing and singing. During the reign of ancient Myanmar kings, the only one system of education was the monastic education. However, monastic education was not offered to girls and women. As a result, the majority of the illiterate were women in Ancient Myanmar.

Until 1852, there had been one monastery in each and every village. In Mandalay Palace City are many prestigious monastic schools which could be called as universities. In 1852, monasteries in Lower Myanmar were crippled by the Second British-Myanmar War. Many Myanmar and Mon monks from the Lower Myanmar abandoned their monasteries and moved to the Upper Myanmar under the Myanmar King. However, when the whole country fell under the British rule in 1885, it was not strange that Buddhist monastic schools were in decline.

Monastic Education during Colonial Period

Sir Arthur Fare, one of the Senior British Administrative Officers, noticed the great influence of Buddhist monasteries and monks on the Myanmar society. Perhaps the British intended to take advantage of this to be able to reduce spending on education for Myanmar people. Based on the instruction of Sir Arthur Fare, a lot of effort was put in to recognize and support the monastic education schools between 1864 and 1952. In 1867, the number of recognized monastic schools was 31 in the Lower Myanmar. The number increased to 3975 in 1886. After seizing the Upper Myanmar, 1898 monastic schools were recognized in 1896 and so the total of schools became 6873 in the whole Myanmar. But there had been a significant decline since there were only 3091 schools in 1961.

Despite the efforts, this 50 year project was not a success. This main reason was that the authorities provided more support to the government recognized private schools at the same time and they did not understand the code of conduct of Buddhist monks. In 1932, only 928 were left as recognized schools.

At the time of U Ba Yin, Minister of Education, The assessment of the monastic education system was done in 1941. At that time, the political situation in Myanmar was chaotic. There was a real threat of war in many parts of the world. The Myanmar national

government had a plan to make primary education free and compulsory. In this effort, the government appreciated the role of monastic education system as it had manpower and numerous school building and monasteries were the shelters for children from poor families to take refuge. In 1941, the government announced that they would join hands with the Buddhist monks in their efforts for free and compulsory primary education. In the same year, the committees could submit reports in January, 1942. It was reported that to bring up children with high moral value and to provide opportunity for education to each and every child regardless of their socio-economic status and also without placing much burden on the government, the monastic education system was a great help. So, it recommended cooperating with Buddhist monasteries. Unfortunately, the Second World War broke out and the project came to an end.

After the war, another committee was organized to make assessment of the monastic education system. This committee report made the same recommendation as the previous one.

Monastic Education during the Struggle for Independence

During the British colonial period, the drop-out rate of primary schools reached up to 87% for various reasons. British's attempts to promote the monastic education failed mainly because they did not do with good intentions and their procedures could not accepted by Buddhist monks.

The British colonial education system destroyed the centuries old monastery education indirectly, and thus impeded the growth of literacy among the masses, especially among people in rural areas. They did this by creating three kinds of schools- Vernacular Schools for rural masse, Anglo-Vernacular Schools designed to produce clerks for trading firms with a smattering of English and Knowledge of accounts, and English Schools run by missionaries who made if mandatory for students to study Christianity with their school work.

Things had gone from bad to worse when Japanese invaded Myanmar during the Second World War. Japanese took no interest in monastic education. However, Buddhist monasteries continued to provide basic literacy skills and Buddha's teachings to the rural communities and poor urban communities. After Japanese were defeated, the British reentered Myanmar and announced on 1st January, 1994 that they would rule the country with military administration. At that time, Myanmar was struggling hard for independence and education was not a priority.

Monastic Education in Post-Independence Period (1948-1962)

After the country gained independence, the new government had to deal with civil unrest. Therefore, only two years after independence, it could adopt and implement the Education Policy that included free education in state schools; vocational training; the use of Myanmar as a medium of instruction while allowing English at the college level; and the creation of new textbooks that highlighted the spirit of nationalism. To implement the education policy, the government sent six delegates led by U Kaung, the Commissioner of Education, to England, United States of America, Mexico, Canada and Pakistan to study the education systems in these countries. After they arrived back, the Education Reconstruction Committee was organized with 21 committee members and Pyi Taw Thar Education Plan was laid down.

One of the basic objectives of this Plan was that every Myanmar citizen must be able to read and write. This objective highlighted the importance of monastic education. Buddhist monasteries accepted the education policy and guidance of the post-independence Myanmar government and cooperated in public education campaigns. As a result, the role of monastic education became more significant and the monasteries became the learning centers which could provide secular education in addition to Buddha's teachings.

On March 20, 1949, The Public Education Council was first organized and led by U Tun Pe, Minister for Public Relation. In 1952, the new Public Education Council was reorganized. It was led by U Ba Saw, Minister for Ministry of Relief, Resettlement and Social Welfare. This council supervised and supported monastic education system to be effective and systematic. Pyi Taw Thar Monastic Education Project aimed to open 5,000 monastic education schools in 1952-53. The project adopted three main strategies. They were

- (1) To register a monastic school at Public Education Council as a monastic education school if it existed in a village where there was no public school and it taught at least 20 students and if the abbot wished his school to be registered.
- (2) To provide the reverend principals of monastic education schools with teacher's guide books, stationery and furniture, and to provide the students in respective grades with text books and stationery.
- (3) To make arrangements for the students from registered monastic education schools to be able to take 4th grade examination held by the government in states and divisions.

The Public Education Council made the list of the monastic schools and registered them, distributed teaching aids and stationery to them and supported them in various ways.

However, only 4,239 schools could be opened over the five year period until 1956-57 despite the plan to open 5,000 monastic schools. The reason might be due to insurgency.

In the First Four-Year Education Plan, monastic education saw considerable progress. The Second Four-Year Education Plan was from 1956-57 to 1959-60. The Prime Minister U Ba Swe emphasized the importance of monastic schools in education sector. He said that the government aimed to pass the act of compulsory education but the primary schools could not be opened in every village yet. Therefore, in the villages where public primary schools did not exist, Buddhist monasteries are the only places where the children could study.

During the four-year period of the Second Education Plan, 5,545 monastic education schools could be registered in 3,207 villages. 768 monastic schools could be upgrade into public primary schools. A total of 263095 students studied in these schools. 948 monastic school students passed the 4th standard examination held by the Ministry of Education in 1957-58 AY compared with only 294 in 1953-54 AY. Among these students, some arose as outstanding ones even at district level. There were 7,441 monks who acted as teachers to teach in monastic education schools.

Monastic Education in Socialist Revolutionary Period

Early in this period, monastic education was continued to be encouraged by the government. Ten years after gaining independence, in 1958, political situation in the country was unstable. On 2nd March, 1962, the Revolutionary Council Government seized the state power to prevent disintegration of the country. With the change of government, there were also changes in monastic education system. In November 1962, the section of monastic education was set up under the Department of Basic Education. From 1962 to 1972, this section carried out many activities such as standardization of the curriculum in both monastic education schools and public schools, organizing seminars for reverend sayartaws from monastic schools and registration of the monastic education schools, etc. In spite of these efforts, the monastic education section was dissolved and monastic education system was abolished in 1972. However, with the support of the lay Buddhist people, the monastic schools continued to reach 3 R's and Myanmar culture to the children in rural areas.

The government tried to fill the gap in education system created by abolishing monastic education system by promoting literacy campaign. A literacy campaign was initiated in 1965 with trials conducted until 1968. During this period 6,551 villages mobilized 48,398 volunteer teachers and made 164,491 individuals fully literate and 151,682 almost literate.

This campaign was formally launched in 1969, with townships in Meiktila District. Since that time the campaign had been gradually extended to cover other areas. The strategy adopted by the campaign might be characterized as: A mass movement with community participation, using local resources on a voluntary basis in designated areas throughout the year until the whole campaign areas became literate. These achievements, made possible by voluntary mass participation and contributions by students from universities, colleges, institutes and local literate people, were given recognition by UNESCO which awarded Myanmar with two literacy prizes: The Mohamed Rexa Pahlevi Prize in 1971 for the voluntary participation of students and youths and the Noma Prize in 1983 for literacy literature and activities.

Although the literacy campaigns were successful and literacy rate increased, a great loss to the country was that Myanmar children were kept away from Buddhist teachings and Myanmar culture.

Monastic Education under the Rule of the State Peace and Development Council

All along the history, the monastic education has managed to survive its ups and downs thanks to the dedicated Buddhist monks. At the end of the Socialist Revolutionary Period, Myanmar tradition and culture was nearly vanished along with diminishing monastic education. Therefore, State Sangha Maha Nayaka Sayadaw advocated the importance role of monastic education to the government senior officers.

The Effort of the State Sangha Maha Nayaka Committee for Monastic Education

The Third State Sangha Maha Nayaka Committee Plenary Meeting was held from November 4 to 5 in 1992 and attended by all 47 State Sangha Maha Nayaka Sayadaws. All the Sayadaws had come to an agreement to urge the government to resume the monastic education system which played a vital role in nurturing cultured and educated Myanmar citizens. As per request by the Sayadaws, Lt. General Phoe Myint, Minister for Ministry of Home Affairs and Religious Affairs, agreed to send a request letter to Minister for Ministry of Education. The main point of the letter was to permit the children from monastic schools to enter 5th Grade Examination after completing Yin Kyay Lein Mar courses. MOE took action and gave instruction to the Director General of the Department of Basic Education and, through him, all township health officers in every state and region to assist the monastic schools regarding their students entering 5th Grade Examination.

The workshop on Monastic Education System could be held successfully from October 1 to 2 in 1992. The members of State Sangha Mahar Nayaka Committees, Chairman of Sangha Mahar Nayaka Committee from all states and regions, Wineedo Sayartaws who were learned in Vinayas, ministers, deputy ministers, director generals and responsible senior officers from Ministry of Religious Affairs and Ministry of Education attended this workshop.

At this workshop, General Myo Myint, Minister for Ministry of Religious Affairs, said that monastic education system was currently the only way to reach the children, rich and poor, in every corners of the country including hilly, remote and rural areas. The country was implementing “Education for All” activities and would support the provision of primary education by monastic schools as much as they could.

The rules and regulations for monastic education schools finally could be established at the State Sangha Mahar Nayaka Committtee Plenary Meeting held from 18 to 19 March, 1994. These rules and regulations were published first on 5th July, 1994 and immediately distributed.

Since the end of the Third State Sangha Mahar Nayaka Committee Plenary Meeting in 1992 until the publishing of the monastic education school rules and regulations in 1994, the member Sayartaws of State Sangha Mahar Nayaka Committee themselves accompanied by the Minister of Religious Affairs made field visits all over the country and met the stakeholders- monks, donars, local authorities and education officers. These vistic even covered hilly regions and border areas. The Sate Sangha Mahar Nayaka Sayartaws made these field visits with great efforts despite their old age and poor health. The Buddhist monks and lay Buddhists were very happy and delightful with the chance to pay obeisance to the State Sangha Mahaar Nayaka Reverend Sayartaws in person.

The Support of the Ministries

There were a great deal of coordination and collaboration between the two ministries- Ministry of Religious Affairs and Ministry of Education. The senior officers from these ministries made field visit and assisted the monastic education schools as required. When the senior officers found out during these visits that the number of students was too large in some of the monastic schools, they coordinated with the Ministry of Social Welfare, Relief and Resettlement to support these schools as parahita (social welfare) monastic education schools.

The Rules for Monastic Education Schools (1994)

The Rules for Monastic Education Schools (1994) produced in accordance with the guidance of State Sangha Mahar Nayaka Sayartaws was a real milestone in the history of monastic education. It consists of eleven pages and seven chapters Glossary, Objective, Supervisory Committee, Duties and Responsibilities of Principal Monks, Duties and Responsibilities of Teachers, Application for Admission and Duties and Responsibilities of Students, attached with forms.

Aims and Objectives of Monastic Education School

The aims and objective of monastic education schools are as follows.

- (1) For the students, rich of poor, to be efficient in writing, reading and arithmetic, basic primary education and secular education.
- (2) To be affordable and easily accessible.
- (3) To be good in character and to become good citizens who are willing to serve the public and the country.
- (4) To understand Myanmar traditional Buddhist culture and to adopt it devotedly.
- (5) To become good Buddhists who will willingly take responsibility of future sasana by understanding and practice of Buddhist teachings.
- (6) To be able to safeguard nationality, traditions and Buddha sasana.

Although the monastic education system has successfully been revitalized with the great efforts of reverend sayartaws and with the support of the government, there were issues and problems. There were some principal monks from some townships who demanded what were beyond the authority of the concerning ministries and against the guidance of State Sangha Mahar Nayaka Reverend Sayartaws.

Reverend Sayartaws had already guessed beforehand that the issues like those could emerge. Therefore, being led by the Chairman and members of State Sangha Mahar Nayaka Committee, many small groups traveled across the country by road, by water and by air and conducted meeting with 280 monastic schools in 42 townships to explain the rules and regulations of monastic education system. It was not so easy to carry out all these activities. Many things had to be negotiated between monastic schools and public schools, township education officers, immigration officers and religious officers. Ministry of Religious Affairs also arranged trips for responsible officers from central level to states and divisions three monthly. It also instructed the religious officers in states and divisions to visit every township at least 3 to 4 times a year.

Overcoming the difficulties and obstacles by close coordination among the reverend sayartaws, the government departments and donors, the monastic education system has developed with a very fast pace under the rule of State Peace and Development Council.

The more the people have relied on monastic education schools, the fewer the number of children who drop out of school before completing primary education due poverty. In fact, monastic education schools not only provide education but also feed the disadvantaged children.

But with increasing number of students, new issues and problems arose. For example, to take care of girls over 12 years emerged as a big issue. It was inappropriate for the monasteries to keep these adolescent girls under their roofs. To solve these problems and for other administration and supervision issues, it became necessary to assign a particular department for monastic education schools. On 29th November 1994, the Department of Promotion and Propagation of Sasana was assigned to deal with the issues related to monastic education schools. The supervisory committees were also organized at three levels- enteral, state/ regional and township.

Monastic Education in New Government

Nowadays, Government continued provided and supported to the monastic education schools. Government provided text books and exercises books as free of charge to all monastic education schools. Government supports a teacher in accordance to a ratio of 40 students to one teacher. Monthly pay is Kyats 36,000 to a primary teacher, Kyats 41,000 for a post primary and middle school teacher and Kyats 46,000 for a high school teacher.

Poor children are not only in rural area but also in urban area needed to provide the education support of monastic education. Therefore, from May 29 to 31, 2014, in Ho Pone Township, assembly of monastic education schools is held. The decision to increase for primary and post primary monastic education schools is set at that assembly. And also Monastic Education Network is decided to establish by the instruction of State Sangha Mahar Nayaka Committee.

General Information about Monastic Education Schools

As a part of analysis on the role of monastic education schools, some general information about them- growth of the schools all over Myanmar, their geographical distribution and gender differences of students will be discussed.

Growth of Monastic Education Schools

Monastic education returned in 1993 when the government began recognizing monastic schools that followed the guidelines of the Ministry of Education. The number of monastic education schools has increased dramatically since then.

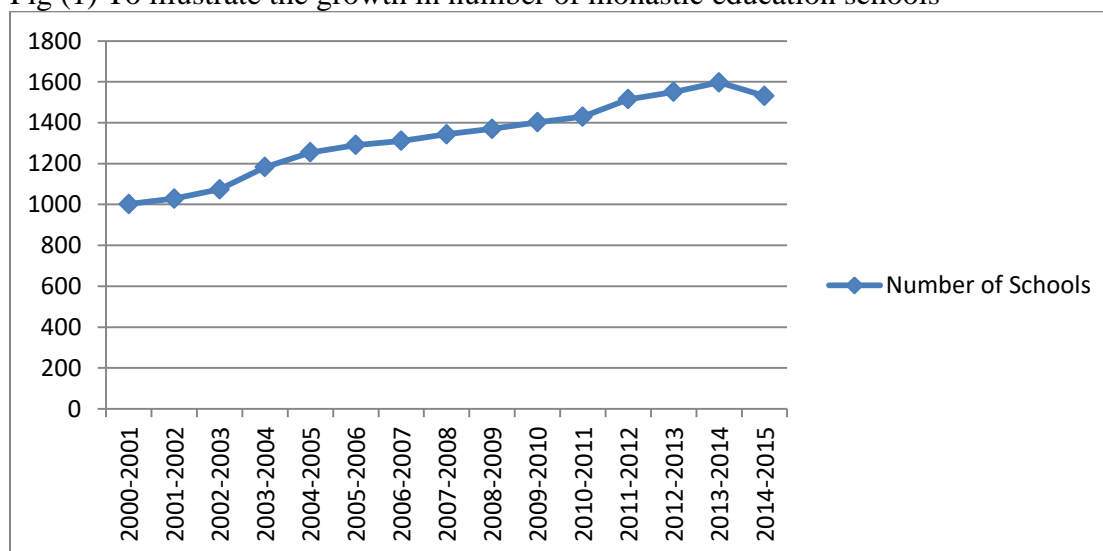
The numbers of monastic education schools by year from 2000-2001 AY to 2014-2015 AY provided in Table (1). In 2014-2015 AY, there are 1531 monastic education schools all over Myanmar Compared with only 1002 schools in 2000-2001 AY.

Table(1) Number of Monastic Education Schools all over Myanmar during 15 year, period from 2000-2001 AY to 2014-2015 AY

Sr.	Academic Year	Number of Schools
1	2000-2001	1002
2	2001-2002	1028
3	2002-2003	1074
4	2003-2004	1183
5	2004-2005	1255
6	2005-2006	1291
7	2006-2007	1311
8	2007-2008	1343
9	2008-2009	1370
10	2009-2010	1402
11	2010-2011	1429
12	2011-2012	1515
13	2012-2013	1551
14	2013-2014	1597
15	2014-2015	1531

Source: CSO, MNPED(2004,2007,2011 and 2015), Statistical Year Book

Fig (1) To illustrate the growth in number of monastic education schools



Source: Table (1)

The graph clearly shows that the monastic education schools have consistently increased in number since 2000-2001 AY. It has increased by over eleven years.

Out of 1531 schools in 2014-2015 AY, 2 teach at high school level, at secondary level and at primary level. By looking at the proportion of schools at three level of education, it can be seen that the main focus of monastic education schools is on primary education.

As the monastic education schools increases, the number of the students served by these schools also increases. More and more children gain access to formal education as it can be provided by the monastic education as a co-education system in 1993.

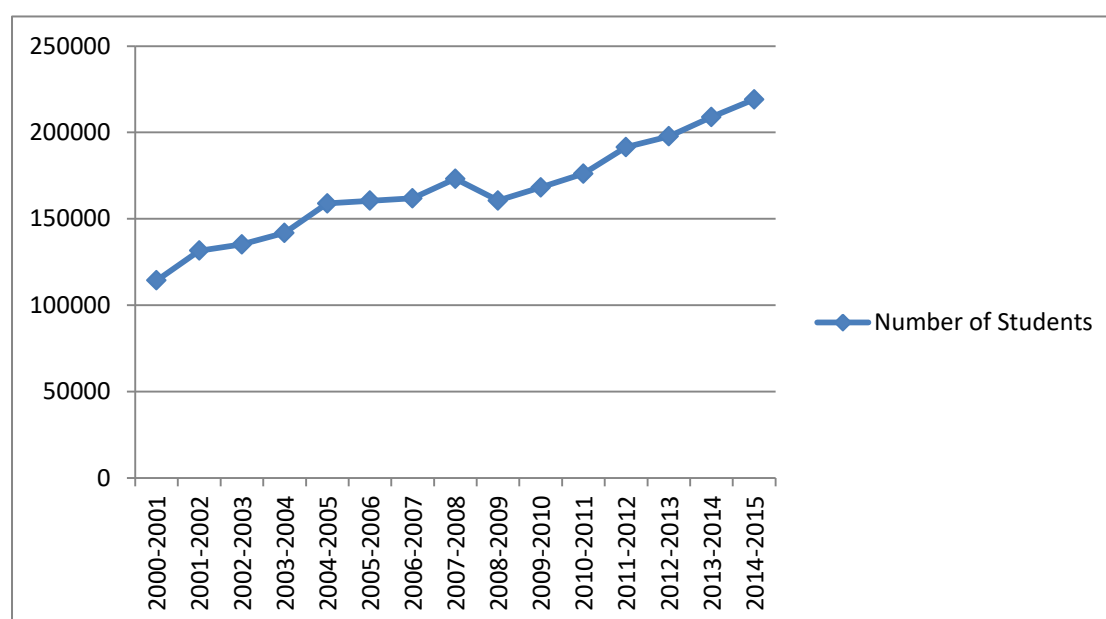
The increase in the number of the primary students of monastic primary education schools also shows a consistency except a slight dip in 2008-2009 AY. Its growth rate is even faster than that of schools. It has increased by 54% from 114,326 in 2000-2001 AY to 219,107 in 2014-2015 AY. This significant growth reflects the increasing demand of the schools by the communities, particularly poor communities. This is illustrated in the following Table (2) and figure (2).

Table (2) Number of Primary students in Monastic Primary Education Schools all over Myanmar during 15 year, period form 2000-2001 AY to 2014-2015 AY

Sr.	Academic Year	Number of Students
1	2000-2001	114326
2	2001-2002	131563
3	2002-2003	135225
4	2003-2004	141897
5	2004-2005	158925
6	2005-2006	160432
7	2006-2007	161900
8	2007-2008	173159
9	2008-2009	160555
10	2009-2010	168157
11	2010-2011	176172
12	2011-2012	191504
13	2012-2013	197700
14	2013-2014	208926
15	2014-2015	219107

Source: CSO, MNPED(2004,2007,2011 and 2015), Statistical Year Book

Figure (2) Number of Primary students in Monastic Primary Education Schools all over Myanmar during 15-year, period from 2000-2001 AY to 2014-2015 AY



Source Table (2)

Geographical Distribution of the Schools

Monastic education schools do exist in all states and regions of Myanmar. Geographical location is one of the challenges of education. Uneven spread of population also creates serious disparities in educational opportunity. Teacher shortage is another problem in remote areas. In some places, the number of students is so small so that it will be very expensive and will not be cost-effective to build a school building to serve their needs. Many children living in remote areas are not accessible to schools due to lack of adequate transportation system or schools. Although there cannot be a primary school in each and every village, there can be a monastery. Therefore, operating monastic education schools is a good strategy of using the existing infrastructure and human resource. There is no need to worry about school buildings, teachers and transportation for students.

By comparing the number of monastic schools in states and regions, it can be seen that many more schools exist in regions than in states. Mandalay Region is the most number of schools with 351 monastic education schools in Myanmar. The number in regions is over four times higher than that in states (see Table). This may be due to the population density, ethnicity, religions, remoteness and difficulty in transportation and communication of the areas.

Table (3) Number of Monastic Education Schools in States and Regions in 2014-2015 AY

Sr. No.	State	No. of Schools		Sr. No.	Region	No. of Schools
1	Kachin State	26		1	Sagaing Region	196
2	Kayah State	8		2	Tanintharyi Region	48
3	Kayin State	35		3	Bago Region	142
4	Chin State	18		4	Magway Region	119
5	Mon State	55		5	Mandalay Region	351
6	Rakhine State	78		6	Yangon Region	210
7	Shan State	78		7	Ayeyarwady Region	167
	Total	298			Total	1233

Source: CSO, MNPED(2015), Statistical Year Book

Gender Difference of the Students in Monastic Education Schools

There are four categories of students in monastic education schools-novices, nuns, boys and girls. Most of the residential students are ordained as novices and nuns. It depends on the abbot or abbess of the school. There are some schools which keep residential boys and girls students without ordination into novices and nuns.

There is gender difference in monastic education school students. The number of male students is always larger than that of female students. Gender difference is even larger in middle school level before 2014-2015 AY. It can, therefore, be said that girls are less accessible to secondary education than boys.

Looking at sex ratios of monastic education school students from 2000-2001 AY to 2014-2015 AY, the largest sex ration is found in 2000-2001 AY which 159.1 at middle schools level. It means that are 159.1 male students for every 100 female students.

But the data also shows that sex ration is smaller and smaller as yeas pass. It indicates that the modern monastic education schools tend to provide equal opportunity to both boys and girls unlike monastic schools in old days, see Table (4) and Table (5).

On analyzing some general information about monastic education schools in Myanmar, it is found that monastic education schools show rapid growth reflecting the increasing demand for monastic education; they put great emphasis on primary education.

Table (4) Sex Ratios of the Primary School Students in Monastic Education Schools in Myanmar from 200-2001 to 2015-2016

Sr.	Year	Novice	Male	Male Total	Nun	Female	Female Total	Sex Ratio
1	2000-2001	6478	60612	67090	864	46372	47236	142.0
2	2001-2002	7223	67334	74557	757	56251	57008	130.8
3	2002-2003	6326	70247	76573	673	58009	58682	130.5
4	2003-2004	7755	72287	80042	855	61000	61855	129.4
5	2004-2005	8429	80713	89142	959	68824	69783	127.7
6	2005-2006	8282	80945	89227	1310	69895	71205	125.3
7	2006-2007	8149	80326	88475	1213	72222	73435	120.5
8	2007-2008	8764	86007	94771	1678	76710	78388	120.9
9	2008-2009	8219	78771	86990	1815	71750	73565	118.2
10	2009-2010	8195	82489	90684	2130	75343	77473	117.1
11	2010-2011	7985	87663	95648	2801	77723	80524	118.1
12	2011-2012	10388	93120	103508	3563	84433	87996	117.6
13	2012-2013	10940	94974	105914	4474	87312	91786	115.4
14	2013-2014	13099	98813	111912	5264	91750	97014	115.4
15	2014-2015	12111	115658	127769	5571	85767	91338	139.9

Source: CSO, MNPED (2004, 2007, 2011 and 2015), Statistical Year Book

Table (5) Sex Ratios of the Middle School Students in Monastic Education Schools in Myanmar from 200-2001 to 2015-2016

Sr.	Year	Novice	Male	Male Total	Nun	Female	Female Total	Sex Ratio
1	2000-2001	-	6593	6593	-	4144	4144	159.1
2	2001-2002	-	8316	8316	-	5963	5963	139.5
3	2002-2003	1409	6965	8374	168	5925	6093	137.4
4	2003-2004	1888	7613	9501	193	6449	6642	143.1
5	2004-2005	2223	7310	9533	209	6423	6632	143.7
6	2005-2006	2448	9425	11873	383	8624	9007	131.8
7	2006-2007	3169	11919	15088	530	11073	11603	130.1
8	2007-2008	2895	8057	10952	554	7783	8337	131.4
9	2008-2009	2955	13319	16247	696	12374	13070	124.3
10	2009-2010	4137	13878	18015	1072	13654	14726	112.3
11	2010-2011	3687	15246	18933	1538	15801	17339	109.2
12	2011-2012	3742	16384	20126	1908	15518	17426	115.5
13	2012-2013	5536	19780	25316	2563	19336	21899	115.6
14	2013-2014	7738	21629	29367	3761	22460	26221	111.9
15	2014-2015	10458	29879	40337	5844	23454	29298	137.7

Source: CSO, MNPED (2004, 2007, 2011 and 2015), Statistical Year Book

Monastic Education Schools in Thanlyin Township

The monastic education system in Myanmar is under the guidance of two ministries- Ministry of Culture and Religious Affairs and Ministry of Education. Ministry of Culture and Religious Affairs is responsible for rules and regulation while Ministry of Education is for curriculum.

The Supervisory Committee of Monastic Education Schools provides guidance, close and supportive supervision and monitoring to the monastic education schools all over Myanmar. The Supervisory Committee is organized in three levels- central, state/divisional and township.

All monastic education schools in Thanlyin Township are operated under the guidance and supervision of Supervisory Committee of Monastic Education Schools, Thanlyin Township. This committee is composed of eight sayartaws and six nuns in all monastic education schools. Syardaw U Zanaka, principle of Bon Pyan Monastic Education School, Thanlyin Township perform the duty as a chairman, secretary is U Nandar Wintha, principle of Su Taung Pyae. Other six sayartaws and six nuns are members.

Monastic Education Schools in Thanlyin Township

In 2016-2017 AY, there is 1586 MES all over Myanmar. Mandalay Region is the most number of schools with 351 MES. The second most is Yangon Region with 210 MES. There are four districts in Yangon Region. The numbers of Monastic Education School in four districts are show in Table (6).

Table (6) The Number of Monastic Education School in Four Districts

Sr. No.	Name of District	Number of Monastic Education School
1	Yangon East District	68
2	Yangon West District	24
3	Yangon South District	50
4	Yangon North District	86
	Total	228

Source: List of monastic education, Ministry of Culture and Religious Affairs (2016-17 AY)

By the studying Table (6), Yangon North District with 86 MES is the most and Yangon East District with 68 MES is the second most in Yangon Region. The lowest is the Yangon West District with 24 MES. Yangon East District is composed with eight Townships. The numbers of monastic education school in every township are show in Table (7).

Table (7) Numbers of Monastic Education Schools in Each Township of Yangon East District in 2016-2017 AY

Sr. No	Name of Township	Number of Monastic Education School
1	Thanlyin	14
2	Kauktan	6
3	Thonegwa	5
4	Khayan	9
5	Twintay	1
6	Kawmu	5
7	Kwinchangone	7
8	Dala	3
	Total	50

Source: Annual Report, Ministry of Religious Affairs and Culture (2017-2018AY)

In Table (7), Thanlyin Township with the numbers of 14 monastic education schools is the most. Khayan Township which will be studied on the second most is the number of 9 monastic education schools. The third most is the Kwinchangone Township with the numbers of 7 monastic education schools.

There was three monastic education schools in Thanlyin Township is run since 1993-1994 AY. The numbers of monastic education schools are improved from 1993-1994 to 2014-2015 AY. There are fourteen monastic education schools in Thanlyin Township during the academic years from 1993-1994 AY to 2017-2018 Year (see Table-8).

Table (8) Number of Monastic Education Schools in Thanlyin Township

Sr. No.	Name of School	Name of Principle	Establish Year	Level
1	Bone Pyan	U Zanaka	1993-94	Post-primary
2	Su Taung Pyae	U Nandar Wintha	1993-94	Post-primary
3	Thatama Zaw Ti Karyone	U Eain Na Ka	1993-94	Post-primary
4	Tharyar Kone	U Sandimar	2004-05	Post-primary
5	Da Mi Kar Yarma	U Sandar Waya	2003-04	Post-primary
6	Dama Depa	Dr. Thiha Nyanna Linkharya Biwintha	2011-12	Post-primary
7	Su Htoo Pan	U May Darwi	2003-04	Post-primary
8	Khay Mar Yar Ma	Daw Sandamarlar	2006-07	Post-primary
9	Kay Thaya Wadi	Daw Kaythar Yi	2006-07	Post-primary
10	Tha Main Dawdaya	Daw Kaythar Yi	2010-11	Post-primary
11	Thar Tha Na Man Tie	U Sandimar	1990-91	Primary
12	Wana Warthi Aye Yaik San	Daw Nyar Nay Thi	2010-11	Primary
13	Wi Ya Thi Tawya	Daw Haymar Thi	2010-11	Primary
14	Thi La War	Daw Aye Thu Wadi	2011-12	Primary

Source: Survey Data

Distribution in Urban and Rural Areas and Level of Monastic Education Schools in Thanlyin Township

Table (9) Distribution of Monastic Education Schools of Thanlyin Township

Area	Urban Area	Rural Area	Total
No. of schools	4	10	14
% of schools	28.6 %	71.4 %	100 %

Source: Survey Data

According to Table (9), most of them (71.4%) are in rural area. Four of them are only in urban. Therefore Monastic Education Schools in Thanlyin Township can be form mostly in rural area than urban area.

Table (10) Number of Monastic Education Schools in Thanlyin Township by Level of Schools

Level of school	Primary	Post-Primary	Total
No. of schools	4	10	14
% of schools	28.6 %	71.4 %	100 %

Source: Survey Data

According to the Table (10), the school levels of Monastic Education School are two levels as primary level and post primary levels. Neither middle nor high monastic education schools levels are in Thanlyin Township. Among them, ten monastic education schools are post-primary school and other four monastic education schools are primary.

Buildings and Facilities

(a) School Buildings

Table (11) Types of School Building of Monastic Education Schools in Thanlyin Township

Type of School Buildings	R.C	Brick & Wood	Bamboo with Thatch Roof	Bamboo with Galvanized Iron Roof
No. of schools	11	3	-	-
% of schools	79%	21%	0%	0%

Source: Survey Data

According to Table (11), most of all monastic education schools are RC building. Only there monastic education schools are built with bricks and woods. There are no schools with bamboo with thatch roof and bamboo with galvanized iron roof.

(b) Classrooms

Table (12) The Numbers of Classrooms in all Monastic Education School in Thanlyin Township

Classrooms	<5	6 to 9	10 to 20	>20	Total
No. of schools	2	6	5	1	14
% of schools	14%	43%	36%	7%	100%

Source: Survey Data

The classrooms for every grade are put at all monastic education school in Thanlyin Township. There are three monastic education schools have only a common room for some grade which is partitioned into classroom.

(c) Toilets

Table (13) Number of Toilets in Monastic Education Schools in Thanlyin Township

No. of toilets	<5	5 to 9	10 to 20	Total
No. of schools	3	5	6	14
% of schools	21.4%	35.7%	42.9%	100%

Source: Survey Data

In Table (13) six schools in Thanlyin Township have 10 to 20 toilets. There is no school without toilet. Five schools have 5 to 9 toilets and the other three schools have under 5 toilets. Every school has sufficient toilets.

(d) Drinking Water

Table (14) The Source of Drinking Water in Monastic Education Schools in Thanlyin Township

Source	Public Water Supply	Tube Well	Well and Purified Water	Tube Well and Purified Water	Total
No. of schools	-	3	1	10	14
% of schools	-	21.4%	7.1%	71.5%	100%

Source: Survey Data

In Table (14), it shows most of the schools get drinking water form tube wells and they have purified water machine. Only three schools does not have purified water machine.

Gender of the Students

Table (15) Gender of Monastic Education School Students in Thanlyin Township in 217-2018 AY

Sr .	Name of Schools	Novice	Male	Male Total	Nun	Female	Female Total	Total
1	Bone Pyan	14	311	325	69	294	363	688
2	Su Taung Pyae	8	752	760	38	771	809	1569
3	Thatama Zaw Ti Karyone	33	492	525	-	403	403	928
4	Tharyar Kone	18	133	151	-	161	161	312
5	Da Mi Kar Yarma	107	50	157	-	93	93	250
6	Dama Depa	31	188	219	1	198	199	418
7	Su Htoo Pan	13	194	207	10	150	160	367
8	Khay Mar Yar Ma	5	284	289	285	285	570	859
9	Kay Thaya Wadi	-	7	7	146	124	270	277
10	Tha Main Dawdaya	17	143	160	67	122	189	349
11	Thar Tha Na Man Tie	-	24	24	-	11	11	35
12	Wana Warthi Aye Yaik San	17	84	101	29	60	89	190
13	Wi Ya Thi Tawya	19	53	72	277	39	316	388
14	Thi La War	-	59	59	28	44	72	131
	Total	282	2774	3056	950	2755	3705	6761

Source: Survey Data

According to Table (15), there are 3056 boy students and 3705 girl students in total 6761 students. All schools are mixed school of male and female. Eight schools have more girl students than boy students.

Gender of Resident Students

There are 1635 resident students at the MES in Thanlyin Township. The most resident students are at Su Taung Pyae monastic education school. Those students are orphans come from the other townships. There is no resident student at Bon Pyan monastic education school. The gender of resident students in monastic education school in Thanlyin Township is show in Table (16).

Table (16) Gender of Resident Students in Monastic Education School in Thanlyin Township in 217-2018 AY

Sr.	Name of Schools	Novice	Male	Male Total	Nun	Female	Female Total	Total
1	Bone Pyan	-	-	-	-	-	-	-
2	Su Taung Pyae	62	58	120	-	362	362	482
3	Thatama Zaw Ti Karyone	24	40	64	-	-	-	64
4	Tharyar Kone	23	2	25	-	-	-	25
5	Da Mi Kar Yarma	105	22	127	-	55	55	182
6	Dama Depa	30	2	32	-	-	-	32
7	Su Htoo Pan	14	49	63	-	-	-	63
8	Khay Mar Yar Ma	-	-	-	403	-	403	403
9	Kay Thaya Wadi	-	3	3	130	7	137	140
10	Tha Main Dawdaya	-	-	-	70	-	70	70
11	Thar Tha Na Man Tie	-	2	2	-	-	-	2
12	Wana Warthi Aye Yaik San	-	-	-	56	-	56	26
13	Wi Ya Thi Tawya	-	-	-	50	-	50	50
14	Thi La War	-	13	13	52	1	53	66
	Total	258	191	449	761	425	1186	1635

Source: Survey Data

Table (17) Composition of day students and resident students in Monastic Education Schools of Thanlyin Township in 2017-2018 AY

Sr.	Name of Schools	Day Students %	Resident Students %	Total
1	Bone Pyan	100	0	100
2	Su Taung Pyae	69.3	30.7	100
3	Thatama Zaw Ti Karyone	93.1	6.9	100
4	Tharyar Kone	92	8	100
5	Da Mi Kar Yarma	27.2	72.8	100
6	Dama Depa	92.3	7.7	100
7	Su Htoo Pan	82.9	17.1	100
8	Khay Mar Yar Ma	53.1	46.9	100
9	Kay Thaya Wadi	49.5	50.5	100
10	Tha Main Dawdaya	80	20	100
11	Thar Tha Na Man Tie	94.3	5.7	100
12	Wana Warthi Aye Yaik San	86.3	13.7	100
13	Wi Ya Thi Tawya	87.1	12.9	100
14	Thi La War	49.6	50.4	100
	Total	75.8	24.2%	100

Source: Survey Data

According to Table (17), day students are more than resident students in all monastic education schools except Thi La War.

Teachers in Monastic Education Schools

(a) Type of teachers

Monastic education school teachers can be categorized in four- monks, nuns, staff teachers and volunteers. Staff teachers mean that they are paid a certain amount of salary by the schools which employ them.

Table (18) Categories of Teachers in Primary and Post-Primary Levels

Sr.	Name of Schools	Monk	Nun	Paid Teachers	Volunteer Teachers	Total
1	Bone Pyan	1	-	-	17	18
2	Su Taung Pyae	-	-	-	41	41
3	Thatama Zaw Ti Karyone	-	-	-	22	22
4	Tharyar Kone	-	-	-	9	9
5	Da Mi Kar Yarma	-	-	-	9	9
6	Dama Depa	-	-	-	13	13
7	Su Htoo Pan	-	-	-	11	11
8	Khay Mar Yar Ma	-	3	-	21	24
9	Kay Thaya Wadi	-	1	-	11	12
10	Tha Main Dawdaya	-	-	-	8	8
11	Thar Tha Na Man Tie	-	-	-	4	4
12	Wana Warthi Aye Yaik San	-	-	-	5	5
13	Wi Ya Thi Tawya	-	-	-	6	6
14	Thi La War	-	1	-	4	5
	Total	1	5	-	181	187

Source: Survey Data

According to Table (18), there is no monk teacher except Bone Pyan monastic education school. The teachers in monastic education schools are volunteers. But the principal monk or nun is supporting them some money.

(b) Teachers' Supports

Government supports a teacher in accordance to a ratio of 40 students to one teacher. Monthly pay is Kyats 36,000 to a primary teacher and Kyats 41,000 for a post primary teacher and 46,000 for a high school teacher. But it is not for the teacher at all monastic education schools. So the principal monk and nun provided all the teachers' salaries given by the government in addition with their own money.

(c) Specification for Teacher's Qualification

Qualification of the teachers is one of the important factors in considering the quality of education provided. All school are defined that the teachers who must be graduate at least for their education. But some schools have volunteer teachers who passed 10th standard and university students. The teachers' qualification of all monastic education schools in Thanlyin Township is shown in Table (19).

Table (19) Teachers' Qualification of all Monastic Education Schools in Thanlyin Township

Sr	Name of Schools	Dhammasariya	High school pass	University student	Diploma	Graduate					Master	Total
						B.A	B.Sc	L.L.B	B.Econ	B.BSc		
1	Bone Pyan	1	-	2	-	6	7	2	-	-	-	18
2	Su Taung Pyae	-	-	9	-	19	10	-	-	3	-	41
3	Thatama Zaw Ti Karyone	-	-	-	-	13	8	1	-	-	-	22
4	Tharyar Kone	-	-	1	-	3	4	-	-	-	1	9
5	Da Mi Kar Yarma	-	1	1	-	4	2	-	1	-	-	9
6	Dama Depa	-	-	4	-	5	4	-	-	-	-	13
7	Su Htoo Pan	-	-	3	-	4	1	-	-	3	-	11
8	Khay Mar Yar Ma	-	1	-	-	15	8	-	-	-	-	24
9	Kay Thaya Wadi	-	1	1	-	6	2	-	1	1	-	12
10	Tha Main Dawdaya	-	-	1	-	3	4	-	-	-	-	8
11	Thar Tha Na Man Tie	-	1	1	-	2	-	-	-	-	-	4
12	Wana Warthi Aye Yaik San	-	-	1	-	2	1	-	-	1	-	5
13	Wi Ya Thi Tawya	-	-	-	1	5	-	-	-	-	-	6
14	Thi La War	-	1	1	-	1	2	-	-	-	-	5
		1	5	25	1	88	53	3	2	8	1	187

Source: Survey Data

(d) Capacity Building Programs for Teachers

Table (20) Capacity Building Programs for Teachers of all Monastic Education Schools in Thanlyin Township

Capacity Building Programs	CCA	Life skill	CPME	RWCT	KG	G1
No. of Schools	14	14	14	14	14	14
% of schools	100 %	100 %	100 %	100 %	100 %	100 %

Source: Survey Data

According to Table (20) all the teachers of monastic education schools had attended CCA, Life skill, CPME, RWCT, KG and G1 training courses.

(e) Opinion about Teachers' Performance

The principal monks and nuns of the monastic education schools seem to be satisfied with the overall performance of the teacher they employ. All of the teachers have volunteer spirit. They work harder and longer. The principal monks and nuns believed that without volunteer spirits, those teachers would not have to teach at their schools. At every monastic education school, relationship between the teachers and the principal monks and nuns are good. They work hard together for the good of the children. The principal monks closely supervise and provide guidance to the teachers. They requested the teachers to be patient and not to get angry with the children.

Teacher/ Student Ratio

Thar Tha Na Man Tie monastic education school is the best teacher-student ratio of 1:9 but this has a few students. The second best is Thatama Zaw Ti Karyone monastic education school has the ratio of 1:14. Wi Ya Thi Tawya school has the ratio of 1:65, that is not so good. These situations show that more teachers are needed in Wi Ya Thi Tawya. In defined Myanmar primary education level, lower in teacher to student ratio; 1:30 is the best but it is not a satisfactory situation over teacher to student ratio; 1:30. So, the ratio of the teacher to student in Thanlyin Township is good for it is 1:36. Table (21) shows teacher-student ratio in monastic education schools in Thanlyin Township.

Table (21) Teacher/ Student Ratio

Sr.	Name of Schools	No of Teachers	No of Students	T/S Ratio
1	Bone Pyan	18	688	1:38
2	Su Taung Pyae	41	1569	1:38
3	Thatama Zaw Ti Karyone	22	928	1:14
4	Tharyar Kone	9	312	1:35
5	Da Mi Kar Yarma	9	250	1:28
6	Dama Depa	13	418	1:32
7	Su Htoo Pan	11	367	1:33
8	Khay Mar Yar Ma	24	859	1:36
9	Kay Thaya Wadi	12	277	1:23
10	Tha Main Dawdaya	8	349	1:44
11	Thar Tha Na Man Tie	4	35	1:9
12	Wana Warthi Aye Yaik San	5	190	1:38
13	Wi Ya Thi Tawya	6	388	1:65
14	Thi La War	5	131	1:26
	Total	187	6761	1:36

Source: Survey Data

Financial Affairs of Monastic Education Schools

There are no school's charges for admission and tuition fees. All school's funding is depend upon the own money of principle monks and nuns that are donated for use in various factors (Nawakanma) by their donors.

Supports for Day Students and Resident Students

All the monastic education schools support school stationary-books, pens, pencil and rulers. The second supporting item is school uniforms. But it is the beginning of the school open.

Provision of Health Care to Monastic Education School Students

There is no school health program in two monastic education schools in Thanlyin Township. If the students from those two schools are not in good health condition, they used to go nearby clinic and hospital to care their health problems. There is a clinic with a doctor who cost free of charge regular come to provide health care services to the students in two schools. Most of the schools are bought medicine and kept in school to treat normal health problem of their own schools. In other ten schools, there is school health program one or two times in one year by government health department but it is not regularly.

Extra- Curriculum Programs for Students

Extra- curriculum programs for students in monastic and nunnery education schools are shows the following Table.

Table (22) Different Forms of Extra-Curriculum Programs

Program	Buddhism	Culture	Sports	Arts	Computer	Others
No. of Schools	14	14	7	4	3	2
% of schools	100%	100%	50%	29%	21%	14%

Source: Survey Data

As the Table (22), all monastic education schools have extra-curriculum programs. Buddhism and culture are teaches in all monastic education schools. 50% of the schools, seven monastic education schools have sports program for the students. There is a arts program in four of monastic education schools and there is a basic computer learning program in there of monastic education schools. There is a special program of Dhamma School for the students in every Sunday.

The Reasons for Operation of Monastic Education Schools

It is very interesting to study the reasons for operation monastic education schools. The reasons mentioned by the principal monks why they started to operate the monastic schools are as follows.

- To provide the basic literacy skills and improve the educational status of young children.
- To do charity work for education of the poor children in surrounding neighborhoods, their parents and guardians cannot afford to send them to public schools.
- To grant the request made by the community. The low income households near the monastery requested the monks to teach their children.
- To safeguard the nationality and Buddhist Sasana.

Advantage of Monastic Education Schools

The monk principals interviewed believed that monastic education schools have more advantages than disadvantages. The following are the advantages identified by the interviewees.

- The main advantage is that provision of education is free of charge in these schools. Furthermore, the schools provide other support such as stationery, school uniforms, meal, etc.
- The children in these schools have more chance to learn Buddhist literature and culture. As a result, these children are comparatively more cultured and obedient.
- Teaching at monastic education schools is not a well-paid job. But the teachers choose to work at these schools because of their volunteer spirit and goodwill. They put in a lot of effort in teaching the children. They are ready to teach extra hours to help with the children who cannot keep up with others in the class until they clearly understand the lessons. This is also an advantage.
- Small class size is one of the advantages. The principal monks and teachers know each and every child at their schools and can pay individual attention to them.
- The monk principals established good relationship with the teachers and closely supervise the teaching and learning process at their schools.
- The monk principals and the teachers also try their best to prevent dropping out of children from schools by consulting with the parents and helping hand to solve their social problems as much as they can.

- Knowledge and skills obtained from trainings like child-center approach (CCA) can be tried applying as the schools are operated on their own under the guidance of monk principals.

Disadvantages of Monastic Education Schools

The monastic education system was very efficient and cost-effective. Therefore, there were not many disadvantages in monastic education. Some disadvantages of monastic education schools are as follows.

- Insufficient funding to operate schools is the main disadvantage.
- Schools events such as contests and competition (dancing, drawing, essay writing, etc.), sports activities and fun fairs cannot be held on a large scale like public schools.
- Schools lack or do not have sufficient facilities such as library, multi-media classrooms with computers.

Conclusion

The Buddhist monastic education system in Myanmar is an old educational system with a very long history, dated back to 11th Century King Anawrahta period. Nowadays, there are (1531) monastic education schools in Myanmar. All monastic education schools can provide one way to promote the education in Myanmar. Yangon region is the region with second largest number of monastic education schools after Mandalay region. There are (228) monastic education schools in Yangon region. Yangon region has four districts. Among them, Yangon East District is the second largest number of monastic education schools with (68) schools. By studying, Thanlyin Township is the largest number of monastic education schools in Yangon East District with the fourteen schools. In Thanlyin Township, the four monastic education schools are in urban area and ten monastic education schools are in rural area. Mean that, monastic education schools are provided the development of education in Thanlyin Township in rural area more the urban area. The schools are found to be trying their best to provide quality services. The class is relatively small. Most of the teachers are graduates. Moreover, they receive trainings provided such as CCA and life skills. All of teachers come to teach at monastic education schools because they want to serve the poor children and to get “Kutho”. All the teachers have volunteer spirit and make great efforts in teaching their students. But teachers in monastic education schools have some problems. Such as, they do not receive salaries and pension like other teachers in public schools. In all monastic education schools, Buddhist literature and culture is taught to the children. It can be

suggest that the students of monastic education schools are clever and have the respect. In terms of infrastructure, almost all the monastic education schools cannot manage to provide proper shelter and classrooms for their resident and day students. All the monastic education schools are in need of more buildings which are in proper condition. It is, however, found out that all of them started operating the schools without having any proper buildings. When they could operate successfully, the donors who donated for building appeared soon, even from foreign countries. The main source of funding for these schools comes from the donation for different sector by their donors. This source of funding is small but sustainable and can be mobilized only by revered people, monks and nuns.

Recommendation

(1) To publicize for fund mobilization and make linkage between the schools, donors and community based and non-governmental organizations.

As the majority of monastic schools do not have sufficient fund, fund should be mobilized for them. There are many donors and volunteers who want to help the needy both in Myanmar and in foreign countries.

(2) To strengthen coordination between ministries

Close coordination and collaboration is necessary between four ministries- Ministry of Education, Ministry of Religious Affairs and Culture, Ministry of Health and Department of Social Welfare- to produce better outcome. By strengthening coordination between these ministries can be improved more effectively and efficiently. Monastic education schools should be integrated into public school programs and public health programs.

(3) To promote quality of services

To promote the quality of services, the monastic education schools need support for infrastructure development and teacher's salary and training.

(4) To build a communication network between all the monastic education schools and public schools

If there is good communication network, these schools can support to each other and share experience, good practices, success stories and lessons learned. Publishing newsletter and periodical might be an effective way as they can carry information far and wide.

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A study on mobile phone usage of the students in Cooperative College, Phaunggyi

U Thet Min Naung

Chapter 1

Introduction

This research reflects my personal undertaking to comprehend the impact of mobile phone of students in Cooperative College, Phaunggyi. Cooperative College, Phaunggyi is located near Mingohn Village, Hlegu Township, Yangon Region. The distance from Hlegu is about 20 miles. Communication is the invisible threat that connects human. Human feel connected troughed through technology only because is the main element of technology which speeds up, intensifies and widens communication. The fact that humans are connected in a virtual world through various devices is an invaluable contribution that technology has given to society. There are 489 students (2016-2017 Academic Year). This paper is collected to the 147 students (30% of students) in the Cooperative College, Phaunggyi. To make an analysis of mobile phone usage, data are collected from 147 students out of 489 in total by using systematic sampling. A sample obtained by randomly selecting one element from the first k elements in the frame and every k th element thereafter is called a one- in- k systematic sampling. The present study is an attempt to see patterns in the use of mobile phone among students in the Cooperative College, Phaunggyi (Myanmar). While only select parameter have been chosen for the purpose of the study. Impact includes consequences and concerns that arise from the literature and the current study.

1.1 Objective

The objectives of the study are

- To gain an overall understanding of students' mobile phone usage.
- To understand the influence of texting on students.
- To know the significance association between income and expenditure mobile phone bill (per month) of the student.

1.2 Methodology and Method

This paper provides a rationale for the methodology, research design and selection of method used in the research. The paper elaborates on the entire research design including sample, data collection and data analysis. Further to this, ethical concerns considered in the entire research process are outline.

“Research methodology is a way to systematically solve the research problem” (Kothari,2005). Research methodology has several dimensions that include designing the research process with suitable research methods. The researcher formulates a methodology for any study mainly to bring in some reasons in the context of research such as what research method to use in the study and why, what type of data collected and from whom and how the data to be collected is analyzed. The research also supports the applicability, reliability and validity of the research process where ever needed (Kothari, 2005).

This research was carried out methodically in the following phases;

Phases 1: Selecting the research topic (derived from the works of the researcher)

Phases 2: Designing the research (suitable to the research topic)

Phases 3: Selecting a method/testing its appropriateness (base on the research design)

Phases 4: Collecting data(suitable for the chosen research method)

Phases5: Analyzing and triangulating with discussion (interpreting the data in the context of published literature)

Phases6: Mapping the individual response of interviewed the student and the responses from survey of student (with the literature-based framework) and derives a wholesome understanding of the impact, consequences and concerns.

Phases7: Conclusion and recommendation (from the discussion that added to the existing knowledge base)

1.3 Scope and limitation of the study

In this paper, the target respondents have to be students in Cooperative College, Phaunggyi (2016-2017 academic year).The sample data was conducted in march 2017.The sample data obtained from 2017 were analyzed in this research paper.

1.4 Organizing the data

The quantitative data was organized using the software package. “Statistical Package for the Social Sciences (SPSS)” for window. The qualitative data obtained from the interview question was organized using spreadsheets and word documents.

Chapter 2

Literature Review

In this paper, existing literature that discusses the way mobile phones are being used and the impact their usage has had on students is presented. The literature review provides the basis for the current study to understand whether students are happy and unhappy or has a mixed opinion on the overall handling of mobile phones by the students.

2.1 Techniques for the data analysis

“Analysis is the interplay between research and data” (Strauss & Corbin, 1998). Since the study involved collecting data through two different methods, different analyzing techniques were adopted that were appropriate for the method.

2.1.1 Quantitative data

Descriptive and inferential analytical techniques were applied for the quantitative data. While descriptive analysis focused more on the understanding of terms without losing the sense of the information, inferential analysis provided assumption and trend of the population and through the sample. The statistical techniques are as follows:

Data is in the form of frequency account

Interest focuses on how many participants fall into different categories

Independence of observation

Observations are representative of the population of interest.

The overall sample size should be equal or greater than twenty. (Coakes, 2005 ; Peers, 1996)

2.1.2 Qualitative data

Thematic analysis suggested by Boyatzis (1998), is the encoding model that was used in this study to analyze the data from interview as well as the answers for the open-ended questions in the questionnaires. Thematic analysis is the process of encoding qualitative information that encompasses the way of seeing the data, making sense of meanings, analyzing the information, observing the pattern and linking the results to the quantitative data (Boyatzis, 1998).

2.2 Technical Background for the mobile phone

Mobile phones have an internal memory called Number Assignment Module (NAM). Each NAM has its own Mobile Identification Number (MIN) programmed into it, which is a wireless phone number. The phone also contains an Electronic Serial Number (ESN), which acts as recognition for the phone and helps as a security against cell phone fraud. A number identifying the cell phone with which it works is called the system ID (SID) (Gralla, 2002). Cellular networks are made up of many cellular base stations that communicate with the phones, which are located in that particular area. An area is referred to as a cell. When a cell phone is turned on, it reaches the nearest base stations and establishes a communication link and this process is called 'registration'. This communication takes place wirelessly with the base stations. Base stations are made up of hardware such as antennas, amplifiers, receivers, and transmitters and software for receiving and sending signals and for converting Radio Frequency waves into audio signals and vice versa (Gralla, 2002). Base stations uplink and transmit calls back and forth to the Mobile Switching Center (MSC). These uplinks and transmissions are often sent over a microwave. MSC functions as the brains of the cellular networks. Each MSC handles communications with a set of base stations and cells (Gralla, 2002).

The MSCs are also linked to several databases called Home Location Registers (HLR) that contain the information of each cell phone subscriber. The HLR has the capacity to track the geographical location of all the cell phones that are covered under the area of that particular MSC. There are also other important databases that play a very vital role like the authentication centers where the subscriber's call is validated (no pirated calls) and messaging centers that route the Short Message Service (SMS) to cell phones (Gralla, 2002). In fact, to send a text message, use of a wireless device is not mandatory. Use of e-mail to send messages in the form of number @company's designated site will serve the purpose. For such facility, a Text Messaging Interface (TMI) is necessary on a company's website (Steeh, Buskirk, & Callegaro, 2007).

2.3 Mobile Phones: Usage and Impact

"The new digital environment presented an exceptional array of possibilities for communication, interaction, and information retrieval at the fingertips that was never before available" (Montgomery, 2007, p.110). It is a general understanding that mobile phones have fastened the society in various aspects through its variety of functionalities. While cell phone expansion is at 'breath-taking speed' (Geser, 2004, p. 4) SMS through cell phones is pervading 'like a wild-fire' (Vaidyanathan & Lathu, 2007, p.4).

The literature reveals how much people depend on this practical device and how helpful a cell phone is in organizing things, right from waking one up (as an alarm clock) to wrapping up the day with reminders about things to do 'erasing the need for post slips, networking with friend and staying in touch with family.

Chapter 3

Findings and Descriptive Analysis for mobile phone usage

In this chapter, the 147 students (30% of students) from Cooperative College, Phaunggyi (2016-2017 academic year) are studied by gender, types of brand, prices of mobile phone, types of sim card, Prices of sim card, amount of prepaid bill card, used of mobile phone package and amount spent on mobile phone bill.

3.1 Gender of mobile phone usage

The number of 147 students from Cooperative College, Phaunggyi (2016-2017 academic year) are studied by gender.

Table (3.1) Gender of mobile phone usage

Particular	Frequency	Percent
Male	45	30.6
Female	102	69.4
Total	147	100

Source: Survey data (March, 2017)

Above table, out of the total 147 students, 69.4% were females and 30.6% were male. 100% of the students possessed own their mobile phone in the 2016-2017 academic year.

3.2 Types of Brand

In this study, 147 students from Cooperative College, Phaunggyi (2016-2017 academic year) are collected for the type of mobile phone brands.

Table (3.2) Types of mobile phone brand

Particular	Frequency	Percent
Mi	9	6.1
Honor	14	9.5
Huawei	35	23.8
Oppo	23	15.6
HTC	2	1.4
Samsung	29	19.7
Vivo	22	15.0

Sony	2	1.4
Other	11	7.5
Total	147	100

Source: Survey data (March, 2017)

According to the result, It was found that 23.8% of the students used Huawei brand, 19.7% of the students used Samsung brand, 15.6% of the students used Oppo brand, 15% of the students used Vivo brand, 9.5% of the students used Honor brand, 6.1% of the students used Mi brand, 1.4% of the students used HTC brand, 1.4% of the students used Sony brand and 7.5% of the students used other brands. The other brands are

3.3 Prices of mobile phone

The number of 147 students from Cooperative College, Phaunggyi (2016-2017 academic year) is analyzed by prices of mobile phone.

Table (3.3.1) Prices of mobile phone

Particular	Frequency	Percent	Cumulative Percent
Less than 50000	1	.7	.7
50000-99999	5	3.4	4.1
100000-149999	39	26.5	30.6
150000-199999	55	37.4	68.0
200000-249999	19	12.9	80.9
250000-299999	19	12.9	93.8
300000-349999	3	2.0	95.8
More than 349999	6	4.2	100
Total	147	100	

Source: Survey data (March, 2017)

Table (3.3.2) Statistics

	Price of mobile phone
Sample Size	147
Mean	183169.38
Median	160000
Mode	150000
Standard deviation	76360.24
Range	565000
Minimum	35000
Maximum	600000

As the results table (3.3.1), It was found that 37.4% of the students used price of brand between 150000 kyats and 199999 kyats, 26.5% of the students used price of brand between 100000 kyats and 149999 kyats, 12.9% of the students used price of brand between 200000 kyats and 249999 kyats, 12.9% of the students used price of brand between 250000 kyats and 299999 kyats, 4.1% of the students used price of brand more than 349999 kyats, 3.4% of the students used price of brand between 50000 kyats and 99999 kyats, 2% of the students used price of brand between 300000 kyats and 349999 kyats and 0.7% of the students used price of brand less than 50000 kyats. The results presented in the statistics table (3.3.2) show that the 147 students in the survey have a mean price mobile phone of 183169.38 kyats ,a median price mobile phone of 16000 kyats, a mode price mobile phone of 150000 kyats and standard deviation of 76360.24 kyats. And then, SPSS presented a minimum price mobile phone of 35000 kyats , maximum price mobile phone of 600000 kyats and range of 565000 kyats. The frequency distribution is skewed to the left (negative skewed).

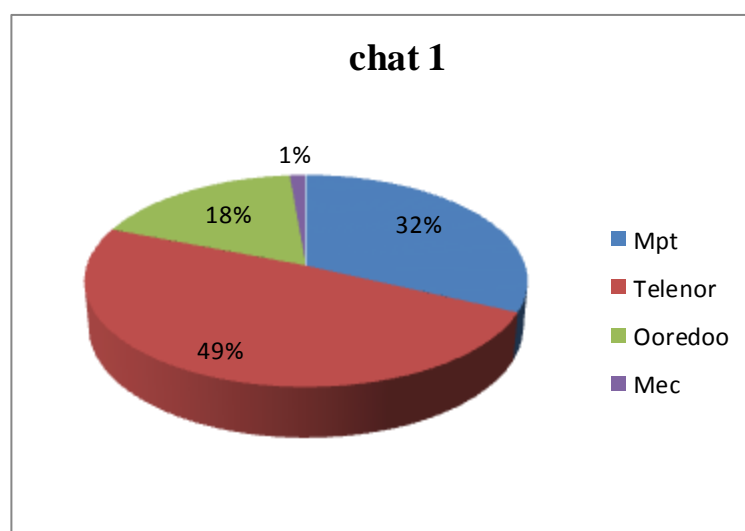
3.4 Types of Sim Card

In this survey,147 students from Cooperative College, Phaunggyi (2016-2017 academic year)are collected for types of phone sim card.

Table (3.4) Types of Sim Card

Particular	Frequency	Percent
Mpt	47	32.0
Telenor	72	49.0
Ooredoo	26	17.6
Mec	2	1.4
Total	147	100

Source: Survey data (March, 2017)



According to the table (3.4) and chart(1), It was found that 49% of the students applied Telenor sim card, 32% of the students applied Mpt sim card (Myanmar post telecom), 17.7% of the students applied Ooredoo sim card and 1.4% of the students applied Mec sim card.

3.5 Prices of Sim Card

In this survey data, 147 students from Cooperative College, Phaunggyi (2016-2017 academic year) are collected for the prices of phone sim card.

Table (3.5) Prices of Sim Card

Particular	Frequency	Percent
1500	134	91.1
200000	12	8.2
500000	-	-
1500000	1	0.7
Total	147	100

Source: Survey data (March, 2017)

As shown in the table above, It was found that 91.1% of the students spent on price of 1500 kyats, 8.2 % of the students on spent price of 200000 kyats, 7% of the students spent on price of 150000 kyats and 500000 kyats is not using.

3.6 Amount of prepaid bill card

The number of 147 students from Cooperative College, Phaunggyi (2016-2017 academic year) are collected for the amount prepaid bill card.

Table (3.6) Amount of prepaid bill card

Particular	Frequency	Percent
1000	72	49.0
3000	52	35.4
5000	17	11.5
10000	6	4.1
Total	147	100

Source: Survey data (March, 2017)

According to the findings, It was found that 49% of the students used an amount 1000kyats, 35.4% of the students used an amount 3000kyats, 11.6% of the students used an amount 5000kyats and 4.1% of the students used an amount 10000kyats.

3.7 Usage of the mobile phone package

In this survey data, 147 students from Cooperative College, Phaunggyi (2016-2017 academic year) is analyzed on the usage of mobile phone package.

Table (3.7) Usage of the mobile phone package

Particular	Frequency	Percent
Yes	110	73.9
No	37	26.1
Total	147	100

Source: Survey data (March, 2017)

As shown in the table above, it was found that 73.9% said that used of the mobile phone package and 26.1 % did not use of the mobile phone package .

3.8 Expenditure of the mobile phone bill (per month)

The number of 147 students from Cooperative College, Phaunggyi (2016-2017 academic year) is analyzed by the expenditure of mobile phone bill (per month).

Table (3.8.1) Expenditure of mobile phone bill (per month)

Particular	Frequency	Percent	Cumulative Percent
Less than 3000	6	4.1	4.1
3000-5999	27	18.4	22.5
6000-8999	4	2.7	25.2
9000-11999	51	34.7	59.9
12000-14999	5	3.4	63.3
15000-17999	18	12.2	75.5
18000-20999	28	19.0	94.6
More than 20999	8	5.4	100
Total	147	100	

Source: Survey data (March, 2017)

Table (3.8.2) Statistics

	Price of mobile phone
Sample Size	147
Mean	12244.90
Median	10000
Mode	10000
Standard deviation	6549.70
Range	27000
Minimum	3000
Maximum	30000

As shown in table, It was found that 34.7% of the students spent an amount between 9000kyats and 11999 kyats per month, 19% of the students spent an amount between 18000kyats and 20999 kyats per month, 18.4% of the students spent an amount between 3000kyats and 5999 kyats per month, 12.2% of the students spent an amount between 15000kyats and 17999 kyats per month, 5.4% of the students spent an amount more than 20999 kyats per month, 4.1% of the students spent an amount less than 3000kyats per month, 3.4% of the students spent an amount between 12000kyats and 14999 kyats per month and 2.7% of the students spent an amount between 6000kyats and 8999 kyats per month. The results presented in the statistics table (3.8.2) show that the 147 students in the survey have a mean amount mobile phone bill (per month) of 12244.90 kyats ,a median amount mobile phone bill (per month) of 10000 kyats, a mode amount mobile phone bill (per month) of 10000 kyats and standard deviation of 6549.70 kyats. And then, SPSS presented a minimum amount mobile phone bill (per month) of 3000 kyats , maximum amount mobile phone bill (per month) of 300000 kyats and range of 27000 kyats.

Chapter 4

Finding and Simple Regression and Correlation Analysis for mobile phone usage

This chapter discusses simple linear regression, in which a single numerical independent variable, X , is used to predict the numerical dependent variable Y , such as using income (per month) of the student to predict the expenditure mobile phone bill (per month) of the student.

4.1 Simple Linear Regression Model

The simple linear regression model is

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i$$

Where

β_0 = Y intercept for the population

β_1 = slope for the population

ε_i = random error in Y for observation i

Y_i = Dependent variable (sometimes referred to as the response variable) for observation i

X_i = Independent variable (sometimes referred to as the predictor, or explanatory variable) for observation i

4.2 Assumption

The four assumptions of regression are as follows:

- Linearity
- Independence of errors
- Normality of error

- Equal variance

The first assumption, linearity, states that the relationship between variables is linear.

The second assumption, independence of errors, requires that the errors(ε_i) are independent of one another. This assumption is particularly important when data are collected over a period of time. In such situations, the errors in a specific time period are sometimes correlated with those of the previous time period.

The third assumption, normality, requires that the errors(ε_i) are normally distributed at each value of X. Like the t test and the ANOVA F test, regression analysis is fairly robust against departures from the normality assumption. As long as the distribution of the errors at each level of X is not extremely different from a normal distribution, inferences about β_0 and β_1 are not seriously affected.

The fourth assumption, equal variance, or homoscedasticity, requires that the variance of the errors(ε_i) be constant for all values of X. In other words, the variability of Y values is the same when X is a low value as when X is a high value. The equal-variance assumption is important when making inferences about β_0 and β_1 . If there are serious departures from this assumption, you can use either data transformations or weighted least-squares methods.

4.3 Simple Linear Regression Equation (By using least square method): The Prediction line

The predicted value of Y equals the Y intercept plus the slope multiplied by the value of X.

$$\hat{Y}_i = b_0 + b_1 X_i$$

Where

\hat{Y}_i = Predicted value of Y for observation i

X_i = Value of X for observation i

b_0 = Sample Y intercept

b_1 = Sample slope

Table (4.3) Coefficients

Model	Understandardized Coefficients	standardized Coefficients	t	Sig	Collinearity Statistics
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	B	Std Error	Beta			Tolerance	VIF
Constant	4917.636	1554.250		3.164	.002		
Income(per month)	.069	.014	.382	4.980	.000	1	1

- a. Predictors: (Constant), income (per month)
b. Dependent Variable: Expenditure mobile phone bill (per month)

The results presented in the table (4.3) show that there is a significance between income and expenditure mobile phone bill per month at the level 0.01(p=0.000). The Y intercept 4917.636 kyat indicates that when the student does not use for expenditure mobile phone bill (per month), the predicted expenditure mobile phone bill (per month) is 4917.636 kyats. The slope indicates that for each increase of one kyat in the income (per month), the predicted change in the expenditure mobile phone bill (per month) is +0.069. In other words, the expenditure mobile phone bill (per month) is predicted to increase by a mean of .069 kyat for each one kyat increase in the expenditure mobile phone bill (per month).

4.4 Correlation Analysis

Correlation analysis is used to measure the strength of the relationship (correlation) between two set of variables. One measure of this relationship is the correlation coefficient which measure the extend to which two variable are linearly related.

$$r = \frac{n \sum_{i=1}^n x_i y_i - \sum_{i=1}^n x_i \sum_{i=1}^n y_i}{\sqrt{\left[n \sum_{i=1}^n x_i^2 - \left(\sum_{i=1}^n x_i \right)^2 \right] \left[n \sum_{i=1}^n y_i^2 - \left(\sum_{i=1}^n y_i \right)^2 \right]}}$$

Table (4.4) Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.382	.146	.140	6073.30	1.831

- a. Predictors: (Constant), income (per month)
b. Dependent Variable: Expenditure mobile phone bill (per month)

The results presented in the table (4.4) show that there is a fairly positive linear relationship between income and expenditure mobile phone bill (per month) of the students.

Chapter 5

Conclusion

This research paper summarizes the overall perceptions of the students' mobile phone usage particularly focusing on the impacts. Alongside, the concluding thoughts of the researcher are also highlighted. This study focused on understanding the impact of mobile phones from students. A mixed methods approach was employed to explore the research question. Quantitative data was collected through questionnaires, and qualitative data through interviews. The survey and interview participants were students in co-operative college phaunggyi, irrespective of whether they possessed a mobile phone.

According to the results, it is found that 69.4% were female of mobile phone usage. Regarding the brand of mobile phone, 23.8% of the students used Huawei brand. As the results, 37.4% of the students used price of brand between 150000 kyats and 199999 kyats. And then 49% of the students applied Telenor sim card. When studying the price of mobile phone sim card, 91.1% of the students used 1500 kyats, As regards the price of pre-paid phone bill card, 49% of the students used 1000kyats .In addition the results,34.7% of the students spent mobile phone usage between 9000kyats and 11999 kyats per month and 73.9% said that used of the mobile phone package. According to the findings, the most used of mobile phone were females, Huawei brand , the price of mobile phone is between 150000 kyats and 199999 kyats, Telenor sim card and mobile phone usage between 9000kyats and 11999 kyats per month. The findings from this study revealed that students mobile phone use are satisfactory. In the advantage of mobile phone usage, the students will be the informations, knowledges and technology. In the advantage of mobile phone usage, the students will be disturbed of nerve system. Statistical analysis found a significance association at the 0.01 level ($p=0.000$) between income and expenditure mobile phone bill (per month) of the student. The estimated simple linear regression equation is $\hat{Y}_i = 4917.636 + 0.069X_i$. There is a fairly positive linear relationship between income and expenditure mobile phone bill (per month) of the students.

This study reveals that students using mobile phones for co-coordinating their social life and subsequent distractions have become appropriate to some extent appropriate in some cultures and in appropriate in some. Mobile phone markers and service providers researching on the social context of the students mobile phone usage and then promoting products or services suitable to the research findings. Communication taking a lead role in bringing to the knowledge of the general public about the negative consequences of mobile phone usage and tips to tackle such consequences.

ON USE OF DUMMY VARIABLES IN REGRESSION ANALYSIS

EI THANDA

ABSTRACT

This purpose of this paper is to present the role of qualitative explanatory variables in regression analysis. The nature of dummy variables is described in Chapter II .Among its various applications, some are considered in Chapter III. These include (1) comparing two (or more) regression, (2) deseasonalizing time series data and (3) piecewise linear regression models. It will be show that introduction of qualitative variables, often called dummy variables, makes the linear regression model an extremely flexible tool is capable of handling many interesting problems encountered in empirical studies.

Chapter - 1

Introduction

In a research work it may be found that may variables are useful in explaining the value of the dependent variable. For example, years of education, training, and experience are instrumental in determining the level of a person's income. These variables can be easily measured numerically, and readily lend themselves to statistical analysis.

However, such is not the case with many other variables that are also useful in explaining income levels. Studies have shown that gender and geography also carry considerable explanatory power. A woman with the same number of years of education and training as man will not have the same income. A worker in the Northeast may not earn the same as worker in the south doing a similar job. Gender and geography can prove to be highly useful explanatory variables in the effort to predict one's income. But, neither variables can readily be expressed numerically, and cannot be directly included in a regression model. These non numeric variables must be modified into the numeric form and can be included in the model and there by gain the additional explanatory power they offer.

Variables that are not expressed in a direct, quantitative fashion are called qualitative fashion are called qualitative variable or dummy variables.

According to Allen L. Webster, dummy variable is a variable that accounts for the qualitative nature of a variable and incorporate its explanatory power into the model is known as a dummy variable.

According to James L. Kendel, dummy variables are specially constructed variables that indicate the presence or absence of some characteristic. They assume a value of 1 or 0 depending upon whether a certain characteristics are present.

Since such qualitative variable usually indicate the presence or absence of a "quality" or an attribute, such as male or female, black or white or catholic or non-catholic one method of "quantifying" such attributes is by constructing artificial variables that take on values of 1 or 0, 0 indicating the absence of an attribute and 1 indicating the presence (or possession) of that attribute.

Variables that assume such 0 and 1 values are called dummy variables. Alternative names are indicator variables, binary variables, categorical variables, qualitative variable and dichotomous variables.

If a dummy variable has more than two possible responses, it cannot be encoded as 1,2,3 and so on. A variable with possible responses will be expended to encompass a total of $r-1$ variables.

Objective of Studies

The purpose of the study, as set out in terms of reference, is

- (1) To present the role of qualitative explanatory variables in regression analysis.
- (2) Qualitative variables, often called dummy variables.
- (3) Comparing two (or more) regression / deseasonalizing time series data and piecewise linear regression models.

Chapter - II

The Nature of Dummy Variables

In this chapter the nature of dummy variables is discussed. In the regression analysis the dependent variable is frequently influenced not only by variable that can be readily quantified on some well-defined scale but also by variables that are essentially qualitative in nature. (for example sex, color, religion, nationality, wars, earthquakes, strikes, political upheavals, and changes in government economic policy.)

Since such qualitative variables usually indicate the presence or absence of a "quality" or a attribute, such as a male or female, black or white, or Catholic or non-Catholic, one method of "quantifying" such attributes is by constructing artificial variables that takes on values of 1 or 0, 0 indicating the absence of an attribute and 1 indicating the presence (or possession) of that attribute. Variables that assume such 0 and 1 values are called dummy variables. Alternative names are indicator variables, binary variables, categorical variable qualitative variables and dichotomous variables.

2.1 Regression on One Qualitative variable with two classes

Dummy Variables can be used in regression models just as easily as quantitative variables. As a matter of fact, a regression model may contain explanatory variables that are exclusively dummy, or qualitative, in nature. Such models are called analysis - of - variance (ANOVA) models. As a example, consider the following model:

$$Y_i = \alpha + \beta D_i + U_i \quad (2.1)$$

where Y = annual salary of a college professor

$D_i = 1$ if male college professor

$= 0$ otherwise

The above equation (2.1) is like the two-variable regression models encountered previously except that instead of quantitative X variable a dummy variable D is included.

Model (2.1) may enable to find out whether sex makes any difference in a college professor's salary, assuming of course, that all other variables such as age, degree attained, and years of experience are held constant.

The regression equation of the annual salary for female college professor ($D_i = 0$) is

$$Y_i = \alpha + U_i$$

The regression equation of the annual salary for male college professor ($D_i = 1$) is

$$Y_i = \alpha + \beta + U_i$$

Assuming that the disturbances satisfy the usual assumptions of the classical linear regression model, the mean salary for male and female are obtained from Eq.(2.1) as

Means Salary of female college professor: $E(Y_i / D_i = 0) = \alpha$

Means Salary of male college professor: $E(Y_i / D_i = 1) = \alpha + \beta$

that is, the intercept term α gives the mean salary of a female college professor differs from the mean salary of this female counterpart, $\alpha + \beta$ reflecting the mean salary of the male college professor.

2.2 Regression on one Quantitative Variable and one Qualitative Variable with two Classes, or Categories

ANOVA models Eq.(2.1), although common in fields such as sociology, psychology, education, and market research, are not that common in economics. Typically, in most economic research as regression model contains some explanatory variables that are quantitative and some that are qualitative. Regression models containing on admixture of

quantitative and qualitative variables are called analysis of covariance (ANCOVA) models. In this section these such models would be discussed with an example.

For an example of the ANCOVA model, model (2.1) can be modified as follows.

$$Y_i = \alpha_1 + \alpha_2 D_i + \beta X_i + U_i \quad (2.2)$$

Where Y_i = annual salary of a college professor

X_i = years of teaching experience

$D_i = 1$ if male

= 0 otherwise

Model (2.2) contains one quantitative variable (years of teaching experience) and one qualitative variable (sex) that has two classes (or levels, classifications, or categories), namely, male and female. Assuming, as usual that $E(U_i) = 0$, it can be seen that

Mean salary of a female college professor:

$$E(Y_i / X_i, D_i = 0) = \alpha_1 + \beta X_i$$

Mean salary of a male college professor:

$$E(Y_i / X_i, D_i = 1) = (\alpha_1 + \alpha_2) + \beta X_i$$

In words, model (2.2) postulates that the male and female college professor's salary functions in relation to the years of teaching experience have the same slope (β) but different intercepts. In other words, it is assumed that the level of the male professor's mean salary is different from that of the female professor's mean salary (by α_2) but the rate of change in the mean annual salary by years of experience is the same for both sexes.

In this section, the following features of the dummy variable regression model is noted.

(1) To distinguish the two categories and female, only one dummy variable is needed to introduce, say D_i . For $D_i = 1$ always denotes a male, when $D_i = 0$ we know that it is a female since there are only two possible outcomes. Hence, one dummy variable suffices to distinguish two categories. The general rule is that of a qualitative variable has r categories, introduced only $r-1$ dummy variable.

(2) The assignment of 1 and 0 values to two categories, such as male and female, is arbitrary in the sense that in our example we could assign $D = 1$ for female and $D = 0$ for male. In this situation, the two regressions obtained from (2.2) will be

$$\text{Female professor: } E(Y_i / X_i, D_i = 1) = (\alpha_1 + \alpha_2) + \beta X_i$$

$$\text{Male professor: } E(Y_i / X_i, D_i = 0) = \alpha_1 + \beta X_i$$

(3) The group, category, or classification that is assigned the value of 0 is often referred to as the base, benchmark, control, comparison, reference, or omitted category. It is base in sense that comparisons are made with that category.

(4) The coefficient α_2 attached to the dummy variable D can be called the differential intercept coefficient because it tells by how much the value of the intercept term of the category that receives the value of 1 differs from the intercept coefficient of the base category.

2.3 Regression on one Quantitative Variable and one Qualitative Variable with More than two Classes

In this sub-section, the regression analysis of the dependent variable on one quantitative variable and one qualitative variable with more than two classes is discussed with an assumed example. Suppose that, on the basis of the cross-sectional data, the annual expenditure on health care by an individual is regressed on the income and education of the individual. Since the variable education is qualitative in nature, suppose the level of education can be considered three mutually exclusive levels: less than high school, high school and college. Now, unlike the previous case, we have more than two categories of the qualitative variable education. So, following the rule that the number of dummies be one less than the number of categories of the variable. Two dummies should be introduced to care of the three levels of education. Assuming that the three educational groups have a common slope but different intercepts in the regression of annual expenditure on health care on annual income, the following model can be used.

$$Y_i = \alpha_1 + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \beta X_i + U_i \quad (2.3)$$

Where Y_i = annual expenditure on health care

X_i = annual income

$D_2 = 1$ if high school education

$= 0$; otherwise

$D_3 = 1$ if college education

$= 0$ otherwise

In the above model, it is noted that "less than high school education" category as the base category. Assuming $E(U_i) = 0$ the following equations are obtained

$$E(Y_i / D_2 = 0, D_3 = 0, X_i) = \alpha_1 + \beta X_i$$

$$E(Y_i / D_2 = 1, D_3 = 0, X_i) = (\alpha_1 + \alpha_2) + \beta X_i$$

$$E(Y_i / D_2 = 0, D_3 = 1, X_i) = (\alpha_1 + \alpha_2) + \beta X_i$$

which are, respectively, the mean health care expenditure functions for the three levels of education, namely, less than high school, high school, and college.

The interpretation of regression (2.3) would change if we were to adopt a different scheme of assigning the dummy variables. If $D_2 = 1$ to "less high school education" category and $D_3 = 1$ to "high school education category" the reference category will then be "college education" and all comparisons will be in relation to this category.

2.4 Regression on one Quantitative Variable and two Qualitative Variables

In this sub-section, the regression analysis of the dependent variable on one quantitative variable and two qualitative variables is explained with an assumed example. The technique of dummy variable can be easily extended to handle more than one qualitative variable. In the college professor's salary regression (2.2), it is assumed that in addition to years of teaching experience and sex, the skin color of the teacher is also an important determinant of salary. For simplicity, assume that color has two categories black and white, model (2.2) can be written as

$$Y_i = \alpha_1 + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \beta X_i + U_i \quad (2.3)$$

Where

Y_i = annual salary

X_i = years of teaching experience

$D_2 = 1$ if male

= 0 otherwise

$D_3 = 1$ If white

= 0 otherwise

Notice that each of two qualitative variables, sex and color, has two categories and hence needs one dummy variable for each. Note also that the omitted or base, category now is "black female professor".

Assuming $E(U_i) = 0$, the following regression can be obtained from model (2.3).

Mean salary or black female professor:

$$E(Y_i / D_2 = 0, D_3 = 0, X_i) = \alpha_1 + \beta X_i$$

Mean salary for black male professor:

$$E(Y_i / D_2 = 1, D_3 = 0, X_i) = (\alpha_1 + \alpha_2) + \beta X_i$$

Mean salary for white female professor:

$$E(Y_i / D_2 = 0, D_3 = 1, X_i) = (\alpha_1 + \alpha_2) + \beta X_i$$

Mean salary for white male professor:

$$E(Y_i / D_2 = 1, D_3 = 1, X_i) = (\alpha_1 + \alpha_2 + \alpha_3) + \beta X_i$$

Ocean again, it is assumed that the preceding regressions differ only in the intercept coefficient but not in the slope coefficient β .

An OLS estimation of (2.3) will enable to test a variety of hypothesis. Thus, if α_3 is statistically significant, it will mean that color does affect a professor's salary. Similarly, if α_2 is statistically significant, it will mean that sex also affects a professor's salary. If both these differential intercepts are statistically significant it would mean sex as well as color is an important determinant of professor's salaries.

It is found that from the preceding discussion, a model can be extended to include more than one quantitative variable and more than two qualitative variables. The only precaution to be taken is that the number of dummies for each qualitative variable should be one less than the number of categories of that variable.

Chapter (III)

Some Uses of Dummy Variables

In this section some use of dummy variables in regression analysis are discussed. Dummy variables may be used to represent and compare factors such as the following:

1. **Temporal effect:** Examples include wartime versus peacetime, Christmas season non-Christmas season, summer versus nonsummer, strike period nonstrike period, and different quarters of the year.
2. **Spatial effects:** Examples include north versus south, urban versus rural, City A versus City B, developed versus underdeveloped countries and farm versus nonfarm communities.
3. **Qualitative variables:** Examples include male versus female, college graduate versus non-college graduate, skilled versus unskilled employee, married versus single, renter versus home-owner, employed versus unemployed, and white versus nonwhite.
4. **Broad groupings of quantitative variables:** Examples include income over 550,000 versus income under 550,000 age over 25 versus age under 25, 3 or more children versus fewer than 3 children, and sales less than \$1 million per year versus sales greater than \$1 million per year.

3.1 The Use of Dummy Variables in Seasonal Analysis

Many economic time series based on monthly or quarterly data exhibit seasonal patterns (regular oscillatory movement). Examples are sales of department stores at Christmas time, demand for money (cash balances) by households at holiday times, demand for ice cream and soft drinks during the summer, and prices of crops right after the harvesting season. Often it is desirable to remove the seasonal factor, or component, from a time series so that one may concentrate on the other component, such as the trend.

The process of removing the seasonal component from a time series is known as deseasonalization, or seasonal adjustment, and the time series thus obtained is called the deseasonalized, or seasonally adjusted, time series. Important economic time series, such as the consumer price index, the wholesale price index, the index of industrial production, are usually published in the seasonably adjusted form.

There are several methods of deseasonalizing a time series, but one of these methods, namely, the method of dummy variable is considered in this chapter. To illustrate how to dummy variables can be used to deseasonalize economic time series.

The following model is considered,

$$Y_i = \alpha_1 + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \alpha_4 D_{4i} + \beta (\text{sales})_t + U_i \quad (3.1)$$

Where Y_i = profit

$D_2 = 1$ for second quarter

$= 0$ otherwise

$D_3 = 1$ for third quarter

$= 0$ otherwise

$D_4 = 1$ for fourth quarter

$= 0$ otherwise

Note that it is assumed that the variable "season" has four classes, the four quarters of a year, thereby requiring the use of three dummy variables. Thus, if there is a seasonal pattern present in various quarters, the estimated differential intercepts α_2 , α_3 and α_4 , if statistically significant, will reflect it. It is possible that only some of these differential intercepts are statistically significant so that only some quarters may reflect it. In this case the first quarter of the year is treated as the base year.

3.2 The Use of Dummy Variables in Piecewise Linear Regression

Most of the econometric models studied have been continuous, with small change in one variable having a measurable effect on another variable. This framework as modified when the dummy variables are used to account for shifts in either slope or intercept or both. It is therefore reasonable to extend the analysis one further step: to allow for changes in slope, with the restriction that the line being estimated be continuous. A simple example is drawn in following Fig. 3.1

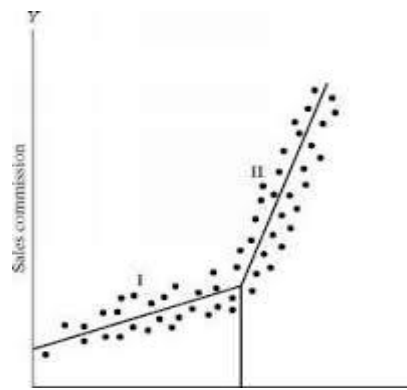


Figure 3.1 Piecewise-linear-regression model.

The true model is continuous, with a structural break. This piecewise linear model consists of two straight-line segments.

Piecewise linear models are special cases of a much larger set of models or relationships, called spline functions. Spline functions are functions and not necessarily a straight line. In a typical case, the spline is chosen to be a polynomial of the third degree and the procedure guarantees that the first and second derivatives will be continuous.

To estimate the model given in Fig. (3.1), consider the expression

$$C_t = \beta_1 + \beta_2 Y_t + \beta_3 (Y_t - Y_{t_0}) D_t + \varepsilon_t \quad (3-2)$$

Where C_t = consumption

Y_t = income

Y_{t_0} = income in year in which structural break occurs and

$D_t = \begin{cases} 1 & \text{If } t > t_0 \\ 0 & \text{otherwise} \end{cases}$

For years before and including the break $D_t = 0$, so that

$$E(C_t) = \beta_1 + \beta_2 Y_t$$

However, after the break, $D_t = 1$, so that

$$E(C_t) = \beta_1 + \beta_2 Y_t + \beta_3 Y_t - \beta_3 Y_{t_0}$$

or
$$E(C_t) = (\beta_1 - \beta_3 Y_{t_0}) + (\beta_2 + \beta_3) Y_t$$

Before the break, the line has slope β_2 , but the slope changes to $\beta_2 + \beta_3$ afterward (and the intercept changes as well). Note however, that there is no discontinuity since

$$E(C_t) = \beta_1 + \beta_2 Y_{t_0}$$

Note also that when $\beta_3 = 0$, the consumption equation reduces to a single straight-line segment, so that a t test of $\beta_3 = 0$ provides a simple test for structural change.

If there were two structural breaks, occurring at times t_0 and t_1 , the appropriate model would then be

$$C_t = \beta_1 + \beta_2 Y_t + \beta_2 (Y_t - Y_{t_0}) D + \beta_3 (Y_t - Y_{t_1}) D' + \varepsilon_t$$

where Y_{t_1} represents the income at which a second structural break occurs, and

$$D' = \begin{cases} 1 & \text{if } t > t_1 \\ 0 & \text{otherwise} \end{cases}$$

The equations of each of the three line segments are then

$$E(C_t) = \begin{cases} \beta_1 + \beta_2 Y_t & 0 < t \leq t_0 \\ (\beta_1 - \beta_3 Y_{t_0}) + (\beta_2 + \beta_3) Y_t & t_0 \leq t \leq t_1 \\ (\beta_1 - \beta_3 Y_{t_0} - \beta_4 Y_{t_1}) + (\beta_2 + \beta_3 + \beta_4) Y_t & t > t_1 \end{cases}$$

Chapter IV

Conclusion

In regression analysis the dependent variable is frequently influenced not only by variables that can be reading quantified on some well-defined scale, but also by variables that are essentially quantitative in nature. Since such qualitative variables usually indicates the presence or absence of a quality or an attribute, one method of quantifying such attributes is by constructing artificial variables that take on values of 1 or 0, 0 indicating the absence of an attribute and 1 indicating the presence of that attribute variables that assume such 0 and 1

value are called dummy variables. Alternative names are indicator variables, binary variables, categorical variables, qualitative variable and dichotomous variables.

Dummy variables can be used in regression models just as quantitative variables. As a matter of fact, a regression model may contain explanatory variables that are exclusively dummy, or qualitative, in nature. Such models are called analysis of variance (ANOVA) models.

In most economic research a regression model contain some explanatory variables that are quantitative and some that are qualitative. Regression models containing an admixture of quantitative and qualitative variables are called analysis-of-covariance (ANCOVA) models.

In this dissertation, how to incorporate dummy variables into the multiple regression model and how to interpret the estimated coefficient of the dummy variables are explained. The findings of this study are concluded as follows.

1. Dummy variables taking values of 1 and 0 (or their linear transforms) are a means of introducing qualitative regressors in regression analysis.
2. If dummy variables have more than two possible responses, one cannot encode it as 0, 1, 2, 3 and so on. A variable with r possible responses will be expanded to encompass a total of $r-1$ variables.
3. Dummy variables are a data-classifying device in that they divide a sample into various subgroups based on qualities or attributes (sex, marital status, race, religion, etc) and implicitly allow one to run individual regressions for each subgroup. If there are differences in the response of the regressand to the variation in the quantitative variables in the various subgroups, they will be reflected in the differences in the intercepts or slope coefficients, or both, of the various subgroup regressions.
4. Although a versatile tool, the dummy variable technique needs to be handled carefully. First, if the regression contains a constant term, the number of dummy variables must be less than the number of classifications of each qualitative variable. Second, the coefficient attached to the dummy variables must always be interpreted in relation to the base, or reference, group, that is the group that gets the value of zero. Finally if a model has several qualitative variables with several classes, introduction of dummy variables can consume a large number of degrees of freedom. Therefore, one should always weight the number of dummy variables to be introduced against the total number of observations available for analysis.

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APPLICATION OF BUSINESS MATHEMATICS

IN REAL – LIFE

Aye Myint Oo

ABSTRACT

Aye Myint Oo¹

Applied mathematics in this paper is direct application to commerce and real – life problems. Business mathematics includes mathematics course taken at an undergraduate level by business students. Examples of business mathematics in this paper are matrix algebra, exponential function and natural logarithm function. This paper emphasizes on the formulas derivation for financial mathematics and continuous growth.

Key Words : Matrix Algebra, Exponential Function and Natural Logarithm.

1.Introductio

Mathematics is an important subject and knowledge of it enhances a person's reasoning, problem – solving skills, and in general, the ability to think. This paper introduces undergraduate level mathematics which is related and useful to solve business problems and other real – life problems. This paper wants to know using exponential function and natural logarithm function solved for real – life problems.

1.1Aim and Objectives

The aim of the study is all of the teachers in our university to know business mathematics which has been taught to our students. This foundation course is useful to real – life.

The objectives of the research are

- (1) Formulate multi-variable economic models in matrix format
- (2) Compute simple interest and compound interest
- (3) Use compound interest formula to derive the irrational number e .
- (4) Use the exponential function and natural logarithm to derive the final sum and the length of time when continuous growth takes place.

1.2 Scope of the study

This paper emphasizes only on the undergraduate level mathematics for second year students at Co-operative University, Thanlyin . It concerns with second year business mathematics.

2. Applied Matrix Algebra for Business Problems

2.1 Definition

Matrix is set of numbers which is bounded by two brackets. Vertical lines are called columns and horizontal lines are called rows. Matrix is always in $m \times n$ order. Here m is number of rows and n is numbers of columns. Each entry is usually known as element.

Example (1)

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}_{3 \times 3}, \quad B = \begin{bmatrix} 2 & 3 & 5 \\ 6 & 7 & 8 \end{bmatrix}_{2 \times 3}$$

$$C = [2 \ 3 \ 6 \ 7 \ 8]_{1 \times 5},$$

$$D = \begin{bmatrix} 2 \\ 3 \\ 6 \\ 7 \end{bmatrix}_{4 \times 1}$$

2.2 Matrix addition and subtraction

Matrices that have the same order can be added together, or subtracted. The addition, or subtraction, is performed on each of the corresponding elements.

Example (2)

$$\text{If } A = \begin{bmatrix} 2 & 3 \\ 4 & 7 \end{bmatrix} \text{ and } B = \begin{bmatrix} 5 & 1 \\ 3 & 8 \end{bmatrix}, \text{ find (i) } A + B, \text{ (ii) } A - B$$

Solution

$$\begin{aligned} \text{(i)} \quad A + B &= \begin{bmatrix} 2 & 3 \\ 4 & 7 \end{bmatrix} + \begin{bmatrix} 5 & 1 \\ 3 & 8 \end{bmatrix} \\ &= \begin{bmatrix} 7 & 4 \\ 7 & 15 \end{bmatrix} \end{aligned}$$

$$\begin{aligned} \text{(i)} \quad A - B &= \begin{bmatrix} 2 & 3 \\ 4 & 7 \end{bmatrix} - \begin{bmatrix} 5 & 1 \\ 3 & 8 \end{bmatrix} \\ &= \begin{bmatrix} -3 & 2 \\ 1 & -1 \end{bmatrix} \end{aligned}$$

Example (2)

Matrix A	
2	3
4	7

Matrix B	
5	1
3	8

Matrix A+B	
7	4
7	15

Matrix A-B	
-3	2
1	-1

2.3 Basics Principles of Matrix Multiplication

If one matrix is multiplied by another matrix , the basic rule is to multiply elements along the rows of the first matrix by the corresponding elements down the columns of the second matrix. The basic principle of matrix multiplication involves the elements across a row multiplying the elements down the columns of the matrix being multiplied , and then summing all the products obtained.

2.4 Matrix Multiplication

Let $A = [a_{ij}]$, $i = 1, 2, \dots, m$

$j = 1, 2, \dots, n$

$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} & \dots & a_{1n} \\ a_{21} & a_{22} & a_{23} & \dots & a_{2n} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & a_{m3} & \dots & a_{mn} \end{bmatrix}_{m \times n}$$

Let $B = [b_{jk}]$, $j = 1, 2, 3, \dots, n$,

$k = 1, 2, 3, \dots, p$,

$$B = \begin{bmatrix} b_{11} & b_{12} & b_{13} & \dots & b_{1p} \\ b_{21} & b_{22} & b_{23} & \dots & b_{2p} \\ \vdots & \vdots & \vdots & & \vdots \\ b_{n1} & b_{n2} & b_{n3} & \dots & b_{np} \end{bmatrix}_{n \times p}$$

The product matrix AB will have m rows and p columns, i . e, if A is m x n matrix and B is n x p matrix then AB is an m x p matrix.

In the product AB, A is known as pre – factor and B as post – factor. Thus we notice that the product AB is defined if and only if the number of columns of the pre – factor is equal to the number of rows of the post – factor. Two matrices A and B are said to be conformable for multiplication if the number of columns of A is equal to the number of rows of B .

Example (3)

$$(i) \quad \text{If } A = \begin{bmatrix} 3 & 4 & 7 \\ 4 & 6 & 9 \end{bmatrix} \text{ and } B = \begin{bmatrix} 3 & 6 \\ 4 & 7 \\ 5 & 8 \\ 9 & 10 \end{bmatrix}, \text{ then what is AB ?}$$

$$A = \begin{bmatrix} 3 & 4 & 7 \\ 4 & 6 & 9 \end{bmatrix}_{2 \times 3}, \quad B = \begin{bmatrix} 3 & 6 \\ 4 & 7 \\ 5 & 8 \\ 9 & 10 \end{bmatrix}_{4 \times 2}$$

The product AB is not impossible because the number of columns of A is not equal to the number of rows of B

$$(ii) \quad \text{If } A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 2 & 1 \\ 1 & 2 & 4 \end{bmatrix} \text{ and } B = \begin{bmatrix} 1 & 0 \\ 0 & 1 \\ 2 & 1 \end{bmatrix}, \text{ find AB}$$

Solution.

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 2 & 1 \\ 1 & 2 & 4 \end{bmatrix}_{3 \times 3}, \quad B = \begin{bmatrix} 1 & 0 \\ 0 & 1 \\ 2 & 1 \end{bmatrix}_{3 \times 2}$$

Here A is a 3 x 3 matrix , B is a 3 x 2 matrix , therefore, the matrix A B is defined as the number of columns of A is 3 and number of row of B is also 3 . Obviously , A B is of order 3 x 2 .

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 2 & 1 \\ 1 & 2 & 4 \end{bmatrix} \quad B = \begin{bmatrix} 1 & 0 \\ 0 & 1 \\ 2 & 1 \end{bmatrix}$$

$$= \begin{bmatrix} 1+0+6 & 0+2+3 \\ 0+0+2 & 0+2+1 \\ 1+0+8 & 0+2+4 \end{bmatrix}$$

$$= \begin{bmatrix} 7 & 5 \\ 2 & 3 \\ 9 & 6 \end{bmatrix}_{3 \times 2}$$

Example (3)

Matrix A	
3	4
4	6

Matrix B	
3	6
4	7
9	10

The Product AB is not impossible.

Matrix A	
1	2
0	2
1	2

Matrix B	
1	0
0	1
2	1

Matrix AB	
7	5
2	3
9	6

Example (4)

There are 3 Co-operative Colleges and 2 Co-operative Universities in our Ministry. Each college and university has 11 peons, 20 clerks and 1 cashier. Each university, in addition, has 1 section officer and 1 librarian. Their salary are :

Peons – Ks 120000, Clerk – Ks 160000, Cashier – Ks 250000, Section officer – Ks 310000 and Librarian – Ks 280000.

Using matrix notation, find

- Total number of posts of each kind in colleges and universities taken together.

- (ii) The total monthly salary bill of all the colleges and Universities taken together.

Solution

$$\text{Let } A = \begin{bmatrix} 11 & 11 \\ 20 & 20 \\ 1 & 1 \\ 0 & 1 \\ 0 & 1 \end{bmatrix}$$

$$\text{Let } B = \begin{bmatrix} 3 \\ 2 \end{bmatrix}$$

$$\text{Let } C = [120000 \quad 160000 \quad 250000 \quad 310000 \quad 280000]$$

Where

The matrix A represents the number of posts of each kind in colleges and universities.

The matrix B represents the number of Co – operative Colleges and Co-operative Universities in our Ministry.

The matrix C represents the salary for each post.

$$\begin{aligned} \text{(i) } AB &= \begin{bmatrix} 11 & 11 \\ 20 & 20 \\ 1 & 1 \\ 0 & 1 \\ 0 & 1 \end{bmatrix}_{5 \times 2} \begin{bmatrix} 3 \\ 2 \end{bmatrix}_{2 \times 1} \\ &= \begin{bmatrix} 33+22 \\ 60+40 \\ 3+2 \\ 0+2 \\ 0+2 \end{bmatrix} = \begin{bmatrix} 55 \\ 100 \\ 5 \\ 2 \\ 2 \end{bmatrix}_{5 \times 1} \end{aligned}$$

Total number of posts of each kind in colleges and universities taken together:

Peons = 55; Clerks = 100; Cashiers = 5; Section officers = 2; Librarians = 2

$$\begin{aligned} \text{(ii) } C(AB) &= [120000 \quad 160000 \quad 250000 \quad 310000 \quad 280000]_{1 \times 5} \begin{bmatrix} 55 \\ 100 \\ 5 \\ 2 \\ 2 \end{bmatrix}_{5 \times 1} \\ &= [6600000 + 16000000 + 1250000 + 620000 + 560000] \\ &= [25030000]_{1 \times 1} \end{aligned}$$

Total monthly salary bill of all colleges and universities taken together =Ks 25030000

Example (4)

Matrix A	
11	11
20	20
1	1
0	1
0	1

- Peons
- Clerks
- Cashiers
- Section officer
- Librarian

Matrix B
3
2

- College
- University

Matrix C				
120000	160000	250000	310000	280000

Matrix AB		
55		
100		
5		
2		
2		

Matrix C				
120000	160000	250000	310000	280000

Matrix (AB)	
55	
100	
5	
2	
2	

Matrix C(AB)	
25030000	

Example (5)

A courier has to deliver snacks to 3 shops in 3 wards every week. Kind of snacks are potato-chips, biscuits and Shan toh-Phuu.

Before delivery, the remaining packets are 2 potato – chips, 8 biscuits and 14 Shan toh – phuu at the first shop. At the second shop, 4 potato-chips, 10 biscuits and 16 shan toh - phuu are left. Then, 6 potato - chips, 12 biscuits and 18 shan toh - phuu are remaining at the third shop.

At the beginning of the first week, the courier delivered 4 potato-chips, 10 biscuits and 16 Shan toh - phuu to the first shop, 6 potato- chips, 12 biscuits and 18 Shan toh - phuu to the second shop and 8 potato-chips, 14 biscuits and 20 Shan toh-phuu to the third shop.

The selling rate in the first week is : 2 potato- chips, 8 biscuits and 10 Shan toh - phuu at the first shop, 10 potato – chips, 12 biscuits and 24 Shan toh – phuu at the second shop and 8 potato – chips, 16 biscuits and 38 Shan ton – phuu at the third shop.

Using matrix algebra, find

(i) The total amount for the each snack in each shop after delivery.

(ii) The amount for each item which is left after selling at the end of the week.

Solution

$$\text{Let } A = \begin{matrix} & A_1 & A_2 & A_3 \\ \begin{bmatrix} 2 & 4 & 6 \\ 8 & 10 & 12 \\ 14 & 16 & 18 \end{bmatrix}, & B = \begin{bmatrix} 4 & 6 & 8 \\ 10 & 12 & 14 \\ 16 & 18 & 20 \end{bmatrix} \end{matrix}$$

$$\text{and } C = \begin{bmatrix} 2 & 10 & 8 \\ 8 & 12 & 16 \\ 10 & 24 & 38 \end{bmatrix}$$

Where

The matrix A shows the snacks of 3 types of items in three shops A_1 , A_2 and A_3 before delivery.

The matrix B shows the number of items delivered to the three shops at the beginning of a week.

The matrix C shows the number of items sold during that week.

$$(i) A+B = \begin{bmatrix} 2 & 4 & 6 \\ 8 & 10 & 12 \\ 14 & 16 & 18 \end{bmatrix} + \begin{bmatrix} 4 & 6 & 8 \\ 10 & 12 & 14 \\ 16 & 18 & 20 \end{bmatrix}$$

$$= \begin{bmatrix} 6 & 10 & 14 \\ 18 & 22 & 26 \\ 30 & 34 & 38 \end{bmatrix}$$

$$(iii) \quad (A+B) - C = \begin{bmatrix} 6 & 10 & 14 \\ 18 & 22 & 26 \\ 30 & 34 & 38 \end{bmatrix} - \begin{bmatrix} 2 & 10 & 8 \\ 8 & 12 & 16 \\ 10 & 24 & 38 \end{bmatrix} = \begin{bmatrix} 4 & 0 & 6 \\ 10 & 10 & 10 \\ 20 & 10 & 0 \end{bmatrix}$$

Example (5)

Matrix A		
2	4	6
8	10	12
14	16	18

Matrix B		
4	6	8
10	12	14
16	18	20

Matrix C		
2	10	8
8	12	16
10	24	38

Matrix A+B		
6	10	14
18	22	26
30	34	38

Matrix A+B		
6	10	14
18	22	26
30	34	38

Matrix C		
2	10	8
8	12	16
10	24	38

Matrix (A+B)-C		
4	0	6
10	10	10
20	10	0

Example (6)

The following table shows the price of each kind of snacks at the snack – counter of a Mini Mart. It shows for three weeks in detail for the amount of one week respectively, find the total revenue in each week using matrix algebra.

No	Description	Price Kyats	UOM	First week	Second week	Third week
1.	Gery Cheese Crackers (150 g)	1550	sku	250	300	2700
2.	Gery Cheese Crackers (80 g)	850	sku	112	99	109
3.	Hup SEMG Cream Crackers (650 g)	5800	sku	100	125	150
4.	Hup SEMG Cream Crackers (165 g)	1450	sku	1500	900	200
5.	Good morning Cheese Cake (200 g)	1800	sku	300	370	420

Solution

The sale matrix S and the price matrix P are given by.

$$S = \begin{bmatrix} 250 & 300 & 2700 \\ 112 & 99 & 109 \\ 100 & 125 & 150 \\ 1500 & 900 & 200 \\ 300 & 370 & 420 \end{bmatrix}_{5 \times 3}$$

$$P = [1550 \ 850 \ 5800 \ 1450 \ 1800]_{1 \times 5}$$

$$PS = [1550 \ 850 \ 5800 \ 1450 \ 1800]_{1 \times 5} \begin{bmatrix} 250 & 300 & 2700 \\ 112 & 99 & 109 \\ 100 & 125 & 150 \\ 1500 & 900 & 200 \\ 300 & 370 & 420 \end{bmatrix}_{5 \times 3}$$

$$= [3,777,700 \ 3,245,150 \ 6,193,650]$$

Example (6)

No	Description	Price	UOM	1 week	2 week	3 week
1	gary cheese (150g)	1550	SKU	250	300	2700
2	gary cheese (80g)	850	SKU	112	99	109
3	husen cracker (650g)	5800	SKU	100	125	150
4	husen cracker (165g)	1450	SKU	1500	900	200
5	goodmorning cheese cake (200g)	1800	SKU	300	370	420

Matrix P					Matrix S		
1550	850	5800	1450	1800	250	300	2700
					112	99	109
					100	125	150
					1500	900	200
					300	370	420
Matrix PS							
3777700		3245150		6193650			

3. Application to financial Mathematics

3.1 Interest

When money is borrowed , the lender expects to pay back the amount of the loan plus an additional charge for the use of the money. This additional charge is called interest. when money is deposited in a bank , the bank pays the depositor for the use of the money. The money the deposit earns is also called interest.

Interest can be computed in two ways : either as simple interest or as compound interest.

3.2 Simple Interest

Simple interest is the interest that accrues on a given sum in a set time period. It is not reinvested along with the start – up capital. The amount of interest earned on a given investment each time period will be the same (if interest rates are fixed) as the total amount of capital invested remains unaltered.

Simple interest is computed by finding the product of the principal (the amount of money on deposit) , the rate of interest (usually written as a decimal), and the time (usually expressed in years)

$$\text{Simple Interest} = \text{Principal} \cdot \text{rate} \cdot \text{time}$$

$I = P r t$

Example (1)

Find the simple interest earned on a deposit of \$ 5,750 that is left on deposit for $3\frac{1}{2}$ years and earns an annual interest rate of $4\frac{1}{2}\%$.

Solution

$$P = \$ 5750$$

$$t = 3\frac{1}{2} \text{ years} = 3.5 \text{ years}$$

$$r = 4\frac{1}{2}\% = 0.045$$

$$I = P \cdot r \cdot t$$

$$= (5750) (0.045) (3.5)$$

$$= 9.05.625$$

In $3\frac{1}{2}$ years, the account will earn \$ 905.63 in simple interest.

3.3. Compound Interest

Compound interest is the interest which is added to the original investment every time it accrues. The interest added in one time period will itself earn interest in the following time period. The total value of an investment will therefore grow over time.

Example (2)

If \$ 600 is invested for 3 years at 8% interest compounded annually at the end of each year, what will the final value of the investment be?

	\$
Initial sum invested	600.0
Interest at end of year 1 = 0.08×600	48.0
Total sum invested for years 2	<u>648.00</u>
Interest at end of years 2 = 0.08×648	51.84
Total sum invested for years 3	<u>699.84</u>
Interest at end of years 3 = 0.08×699.84	55.99
Final value of investment	<u>755.83</u>

3.4 Calculating the final value of an investment

Suppose that the start – up deposit in the account is P dollars , that interest is paid an annual rate r, and that the accumulated amount or the future value in the account at the end of the first year is A_1 . Then the interest earned that year is P r and

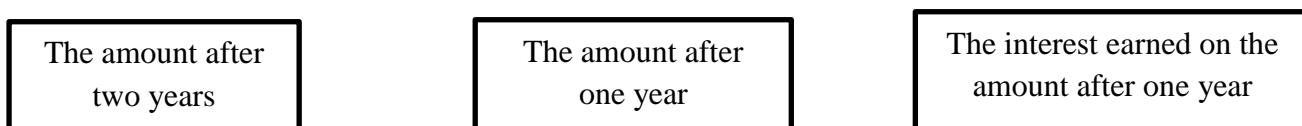


$$A_1 = P + P r$$

$$A_1 = P (1 + r)$$

Factor out the common factor , P

The amount , A_1 , at the end of the first year is the balance in the account at the beginning of the second year . So, the amount at the end of the second year, A_2 , is



equals

plus

$$A_2 = A_1 + A_1 r$$

$$= P(1+r) + P(1+r)r \quad \text{Substitute } P(1+r) \text{ for } A_1$$

$$= P(1+r) \cdot (1+r) \quad \text{Factor out the common } P(1+r)$$

$$= P(1+r)^2 \quad \text{Simplify}$$

By the end of the third year, the amount will be

$$A_3 = A_2 + A_2 r$$

$$= P(1+r)^2 + P(1+r)^2 \cdot r \quad \text{Substitute } P(1+r)^2 \text{ for } A_2$$

$$= P(1+r)^2(1+r) \quad \text{Factor out the common } P(1+r)^2$$

$$= P(1+r)^3 \quad \text{Simplify}$$

We continue in this matter, establishing the formula for the amount after n years.

The formula for the final value A_n of an investment P for n years at an annual rate r , is therefore

$$A_n = P(1+r)^n$$

Let us rework example using this formula just to check that we get the same answer.

Example (reworked)

If \$ 600 is invested for 3 years at 8% interest

$P = \$ 600$, $n = 3$ years, $r = 8\% = 0.08$

$$A_n = P(1+r)^n$$

$$A_3 = 600(1+0.08)^3$$

$$= 600(1.08)^3$$

$$= 600(1.259712)$$

$$= 755.83$$

Thus the final sum will be \$ 755.83

3.5 Periodic Rate

$$\text{Periodic rate} = \frac{\text{annual rate}}{\text{number of periods per year}}$$

This formula is often written as

$$i = \frac{r}{k}$$

Where i is the periodic interest rate, r is the annual rate, and k is the number of times interest is paid each year. If interest is calculated k times each year, in n years there will be nk conversions. Each conversion is at the periodic rate i . This leads to another form of the compound interest formula.

3.6 Compound interest Formula

An amount P , earning interest compounded k times a year for n years at an annual rate r , will grow to the future value A_n , according to the formula.

$$A_n = P \left(1 + \frac{r}{k}\right)^{nk}$$

$$A = (1 + i)^t$$

Where

$i = \frac{r}{k}$ = the interest rate per period

r = annual interest rate

k = number of times compounded per year

A = amount (final value) at the end of k compound periods.

$t = nk$ = the number of periods ($t = nk$ where n is the number of years)

P = Principal (present value)

Remark

Interest paid twice each year is called semiannual compounding, four times each year quarterly compounding, twelve times each year monthly compounding, and 360 or 365 times each year daily compounding

Example (3)

\$ 800 is invested at 12% for two years. Find the amount at the end of two years if the interest is compounded.

(a) annually (b) semiannually (c) quarterly

Solution

$$P = \$ 800, r = 12\% = 0.12, n = 2 \text{ years}$$

(a) annually

$$k = 1, i = \frac{r}{k} = \frac{0.12}{1} = 0.12, n = 2 \text{ years}, t = n k = 1.2 = 2$$

$$A = P (1 + i)^t$$
$$= 800 (1 + 0.12)^2$$

$$A = 800 (1 + 0.12)^2$$
$$= 800 (1.2544)$$
$$= 1003.52$$

The future value = \$1003.52

(b) semiannually

$$k = 2, i = \frac{r}{k} = \frac{0.12}{2} = 0.06, n = 2 \text{ years}, t = n k = 2.2 = 4$$

$$A = P (1 + i)^t$$
$$= 800 (1 + 0.06)^4$$

$$= 800 (1.06)^4$$
$$= 800 (1.26248)$$
$$= 1009.98$$

The future value = \$ 1009.98

(c) quarterly

$$k = 4, i = \frac{0.12}{4} = 0.03, n = 2 \text{ years}, t = n k = 4.2 = 8$$

$$A = P (1 + i)^t$$
$$= 800 (1 + 0.08)^8$$

$$= 800 (1.08)^8$$
$$= 800 (1.26677)$$
$$= 1013.42$$

The future value = \$1013.42

4. Application of Exponential and Logarithm Functions

4.1 Exponential Function

Functions with a variable exponent are called exponential function .

Example

$$Y = A^x$$

Where A is a constant and $A > 1$

This is known as an exponential function to base A .

$$A^0 = 1 \text{ and } A^1 = A$$

4.2 The Natural Exponential Function

The specific function $y = e^x$ should be known as the “natural exponential function” .

In economic , exponential functions to the base e are particularly useful for analyzing growth rates.

How calculate value for e is derived, we return to use the compound interest formula.

$$A_n = P (1 + i)^{kn}$$

$$A = P (1 + i)^t$$

$$A = P \left(1 + \frac{r}{k}\right)^t$$

Where

$i = \frac{r}{k}$ = the interest rate per period

r = annual interest rate

k = number of times compounded per year

t = the number of periods ($t = kn$ where n is the number of years)

A = amount (future value) at the end of k compound periods.

P = principal (present value)

(i) Annually

$$k = 1, r = 100\% = 1, n = 1 \text{ year}, P = 1, t = nk = 1.1 = 1$$

$$A = P \left(1 + \frac{r}{k}\right)^t$$

$$A = P \left(1 + \frac{r}{k}\right)^{nk}$$

$$= 1 (1 + 1)^{1.1}$$

$$= 2^1$$

$$= 2$$

(ii) Monthly

$$k = 12, r = 100\% = 1, i = \frac{r}{k} = \frac{1}{12}, n = 1 \text{ year}, P = 1, t = n k = 1 \cdot 12 = 12$$

$$A = 1 \left(1 + \frac{1}{12}\right)^{12} \\ = 2.6130353$$

(iii) Daily

$$k = 365, r = 100\% = 1, i = \frac{r}{k} = \frac{1}{365}, n = 1 \text{ year}, P = 1, t = n k = 1 \cdot 365 = 365$$

$$A = 1 \left(1 + \frac{1}{365}\right)^{365} \\ = 2.7145677$$

(iv) Hourly

$$k = 8760, r = 100\% = 1, i = \frac{r}{k} = \frac{1}{8760}, n = 1 \text{ year}, p = 1,$$

$$t = n k = (1) (8760) = 8760$$

$$A = 1 \left(1 + \frac{1}{8760}\right)^{8760} \\ = 2.7181267$$

From the above calculations we can see that the more frequently that interest is credited the closer the value of the final sum accumulated gets to 2.7182818, the value of e .

When interest at a nominal annual rate of 100% is credited at infinitesimally small time intervals then growth is continuous and e is equal to the final sum credited. Thus

$$e = \left(1 + \frac{1}{k}\right)^k \quad \text{where } k \rightarrow \infty \\ = 2.7182818$$

This result means that a sum P invested for one year at a nominal annual interest rate of 100% credited continuously will accumulate to the final sum of

$$A = e P = 2.7182818 P$$

Continuous growth also occurs in other variables relevant to economics, e.g., population, the amount of natural materials mined.

4.3 Accumulated final Values after Continuous Growth

To derive a formula that will give the final sum accumulated after a period of continuous growth, we first assume that growth occurs at several discrete time intervals throughout a year.

We return to use the final sum formula

$$A = P \left(1 + \frac{r}{k} \right)^{nk}$$

Where $i = \frac{r}{k}$ = the interest rate per period

r = annual interest rate

k = number of times compounded per year

A = amount (final value) at the end of k compound periods.

P = Principal (present value)

To reduce this to a simpler formulation, multiply top and bottom of the exponent by r so that

$$A = P \left(1 + \frac{r}{k} \right)^{\frac{k(rn)}{r}} \quad \text{————— (1)}$$

If we let $m = \frac{k}{r}$ then $\frac{1}{m} = \frac{r}{k}$ and so (1) can be written as

$$\begin{aligned} A &= P \left(1 + \frac{1}{m} \right)^{m r n} \\ &= P \left(1 + \frac{1}{m} \right)^{m(rn)} \quad \text{————— (2)} \end{aligned}$$

Growth becomes continuous as the number of times per year that increments in growth are accumulated increases towards infinity.

When $k \rightarrow \infty$ then $\frac{k}{r} = m \rightarrow \infty$

Therefore, using the result derived in section (3.2) above,

$$\left(1 + \frac{1}{m} \right)^m \rightarrow e \text{ as } m \rightarrow \infty$$

Substituting this result back into (2) above gives

$$A = P e^{rn}$$

This formula can be used to find the final value of any variable growing continuously at a known rate from a given original value.

4.4 Formula for continuous compounding

If P dollars is invested at an annual interest rate r compounded continuously, then after t years the amount A is given by

$$A = P e^{rt}$$

4.5 Application to Continuous Compounding

Example (1)

If \$ 1000 is invested at 5% compounded continuously, how much is the investment worth after four years?

Solution

Let $P = \$ 1000$, $r = 5\% = 0.05$, $t = 4$ years

$$A = P e^{rt}$$

$$A = 1000 \cdot e^{0.05(4)}$$

$$= 1000 \cdot e^{0.2}$$

$$= 1000 (1.2214)$$

$$= 1221.40$$

The investment worth after four years = \$ 1221.40

Example (2)

Suppose \$ 5000 is invested in an account earning 6.5% interest find the balance in the account after 10 years under the following options.

- a . Compounded annually
- b . Compounded quarterly
- c . Compounded monthly
- d . Compounded daily
- e . Compounded continuously

Solution

Compounding Option	n Value	Formula	Result
Annually	$n = 1$	$A = 5000 \left(1 + \frac{0.065}{1}\right)^{(1)(10)}$	\$ 9385.69

Quarterly	$n = 4$	$A = 5000(1 + \frac{0.065}{4})^{(4)(10)}$	\$ 9527.79
Monthly	$n = 12$	$A = 5000(1 + \frac{0.065}{12})^{(12)(10)}$	\$ 9560.92
Daily	$n = 365$	$A = 5000(1 + \frac{0.065}{365})^{(365)(10)}$	\$ 9577.15
Continuously	Not applicable	$A = 5000 e^{(0.065)(10)}$	\$ 9577.70

Notice that there is a \$ 191.46 difference in the account balance between annual compounding and daily compounding. However, the difference between compounding daily and compounding continuously is small - \$ 0.55

Example (3)

Population in a developing country is growing continuously at an annual rate of 3%. If the population is now 4.5 millions , what will it be in 15 years' time?

Solution

initial value $P = 4.5$ millions ,

rate of growth $r = 3\% = 0.03$

number of time period $t = 15$ years

$$\begin{aligned}
 A &= P e^{rt} \\
 &= (4.5) e^{(0.03)(15)} \\
 &= (4.5) e^{0.45} \\
 &= (4.5) (1.5683122) \\
 &= 7.0574048
 \end{aligned}$$

Thus the predicted final population is 7,057,405 millions

Example (4)

A river flows through a hydroelectric dam is 18 million gallons a day and shrinking continuously at an annual rate of 4% what will the flow be in 6 years' time?

Solution

The 4% rate of decline becomes the negative growth rate $r = -4\% = -0.04$

We also know the initial values $P = 18$ million gallons and $t = 6$ years . Thus the final value is

$$\begin{aligned}
A &= P e^{rt} \\
&= 18 e^{-0.04(6)} \\
&= 18 e^{-0.24} \\
&= 18 (0.78662) \\
&= 14.159 \\
&= 14.16
\end{aligned}$$

Therefore, the river flow will shrink to 14.16 million gallons per day.

4.6 The natural logarithm

The logarithm to the base e is an important function. It is also known as the natural logarithm. It is defined for all $x > 0$.

$$y = \log_e x \Leftrightarrow x = e^y$$

Remark

Logarithm function and exponential function inverse of each other.

$$\ln e^x = e^{\ln x} = x$$

Proof

$$(i) \quad \ln e^x = \log_e e^x = x \log_e e = x \cdot 1 = x$$

$$(ii) \quad e^{\ln x} = ?$$

$$\text{Let } y = \ln x$$

$$x = e^y$$

$$e^{\ln x} = e^y = x \quad \text{substitute } \ln x \text{ for } y$$

By (i) and (ii)

$$\ln e^x = e^{\ln x} = x$$

This fact is used under the example.

If we want to know the length of time taking the double investment, we have to use the equation $e^x = 2$. If we want the triple investment, we have to use the equation $e^x = 3$ and so on.

Example

How long will it take an investment to double if the interest is 6% compounded continuously?

Let P be the initial amount invested.

$$r = 6\% = 0.06$$

$$A = P e^{rt}$$

$$2p = P e^{rt}$$

$$2 = e^{rt}$$

$$2 = e^{(0.06)t}$$

$$\ln 2 = \ln e^{(0.06)t}$$

$$\ln 2 = (0.06)t$$

$$t = \frac{\ln 2}{0.06}$$

$$= \frac{100 \times \ln 2}{6}$$

$$= \frac{100 \times 0.6937}{6}$$

$$= \frac{69.31}{6}$$

$$= 11.55$$

The investment will double in a little more than $11\frac{1}{2}$ years.

5. Conclusion

Mathematics is useful in business and real - life. We study the problems in reference books which are real data from business work. We found that business and economic problems are solved by means of business mathematics in developed countries. The weakness of this paper is that real data from business work are not used for mathematics models. As the economics is improving, our own real data must try to be used for solving real – life business problems.

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Important of Business Mathematics in Management System : An Overview

Kamalpreet Kaur , Assistant Professor , Department of Commerce, D . A. V
College, Pehowa.

Study on Newton Algorithm for Solving Mathematical Functions Using C-programing

Banyar Min Min Tun*¹

Abstract

This paper presents a reasonable computer application solution of the mathematical function for Newton method in numerical methods, which have been designed and implemented of a Computerized System for Newton method. There are various numerical methods to solve equations of the type $f(x)=0$, its than we only discuss Newton - Raphson numeric method Algorithm and computerized simple program with example using C programming language.

Keywords:

Numerical methods, Newton-Raphson, C programing language

*Associate Professor, Department of ICT

1. Introduction

Numeric methods can be formulated as algorithms. An algorithm is a step-by-step procedure that states a numeric method in a form (a “pseudo code”) understandable to humans. The algorithm is then used to write a program in a programming language that the computer can understand so that it can execute the numeric method. Important algorithms for Newton’s method state in this paper. We give example for Newton’s solving method with C programming language. For routine tasks, some other software system may contain programs (eg. Microsoft Excel) that we can use. Some of Numeric Methods could not use readymade software, so we should create a solving program. In our studying paper, to create a C programming language for Newton’s numerical method, start basic from Newton-Respon’s Method solving equation $f(x)=0$.

1.2 Objectives of the study

The objectives of the study are-

- (i) To Develop Algorithm for Solving Mathematical Equations
- (ii) In Newton’s Method, To Solve Mathematical functions Using C-programming language.

1.3. Method of Study

This paper mainly use in literature survey and the data sources are based on secondary data obtaining from libraries, internet, website. We develop the Newton’s algorithm for numerical data and that data solved in visual basic compiler using C-programing language.

1.4. Scope of the study

This study is focused on numerical method can compute easy computerize system.

2. Solution of single Equations

In this paper we select basic kinds of problems and discuss numeric methods on how to solve them. We will learn about a variety of important problems and become familiar with ways of thinking in numerical analysis. We choose $f(x)=0$ problem because this problem is perhaps the easiest conceptual problem to find solutions of a single equation.

$f(x)=0$, Where f is a given function.

A solution of $f(x)=0$ is a number $x=s$ such that $f(s) = 0$ Here, s suggests “solution,” but we shall also use other letters. eg. $f(a) = 0, f(b) = 0, ……$

It is interesting to note that the task of solving $f(x)=0$ is a question made for numeric algorithms, as in general there are no direct formulas, except in a few simple cases.

2.1 Examples of single equations

Some examples of single equations are $x^3 + x = 1$, $\sin x = 0.5x$, $\tan x = x$, $\cosh x = \sec x$, which can all be written in the form of $f(x)=0$. The first of the four equations is an algebraic equation because the corresponding f is a polynomial. In this case the solutions are called roots of the equation and the solution process is called finding roots. The other equations are transcendental equations because they involve transcendental functions. In this case the solutions are called roots of the equation and the solution process is called finding roots.

2.2 Solution of $f(x)=0$ by Iteration Method

To solve $f(x)=0$, when there is no formula for the exact solution available. $f(x)=0$ have many solution so we can use an approximation method, such as an **iteration method**. Iteration method is a method in which we start from an initial guess x_0 (which may be poor) and compute step by step $x_0, x_1, x_2, x_3, \dots$ (in general better and better) approximations of an unknown solution of $f(x)=0$.

In general, iteration methods are easy to program because the computational operations are the same in each step—just the data change from step to step—and, more importantly, if in a concrete case a method converges, it is stable. We discuss **Newton's Methods** in this paper among from other many iteration methods.

3. Newton's Method for Solving Equation $f(x)=0$

Newton's method, also known as Newton–Raphson's method, is iteration method for solving equations $f(x)=0$ where f is assumed to have a continuous derivative f' . The method is commonly used because of its simplicity and great speed.

The idea is that we approximate the graph of f , by suitable tangents. Using an approximate value obtained from the graph of f , we let be the point of intersection of the x -axis and the tangent to the curve of f at x_0 (see Fig.1.1). Then

$$\tan \beta = f'(x_0) = \frac{f(x_0)}{x_0 - x_1}, \quad \text{hence} \quad x_1 = x_0 - \frac{f(x_0)}{f'(x_0)}.$$

To implement it analytically we need a formula for each approximation in terms of the previous one, i.e. we need x_{n+1} in terms of x_n .

In fig (1.1) ,

The equation of the tangent line to the graph $y = f(x)$ at the point $(x_0, f(x_0))$ is

$$y - f(x_0) = f'(x_0)(x - x_0)$$

The tangent line intersects the x-axis when $y = 0$ and $x = x_1$, so

$$-f(x_0) = f'(x_0)(x_1 - x_0)$$

Solving this for x_1 gives

$$x_1 = x_0 - \frac{f(x_0)}{f'(x_0)},$$

$$x_2 = x_1 - \frac{f(x_1)}{f'(x_1)} \quad \text{and,}$$

more generally,

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$

The above formula application is to solving equations of the form $f(x) = 0$. It is called the Newton Raphson method.

It is guaranteed to converge if the initial guess x_0 is close enough, but it is hard to make a clear statement about what we mean by ‘close enough’ because this is highly problem specific. A sketch of the graph of $f(x)$ can help us decide on an appropriate initial guess x_0 for a particular problem.

Then we can be obtained Taylor’s formula from algebraically solving above equation.

$$f(x_{n+1}) \approx f(x_n) + (x_{n+1} - x_n)f'(x_n) = 0$$

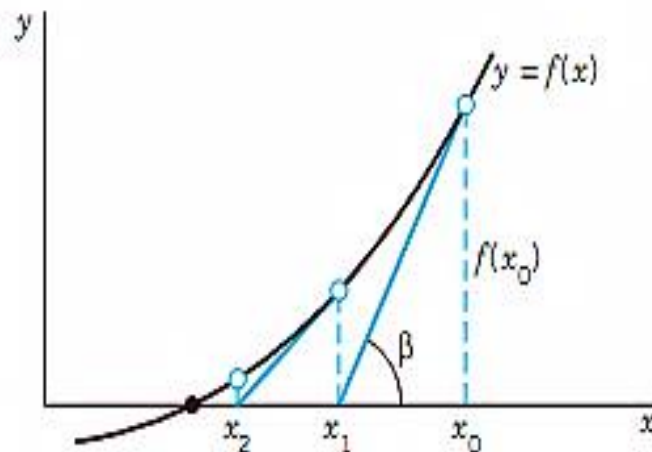


Fig: 1.1 Newton’s Method

4. Newton's Algorithm for solving Equations $f(x) = 0$

An algorithm is a finite set of precise instruction for performing a computation or for solving problem.

There are(5) steps in this algorithm. Newton-Raphson's method has mainly potions for computing is derivative of $f(x)$. Derivative of $f(x)$ must be consist (ie. $f'(x_0) \neq 0$).

If $f'(x_0) = 0$, the computing procedure will be stop and unsuccessfully. Step (2) is main step for this algorithm (Table 1.1)

Step (5) in this algorithm can also be obtained if we algebraically solve Taylor's formula

Table (1.1) Newton's method for solving Equations $f(x) = 0$

ALGORITHM NEWTON (f, f', x_0, ϵ, N)

This algorithm computes a solution of $f(x) = 0$ given an initial approximation x_0 (starting value of the iteration). Here the function $f(x)$ is continuous and has a continuous derivative $f'(x)$.

INPUT: f, f' , initial approximation x_0 , tolerance $\epsilon > 0$, maximum number of iterations N .

OUTPUT: Approximate solution x_n ($n \leq N$) or message of failure.

For $n = 0, 1, 2, \dots, N - 1$ do:

1 Compute $f'(x_n)$.

2 If $f'(x_n) = 0$ then OUTPUT "Failure." Stop.

 [Procedure completed unsuccessfully]

3 Else compute

(5)
$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}.$$

4 If $|x_{n+1} - x_n| \leq \epsilon |x_{n+1}|$ then OUTPUT x_{n+1} . Stop.

 [Procedure completed successfully]

End

5 OUTPUT "Failure". Stop.

 [Procedure completed unsuccessfully after N iterations]

End NEWTON

5. Example of Newton's method to solve the equation $f(x) = 0$, where $f(x) = \frac{1}{x} - 2^x$

In the following calculation, the newton's methods discussed are used to solve the equation $f(x) = 0$, where $f(x) = \frac{1}{x} - 2^x$

Let us solve $\frac{1}{x} - 2^x = 0$ for x .

In this case $f(x) = \frac{1}{x} - 2^x$, $f'(x) = -\frac{1}{x^2} - (2^x \ln 2)$

Substitute in Newton's method

$$x_{n+1} = x_n - \frac{\left(\frac{1}{x} - 2^x\right)}{\left(-\frac{1}{x^2} - (2^x \ln 2)\right)}$$

$$x_1 = x_0 - \frac{\left(\frac{1}{x_0} - 2^{x_0}\right)}{\left(-\frac{1}{x_0^2} - (2^{x_0} \ln 2)\right)}$$

We can get $f(x)$ solutions choosing the value of x . There are many solutions in this problem set we compute carrying on start form x_1, x_2 etc. We can stop when the digits stop changing to the required degree of accuracy.

6. Example of C- programming for solve the equation $f(x) = 0$

In the following calculation, the newton's methods discussed are used to solve the equation $f(x) = 0$, where $f(x) = \frac{1}{x} - 2^x$

We discuss these programs in a Linux environment (their discussion in any Unix environment would be virtually identical). The following file `funct.c` will contain the definition of the function `f`:

```
1 #include <math.h>
2
3 double funct(double x)
4 {
5     double value;
6     value = 1.0/x-pow(2.0,x);
7     return(value);
8 }
```

Here `pow(x,y)` is C's way of writing x^y . Using decimal points (as in writing 1.0 instead of 1), we indicate that the number is a floating point constant. The numbers at the beginning of these lines are not part of the file; they are line numbers that are occasionally useful in a line-by-line discussion of such a file.

The program for bisection is in the file `bisect.c`, to be discussed later. The simplest way of compiling these programs is to write a make file. In the present case, the make file is called (surprise) `make` file (this is the default name for a make file), with the following content:

```
1 all: bisect
2 bisect : funct.o bisect.o
3 gcc -o bisect -s -O4 funct.o bisect.o -lm
4 funct.o : funct.c
5 gcc -c -O4 funct.c
6 bisect.o : bisect.c
7 gcc -c -O4 bisect.c
```

Line 1 here describes the file to make; namely, the file `bisect`. This file contains the compiled program, and the program can be run by typing its name on the command line, that is, by typing `$ bisect`.

Here the dollar sign `$` is the customary way of denoting the command line prompt of the computer, even though in actual life the command line prompt is usually different.

The second line contains the dependencies; the file `bisect` to be made depends on the files `funct.o` and `bisect.o` (the `.o` suffix indicates that these are object files, that is, already compiled programs – read on).

The file on the left of the colon is called the target file, and the files on the right are called the source files.

When running the `make` command, by typing, say, `$ make all` on the command line, the target file is created only if it does not already exist, or if it predates at least one of the source files (i.e., if at least one of the source files has been change since the target file has last been created). Clearly, if the source files have not changed since the last creation of the target file, there is no need to create the target file again.

Line 3 contains the rule used to create the target. One important point, a quirk of the `make` command, that the first character of line three is a tab character (which on the screen looks like eight spaces); the rule always must start with a tab character. The command on this line invokes the `gcc` compiler (the GNU C compiler) to link the already created programs `funct.o` and `bisect.o`, and the mathematics library (described as `-lm` at the end of the line). The `-o` option gives the name `bisect` to the file produced by the compiler. The option `-s` gives is passed to the loader to strip all symbols from the compiled program, thereby making the compiled program more compact. The option `-O4` (the first character is “O” and not “zero”) specifies the optimization level.

Lines 4 and 6 contain the dependencies for creating the object files `funct.o` and `bisect.o`, and lines 5 and 7 describe the commands issued to the GNU C compiler to create these files from the source files `funct.c` and `bisect.c`. The compiler option `-c` means compile but do not link the assembled source files. These latter two files need to be written by the programmer; in fact, the file `funct.c` has already been described, and we will discuss the file `bisect.c` next:

7. C- programming for Newton's method to solve the equation $f(x) = \frac{1}{x} - 2^x$ with $f(x) = 0$

For Newton's method, in addition to the function, its derivative also needs to be calculated. The program to do this constitutes the file dfunct.c:

```
1 #include <math.h>
2
3 double dfunct(double x)
4 {
5     double value;
6     value = -1.0/(x*x)-pow(2.0,x)*log(2.0);
7     return(value);
8 }
```

The program itself is contained in the file newton.c. The makefile to compile this program is as follows:

```
1 all: newton
2 newton : funct.o newton.o dfunct.o
3 gcc -o newton -s -O4 funct.o dfunct.o newton.o -lm
4 funct.o : funct.c
5 gcc -c -O4 funct.c
6 dfunct.o : dfunct.c
7 gcc -c -O4 dfunct.c
8 gcc -c -O4 bisect.c
9 newton.o : newton.c
10 gcc -c -O4 newton.c
```

The file newton.c itself is as follows:

```
1 #include <stdio.h>
2 #include <math.h>
3
4 #define absval(x) ((x) >= 0.0 ? (x) : -(x))
5
6 double funct(double);
7 double dfunct(double);
8
9 double newton(double (*fnct)(double), double (*deriv)(d
10 double startingval, double xtol, int maxits, double
11 int *itcount, int *outcome);
12
13 main()
14 {
15 /* This program implements the Newton's method
16 for solving an equation funct(x)=0. The function
```

```

17 funct() and its derivative dfunct() is defined
18 separately. */
19 const double tol=5e-10;
20 double x, fx, root;
21 int its, success;
22 root = newton(&funct, &dfunct,
23 3.0, tol, 50, &fx,
24 &its, &success);
25 if ( success == 2 ) {
26 printf("The root is %.12f. The value of "
27 " the function\nat the root is %.12f.\n", root, fx);
28 printf("%u iterations were used to find "
29 " the root\n", its);
30 }
31 else if (success == 1) {
32 printf("The derivative is too flat at %.12f\n", x);
33 }
34 else if (success == 0) {
35 printf("The maximum number of iterations has been reached\n");
36     }
37 }
38
39 double newton(double (*fnct)(double), double (*deriv)(double),
40 double startingval, double xtol, int maxits, double *fx,
41 int *itcount, int *outcome)
42 {
43 double x, dx, dfx, assumedzero=1e-20;
44 *outcome = 0;
45 x = startingval;
46 for (*itcount = 0; *itcount < maxits; (*itcount)++) {
47 dfx = deriv(x);
48 if ( absval(deriv(x))<=assumedzero ) {
49 *outcome = 1; /* too flat */
50 break;
51 }
52 *fx = fnct(x);
53 /* The next two lines are included so as to monitor
54 the progress of the calculation. These lines
55 should be deleted from a program of
56 practical utility. */
57 printf("Iteration number %2u: ", *itcount);
58 printf("x=%.12f and f(x)=%.12f\n", x, *fx);

```

```

59 dx = -*fx/dfx; x = x+dx;
60 if ( absval(dx)/(absval(x)+assumedzero) <= xtol ) {
61 *outcome = 2; /* within tolerance */
62 *fx = fnct(x);
63 break;
64     }
65 }
66 return x; /* returning the value of the root */
67 }

```

In lines 22-24 calls the bisection function, located in lines 39–67, with initial approximation $x_1 = 3$.

The variable success keeps track of the outcome of the calculation, the value 2 indicates that the root has been successfully calculated within the required tolerance, given as $5 \cdot 10^{-10}$ by the constant tol specified in line 19.

The value 1 indicates that the tangent line is too flat at the current approximation (in which case the next approximation cannot be calculated with sufficient precision).

Finally, the value 0 indicates that the maximum number of iterations (50) at present, specified in the calling statement in line 23) has been exceeded.

This program produces the following output:

```

1 Iteration number 0: x= 3.000000000000 and f(x)=-7.666666666667
2 Iteration number 1: x= 1.644576458341 and f(x)=-2.518501258529
3 Iteration number 2: x= 0.651829979669 and f(x)=-0.037017477051
4 Iteration number 3: x= 0.641077330609 and f(x)= 0.000380944220
5 Iteration number 4: x= 0.641185733066 and f(x)= 0.000000040191
6 Iteration number 5: x= 0.641185744505 and f(x)= 0.000000000000
7 The root 0.641185744505. The value of the function
8 at the root is -0.000000000000.
9 5 iterations were used to find the root

```

Conclusion

In this paper, we developed the Newton Algorithm and solved the mathematical functions in numerical methods with examples, when solving problems set, we occurred errors in the result. There are generally,

- (i) Approximations in final results of computations of unknown quantities; that is, they are not exact but involve errors or round off errors.
- (ii) Experimental errors are errors of given data (probably arising from measurements).
- (iii) Truncating errors result from truncating (prematurely breaking off), for instance, if we replace a Taylor series with the sum of its first few terms. These errors depend on the computational method used and must be dealt with individually for each method.
- (iv) An algorithm instability. However, if small changes in the initial data can produce large changes in the final results, we call the algorithm unstable.

To reduce errors we will notices the following conditions;

- (i) To solve experimental errors we can use exactly data.
- (ii) Stability. To be useful, an algorithm should be stable; that is, small changes in the initial data should cause only small changes in the final results.

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Spatial Analysis of Road Transportation Network in Thanlyin Town

Win Thet Myint

ABSTRACT

Developed and efficient transportation network in urban areas is just like blood flowing through veins in blood. It is a basic infrastructural requirement to meet the need of the increasing population and growing economy. The study was taken up to provide road and railway network information to city dwellers which help them to choose appropriate route for increasing the transport network system efficiency.

The study area of Thanlyin Town is located in Thanlyin Township, southern part of Yangon Region. It is located in the southern part of Yangon Region. Thanlyin Town lies between 16° 45' north and 16° 47' north Latitude, and also between 96° 13' east and 96° 16' east longitude. The town has an area of (7.93) square miles. It is composed of (17) wards. Among them, Myoma (South) and Myo Houn (East) are densely populated area. In the town area, main transportation routes is Kyaik Khauk Pagoda Road (Bago-Thanatpin-Khayan- Thonegwa- Kyauktan), and Bogyoke Nay Win Road is secondary road.

In this project, I present the spatial analysis of transportation network in Thanlyin Town. The Arc GIS 10 is used to perform the extraction of region of interest from primary data and for Road Generalization, like selection, merging, elimination, symbolization etc. Total Road length and total area is calculated using the Arc Map software, using these data and population data, a Population Density and Road Density is calculated.

Network dataset is created in Arc Catalog 10 which provides the number of Transport Lines and number of Junctions. It is used to calculate the Network Connectivity Indices. An Alpha Index, Beta Index, Gamma Index are calculated for Transportation Analysis. This provides the spatial relationship between the transportation and Town planning of Thanlyin. We present the land cover classification of study area by Remote Sensing, Population Density, Road Density, Buffer analysis and Network analysis by Geographic Information System.

Index Terms — Alpha Index, Beta Index, Eta Index, Gamma Index, GIS, Network Indices, Road density, Transportation Network Analysis.

INTRODUCTION

The transportation system is critical component of urban infrastructural development and economical growth of the city. It displays region's condition as well as planner's dedication for their region. A Geographic Information System (GIS) is more useful in management functions and decision support systems which are more helpful in the planning process of urbanization. According to that when the spatial entity is associated with the non-spatial attributes. This is a key factor for applying GIS platform, the database of transportation network is normally extended by integrated with attribute and spatial data. As roads are the only means of transport available to the urban settlements, it plays an important role in the comprehensive development of a society. It acts as the lifeline of the urban economy and society.

The factors mentioned in the above statement include purpose of journey mode of transport route if a number of routes are available type of vehicle, etc. The elements, transportation literally means to carry something from one place to another. It can be executed by means such as through roads, rails, airways, waterways pipelines etc. Roads and its network only are considered in this paper. The study area lies between 16° 45' north and 16° 47' north latitude and 96° 13' east and 96° 16' east longitude, which is an area of 7.93 square kilometers.

The development of a region partly depends on transportation road. GIS can be used to monitor transport network, conditions of a network facilities, shortest or best route to reach destination and new service area. The Transportation System is a critical component of urban infrastructure growth of that region. It also displays region's economic condition as well as planners' decision for their region. An efficient route planning and accessibility facilitate sustainable development. This paper introduces the current pattern of the transportation Network system in Thanlyin Town.

Road transportation of Thanlyin Town had rapidly developed after two bridges (Thanlyin bridges and Kalawel Bridge) had been built. Transportation network analysis plays an important role to make commodities flow and better decisions for socio-economic development. The benefit of GIS is not only user-friendly access and display, but provides spatial analysis. This spatial analysis can be used to identify more data to discover new relationships. These analyzed data can be displayed in the form of maps, graphs or summary statistics.

The Implementation provides GIS functionalities like, extraction of features, Network Analysis. Designing thematic maps, access to several layers of data at a time. The existing database of the Thanlyin Town does have the option to manipulate, access, and query the database but it is limited to textual queries only. It is not possible to make relationship between the crossing attribute data with respect to the topological and spatial relationship. To identify the spatial link between Transport Network and Town Planning as an existing database is useful.

A mode of transport is a solution that makes use of a particular type of vehicle, infrastructure and operation. The transportation of a person or of cargo may involve one mode or several modes, with the latter case being called intermodal or multimodal transport. Transport systems are among the various factors affecting the quality of life and safety in a city. The study area has two means of transport i.e. railways and roads. The Present analysis of the road and railway transport network analysis was carried out because the city is the convergence point of all type of inland transport network of main road and secondary and others road.

The main concerns of this type of studies are the observation of development of the road transport network which creates level of connectivity and accessibility between settlements. This study was based on remote sensing data and processing using the GIS Technique the study on road network analysis of Thanlyin Town using high resolution satellite data and GIS. Also studied on road network analysis using Geo-informatics Technique.

Key Term: Connectivity Indices (Alpha Index, Beta Index and Gamma Index) to know the level of connectivity in the study area.

Aims and Objective-

Aim

-to observe the network connectivity of Thanlyin Town area and spatial distribution of transportation pattern and bus stop points

Objectives

- to understand the current pattern of transportation routes in Thanlyin Town
- to analyze the road network of the town area
- to examines the access the Connectivity of Network Analysis

TRANSPORTATION NETWORK

Transportation represents one of the most important human activities worldwide. It is an indispensable component of the economy and plays a major role in spatial relations between geographic nodes. Its importance is manifested through several points of view, such as historical, social, political, environmental, economic and geographic. Moreover, the transport sector influences all people and affects their environment. When transport systems are not efficient, they can be a source of frustrations as well as being detrimental to welfare, mobility, economics, etc. However, when transport systems are efficient, they provide economic and social opportunities and benefits. Transport also carries an important social and environmental load, which cannot be neglected (Rodrigue, 2006).

The transport network with complex mathematical models is the basis for transport analysis and urban growth. The network is a representation of major routes within that area. This transportation network is the input to the transport analysis and to identify urban growth, which contains Vertexes (Node /Point / Junction) and Edges (Arc / Line / Link). This is used to identify the starting point and ending points of any routes. Every Vertexes (V) and Edges (E) is a record that is used to represent the characteristics of roads for transportation network.

The GIS & RS technology applies to development of urbanization, the transportation information system and management can provide a very strong solution. Information related to transportation network is used in the efficient planning, designing, construction, maintenance and management of the transport system. In the study area of Thanlyin Town's transportation network consist a main road (Bago- Tha Nut Pin- Khayan- Thone Gwa- Kyauk Tan Road) and Secondary Road (Bogyoke Nay Win Road) shown in Figure (1.1).

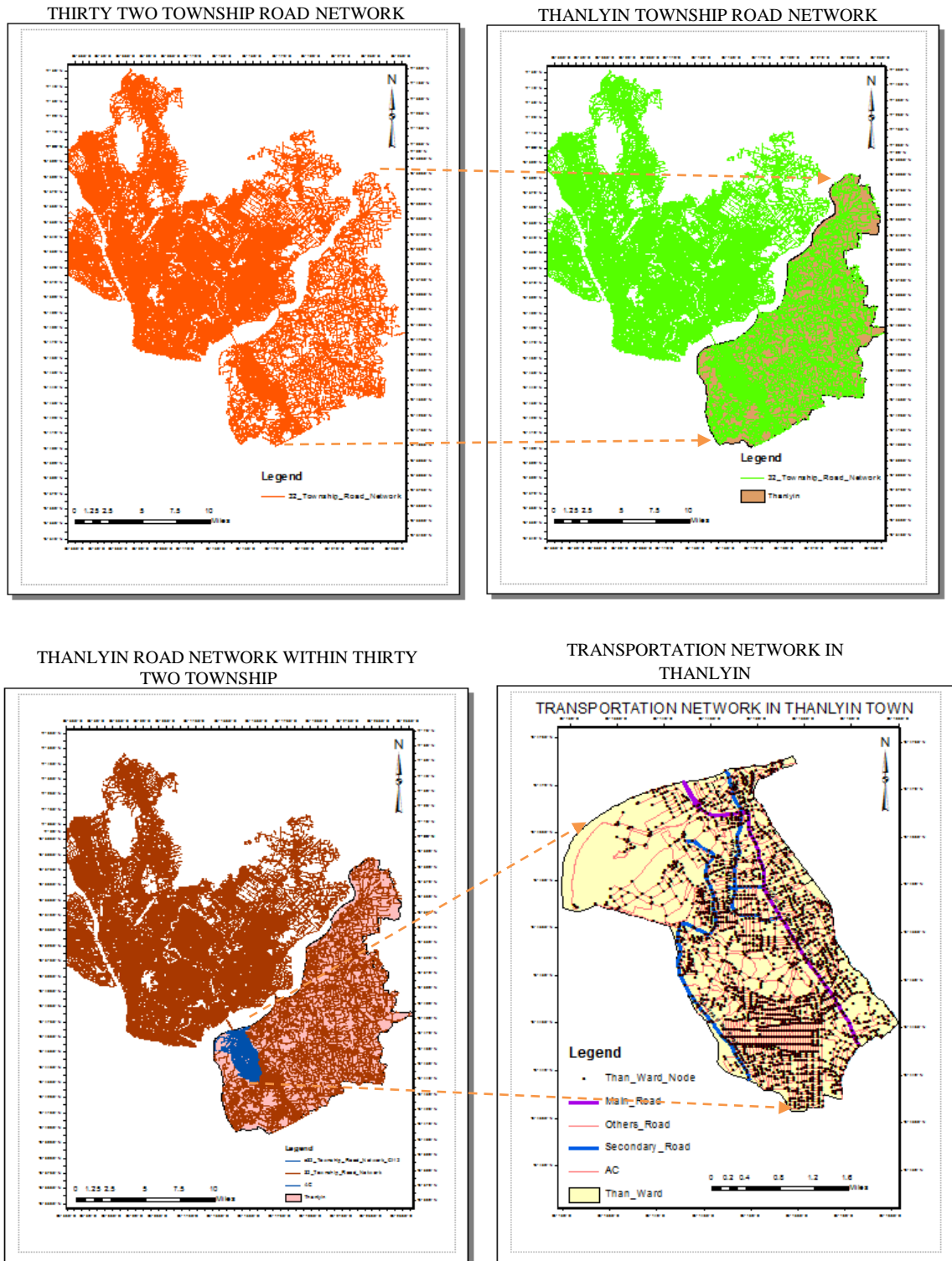


Figure: (1.1) Network Pattern in Thanlyin Town
Sources: Google Earth Image in 2014 and UTM

1. BACKGROUND OF STUDY AREA

Thanlyin is a capital town of Thanlyin Township and located Southern Yangon Region. It is located at the corner where the Bago River and the Yangon River meet. Latitudinally, Thanlyin Town lies between 16° 45' north and 16° 47' north latitude and 96° 13' east and 96° 16' east longitude.

The town is bounded by the Bago River on the north, Nyaung Thone Pin village tract on the east, Phayar Gone village on the south, Bogyoke village on the southwest and the Yangon River on the west. It has an area of 7.93 square kilometers. It composed with 17 wards. The northwest- southeast axis is slightly longer than east-west axis at the widest places (Fig.1.2).

Bago River (before joining Yangon River) running from north to south is crossing the western part of the town. Main roads (Kyaik Khauk pagoda routes) are trended from northwest to southeast on the undulating lateritic ridge. Elevation ranges are from 50' (15 meters) to 100' (30meters) above mean sea level.

LOCATION OF STUDY AREA

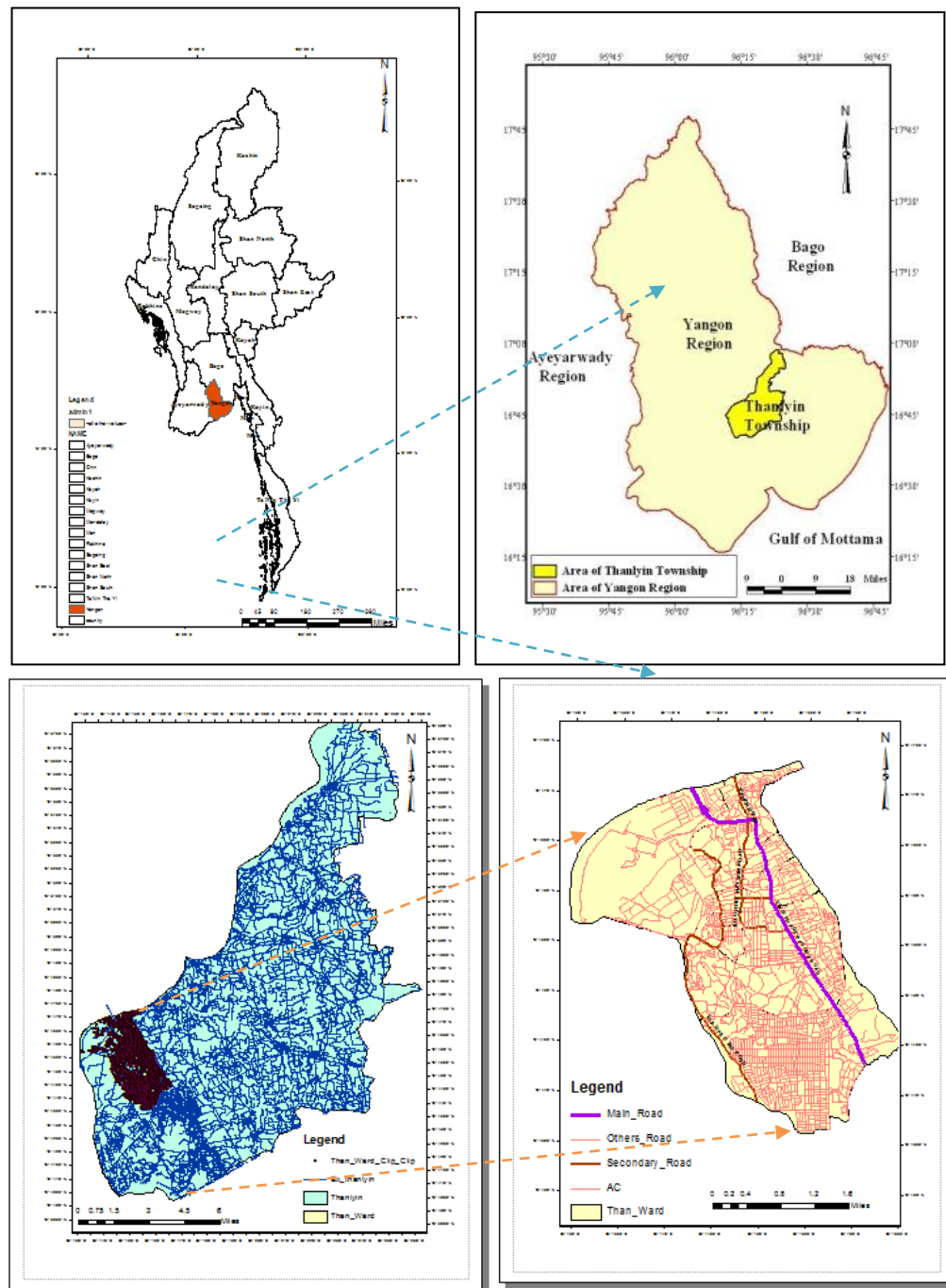


Figure (1.2) Location Map of Thanlyin Town Area, Yangon Region

Source: Survey Department in Yangon, Google Earth Image in 2014 and UTM

2. MATERIALS AND SOURCES OF DATA

In this paper, UTM map (1:50000)(Survey Department) and Google Earth image (2014) are used for application of GIS. Geo-database, digitize features, network analysis, and buffer analysis are made step by step. The necessary facts and data are acquired from the local offices, field surveys and interviews with the local people.

The Geographic Coordinate System of these images is GCS_WGS_1984 and Projection is Transverse Mercator. Also a primary data of Thanlyin Town boundary (limit) was provided by the Town Administrative Office, The secondary data of population was taken from the Immigration and Manpower Department in Thanlyin Town.

Field Collected Data: Field data has been collected through walks by mobile mapper GPS-Data collector.

Official Data: This data has been used for road network structure, classification of Public-Facilities, Commercial and Governmental Units.

GIS Data: Due to the cross disciplinary nature of the methodology, a diverse variety of data sources were accessed. A brief description datasets is given herein.

Road Network Dataset: With the help of Official/field collected data and basic imagery

POI (Point of Interest): POIs also collected from same resources. **Network Dataset:** Network dataset has been created with the help of network data and its attributes in Arc Catalog.

UTILIZATION OF SOFTWARE

The study has been implemented using Arc GIS software. Digitization, calculations, attribute, removal of topological errors, modeling of digitized data, building of network dataset and network analysis of the data have been done with the help of Arc GIS software and its useful resources. The software used in the study is as follows:

- Arc GIS 10.1-Used for creating Geo-database, topology and network analysis of the data.

- MS Excel 2007- Used for making of attribute table of data collection through primary data and secondary data.

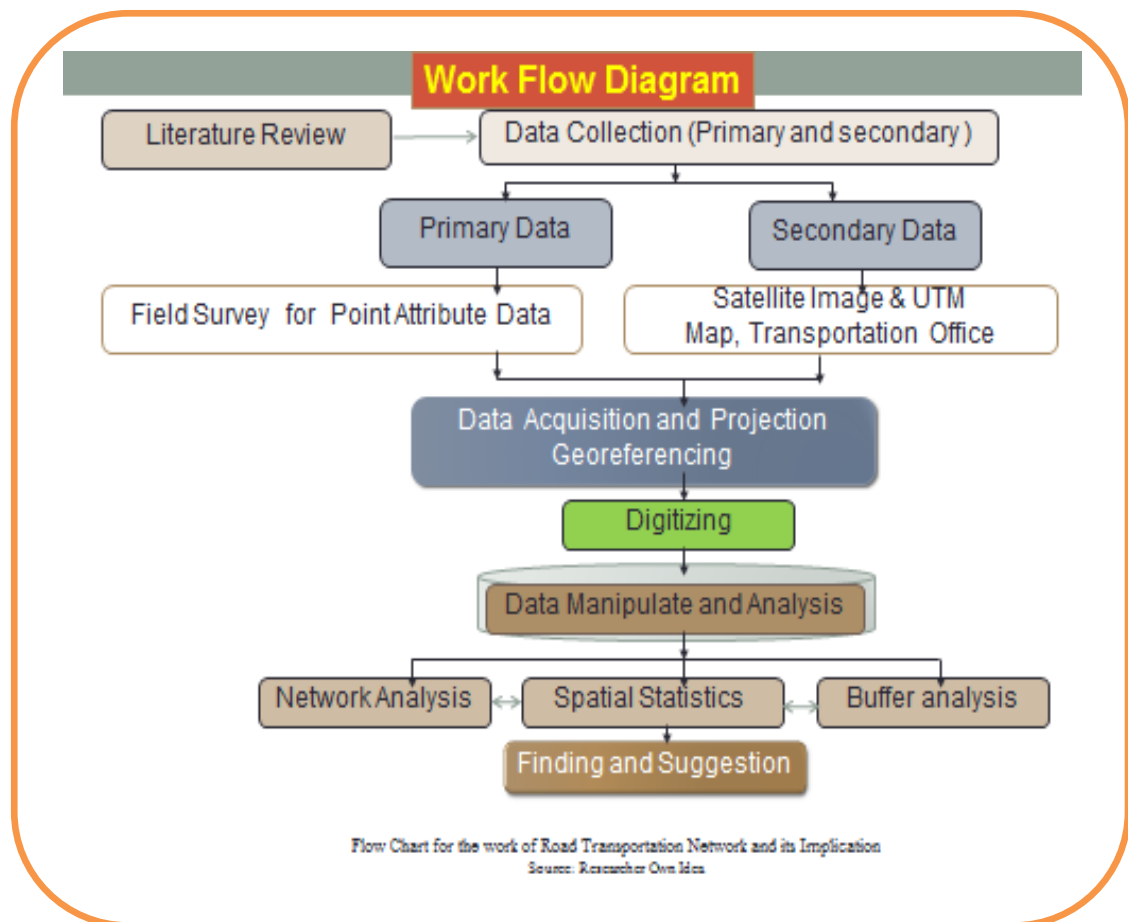
-MS word 2007- Used for write up of the Paper.

3. METHODOLOGY

In Arc GIS 10.1, it is possible to extract the region of interest (ROI). This ROI consist three types of features the first one is polygon feature and second one is line feature and final one is point features. The polygon feature represents the Thanlyin Town boundary, from this Boundary was extracted.

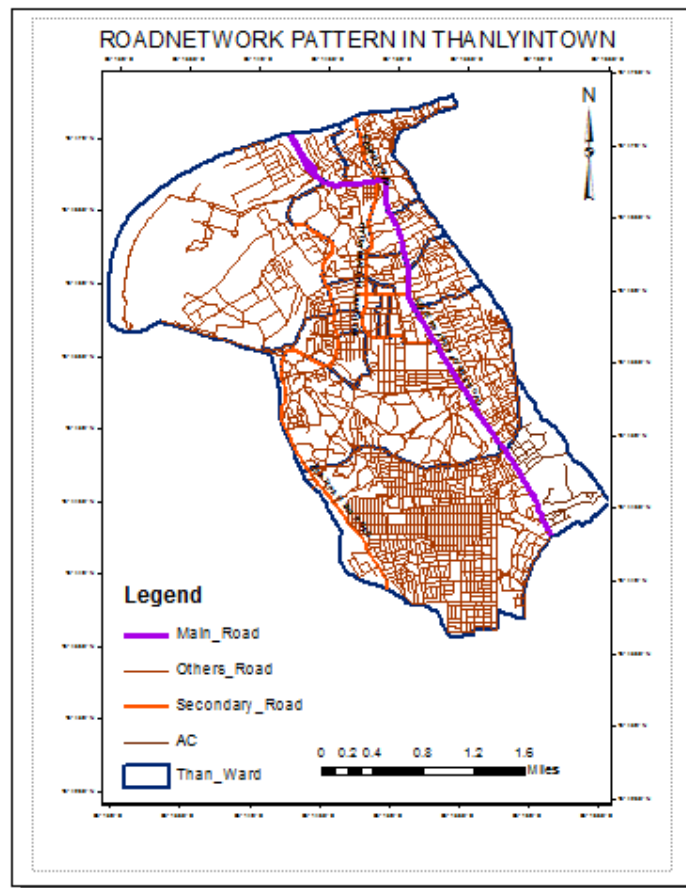
The line feature represents the Transport Network of Thanlyin Town. By using the Town boundary, the road transportation line feature were clipped and saved with a different name, so it shows only the Road Network which comes within the Thanlyin boundary and point feature is used for the location of bus stop shown in Figure (3.1).

3.1 Work Flow Diagram



3.2 Road Network Pattern in Thanlyin Town

The road conditions are involved selection, merge, symbolization, elimination etc. The road Transportation Network data having a category Road Type, like Main Road, Secondary Road, and Others Roads. By using this classification the selection process was performed Figure (3.1).



3.3 Create Feature Class

Feature Class for Geo-database is which helps to store and manipulate geographical data. Geo-database is a combination of two data sets. The single uses database is also known as Personal Geo-databases. A Personal Geo-database is a Microsoft Access database that can store, query and manage both spatial and non-spatial data.

The Geo-database is based on coverage and shapes file of road data structure. It supports user defined relationship among feature classes and personal geo-database. In addition to generic feature, such as points, lines and polygons, it can create custom features such as transformer, Pipes and parcels. These custom features can have special behavior to better represent real work objected. It supports a topology in a Geo-database, so it allows representing shared geometry between same features within a feature class and between different feature classes. In personal geo-database the following type's dataset can be created in Arc Catalog such as feature dataset, feature class, spatial data, and toolboxes.

The groups of related features are within feature datasets. Within feature datasets, like all feature classes have a same coordinate system. Also it is possible to create topology for each feature class of nodes patterns. Feature classes can be a part of geometric network dataset within feature datasets .It is possible to add new datasets like as Feature class, network datasets and road topologies structure.

After created the feature classes, the lines and polygons features were joined to get the attribute values by points got from field verification and another sources from UTM and Google Earth Image sources in 2014, by using spatial join tool in Arc Map.

3.4 Topology in Arc GIS

Topology is a collection of rules that, coupled with a set of editing tools and techniques, enables the geo-database to more accurately geometric relationships. It is the arrangement for how point, line, and polygon features share geometry. So it helps to validate and maintain better features.

Also topologies can be used for modeling spatial relationships between features. Using this technique it discovery easy for analytical operation such as checking the connected feature, A topology is stored in a geo-database as one or more relationships that define how the features in one or more feature classes. Topological data model manages the spatial relationships by representing the spatial objects like point, line, and polygon. The topology errors can be find outs and it is possible to fix or solves this error in Arc Map.

4. TRANSPORTATION NETWORK PATTERN

The transportation network is a realization of spatial network, describing a structure which permits either vehicular movement or flow of some commodity (Rodriguez, 2006). Examples are network of roads, streets, railways and, pipes, aqueducts, and power lines. One can distinguished land, sea and air transportation network.

Therefore, Transportation network also carries an important role as social & economical, environmental and commodities which cannot be neglected for Thanlyin Township. In Thanlyin, transportation networks are not improved for Aung Chanthar Ward than other areas within Thanlyin Town for studied period in 2017.

4.1 Road Generalization

4.1.1 Main Road

This road was subdivided into two parts. The study area passed through by two local Highways namely Yangon- Thanlyin-Kauktan and Yangon- Thanlyin-Thone Gwa and Khayan Road. Thanlyin-Kauktan road was first construction in 1926-27. Thanlyin Kyaik khauk Pagoda Metalled Road is 4 miles long and 14 feet in wide. It was also built since 1900, this road trend north south alignment, connecting with Kyauktan -Phayargon Road. It passes through the southern part of Thanlyin Town area and Phayargon village of Thanlyin Township It was built on lateritic ridge. In 1958-59 this road was one of the best metalled roads in Myanmar. YBS Bus route of No.31, 32,33,34,70 and 76 are operating on this road.

4.1.2 Secondary Road

There is two Secondary Road in the study area which passes through the center of the city. These are Bogyoke Nay Win Road and Thatipahtan Road. Total length of these Road is () kilometer.

There are five major roads in Thanlyin Township. There are as follows-

1. Thanlyin Kyauktan Road - 12 miles

2. Thanlyin Thonegwa Road - 13 miles

3. Thanlyin Thilawa Terminal Road - 6 miles

4. Thanlyin Thilawa lower Road - 2 miles

5. Thantay kwin Pagandaung Road - 18 miles

After the completion of Yangon Thanlyin Bridge in 1993, there were some newly developed roads connecting Thanlyin with Yangon City. Various public transport service buses, private vehicles and office vehicles use the Bridge for the trip between Yangon and Thanlyin. These Roads are tar, bituminous, metalled, earth roads and motorable in all seasons. The renovation, improvement and works maintenance works for roads were also carried out yearly as in the case construction.

Within Thanlyin Town municipal area, up to 2004-2005 nearly 40 miles of roads were constructed of these, there were 13 miles of tar roads, 5.5 furlongs of metalled roads, 9 miles and 5 furlongs of gravel roads and 16 miles and 5 furlongs of earth roads. The total number of roads is 163 roads. Roads also general maintenance and improve by Township councils, Town committees and municipalities and ward committees, with the public on self-reliance basis and on individual basis every year.

Similarly Thanlyin township municipalities, Village committee with the public on self-reliance have been extensively carryout construction activities in every village within Thanlyin Township. The total lengths of roads in village tracts area are 34 miles and 8.20 furlongs with the total number of 23 roads. These are 6.3 furlongs of the road, 1 mile and 6.3 furlongs of metalled roads, 2 miles and 0.9 furlongs of gravel and 30 miles and 1.65 furlongs of earth road.

The construction of new roads, the extension of the existing, upgrading, repairing and maintenance of the existing roads are being undertaken on above mentioned roads by Public works under the Ministry of Construction annually. Timely maintenance works carrying outs as the following:

- . Patching up the old road holes with mixed coal tar
- . Cutting out the grasses the beside of the roads
- . Digging up the gutters for the good drain, of the roads
- . Extension in width of some road
- . Upgrading from the roads to metalled of some road.

Railway- Rail transport between Thanlyin and Yangon first started in 1993. It is connected with one way to Yangon and another side separate into two branches.

4.2 Transport Network Planning

Generally Transportation Planning consists of various transportation networks. These networks can be road type (width of road), pavement management, traffic management and accident related data. The transport network structure should be redesigned for infrastructure improvements. These improvements may be creating to provide road width, lengths and parking areas (multi parking).

A network is a system of interconnected elements such as lines (Edges) and connecting junctions (Vertexes or points) which represent every possible route from one Junction to another Junction. From a feature class a network dataset is created but it is restricted that only one feature class can create only one Network Dataset Figure (4.3).

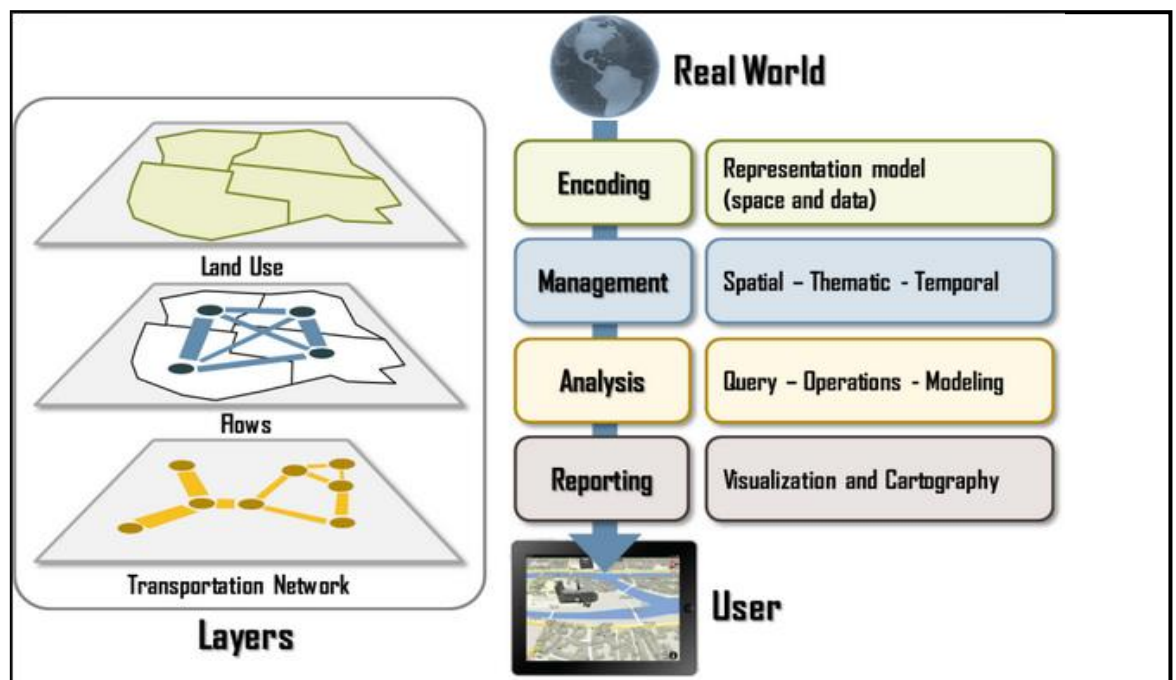
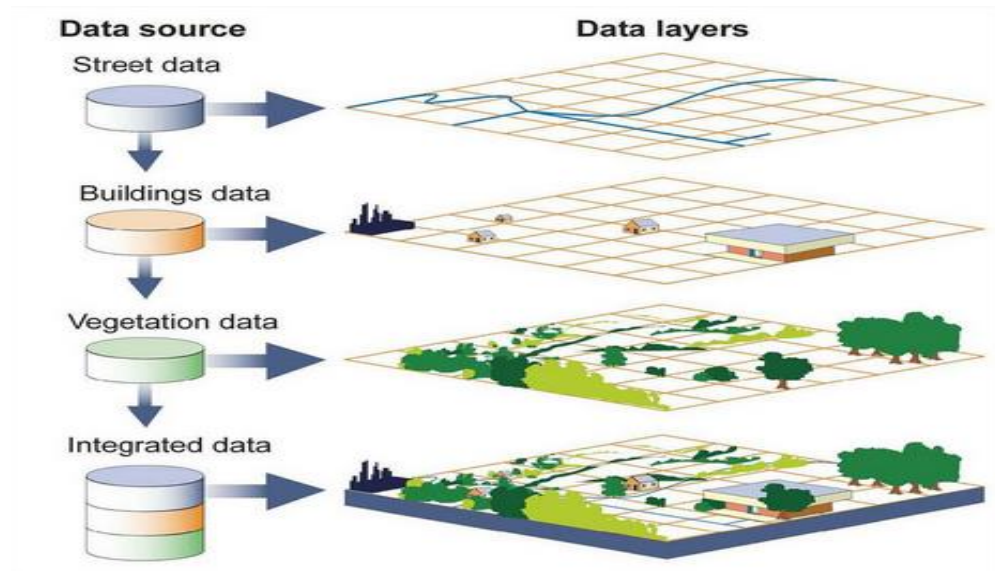


Figure (4.1) Model Building of Transportation Network

Source: GIS Reference Book

DATA STRUCTURE



GIS FOR ROAD NETWORKING

GIS Technology using for Road Networking comprehensively, also It could be identified through **Transport Infrastructure Life Cycle**.



Figure (4.2) Data Structure and Transport Infrastructure Life Circle
Source: GIS Reference Book

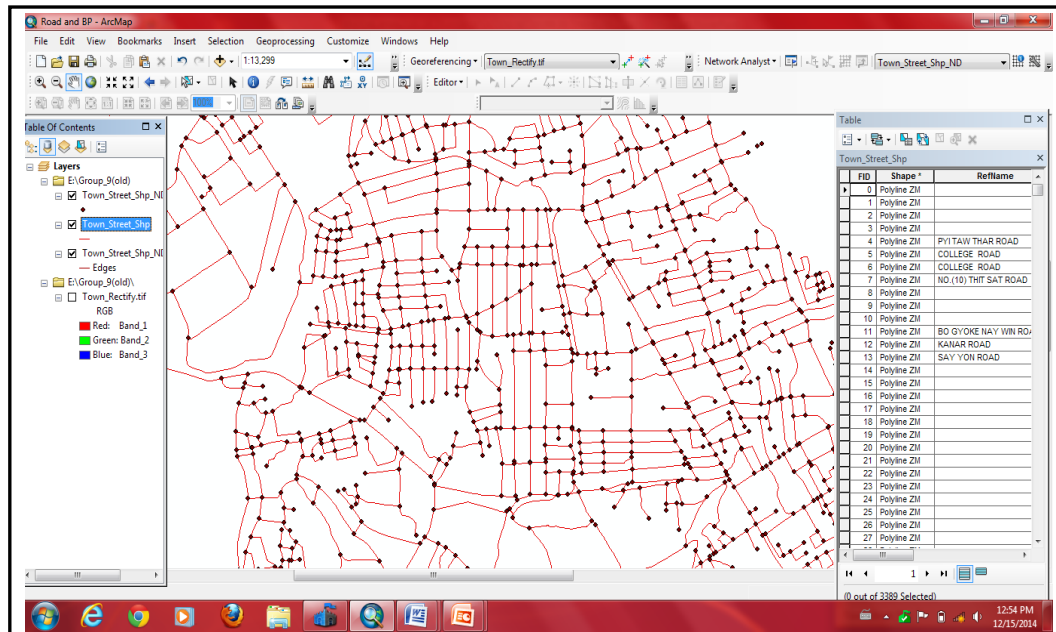


Figure (4.3) Building of Network Dataset
Source: Google Image 2016

4.3 Rationale for the Study Area

Transportation is one of the most important for human activities, transportations and commodities and it is a basic system of infrastructures. It plays a major role to spatial relations. Its importance factors for historical, social, political, cultural, economical, environmental and all spatial factors. It affects their environment as well as being detrimental to welfare, mobility, and socio-economic factors when transport systems are efficient, they provide economic and social, opportunities and benefits for all living society. When transport systems are efficient, they provide economic and social, opportunities and benefits for all living society (Rodriguez, 2006)

Therefore, Transportation network also carries an important role as social & economical and environmental load, which cannot be neglected for Thanlyin Township. In Thanlyin, Transportation networks are not improvement except Aung Chanthar Ward.

4.4 Network Pattern Analysis

The Arc GIS Network Analysis extension allows wanting the platform of network analysis. Then select to Network Dataset. Once the Network Dataset has been created then open Arc Map to perform Network Analysis After creating a Network Dataset will get a Total number of Lines and Total number of Junction (Nodes) shows a total number of Edges and total number of Vertex. A transport network is used for transport analysis to determine the flow of vehicles (or people) through it within the public transport services. It may combine different modes of transport services of vehicles and commodities flow.

A network is a system of interconnected elements such as lines (Edge) and connecting junction (better or points) which represent ever possible route from one junction to another junction form a feature class a network dataset is create but it is restricted that form only one feature class can create only one Network Dataset. The Arc GIS network analyst extension allows building a network dataset and performing analysis on a network dataset.

Generally Transportation Planning consists of various transportaton networks. These transportation networks can be road type (width of road), pavement management, traffic management and accidents for related data.

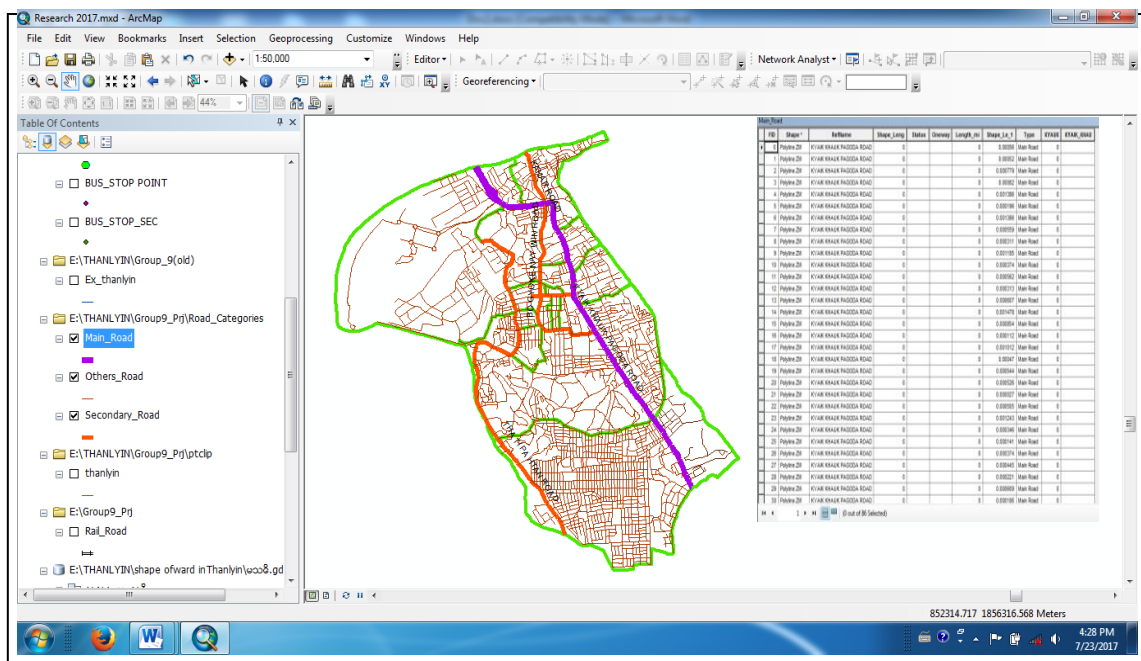


Figure (4.4) Road Network Pattern in Thanlyin Town
Source: Digitizing from Base Map (UTM)

The use of GIS& RS technologies in development of urbanization, transportation system and management for urban planning can provide a very strong solution. The topology structures are related to transportation network is used to the efficient planning, designing, construction, maintenance and management of the transport system. In the study area, Thanlyin Town Transportation Network consist a Main Road (Bago- Tha Nut Pin- Khayan- Thone Gwa- Kyauk Tan Road), Secondary Road (Bogyoke Nay Win Road) shown in Figure (4.5).

Transport Network plays a vital role in the growth of urban center and economic development of a region. It is also found that there is a positive relationship between urbanization and good transport network. The study area has Main Road, Secondary Road and Other Roads on the road pattern model of private creation from the base of Google image and UTM map.

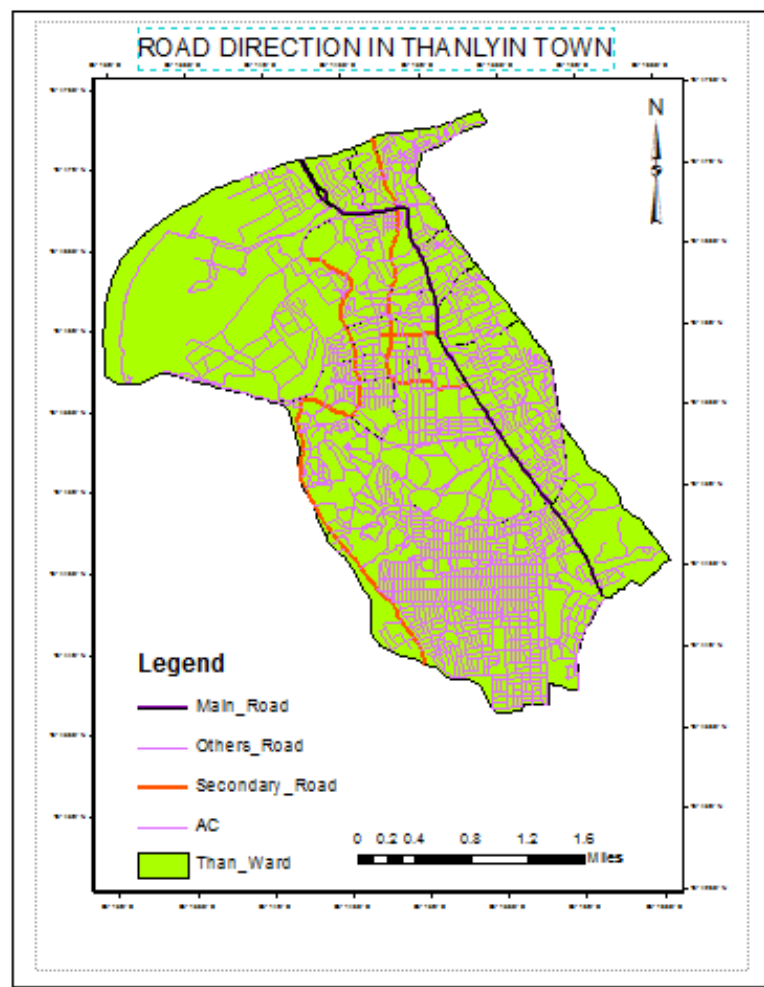


Figure (4.5) Road Direction in Thanlyin Town
Source: Private Creation from

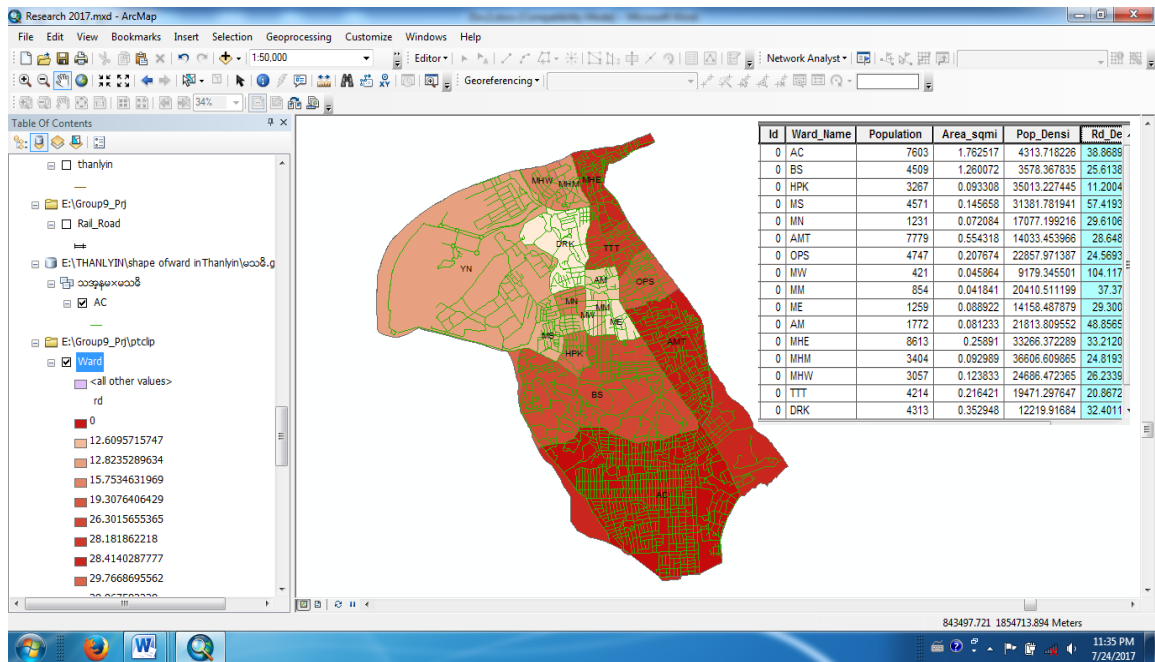


Figure (4.6) Road Density Analysis in Thanlyin
Source: Base from Google Earth Image (2014)

4.5 Road Density

A network is a system of interconnected elements such as lines (Edge) and connecting junction (points) which represent ever possible route from one junction to another junction form a feature class a network dataset is create but it is restricted that form only one feature class can create only one Network Dataset.

The Arc GIS network analyst extension allows building a network dataset and performing analysis on a network dataset. Firstly, in this paper summarization of Ward length and then the calculation of road density focus on for the (17) Wards. By the calculation, the highest Road Density Ward is Myothit West and Yae Nan Ward is lowest road density. Myoma Ward is located in the central part of the study area and also the center of economics activities. In this method, the highest density of road is overlapping in the central part of the town, especially found in the Myoma Ward area.

The Road Network density is used to measure s the Network Development. So, another way of road density is represented by mathematically as Equation

$(RD = L / A)$, where (L= total length a network, A = total area of network),
 $9.712 \text{ Km} / 20.54 \text{ Sq Km} = 0.4728 \text{ m} / \text{sq. km}.$

This index value shows good condition of Transport Network. The study area of Thanlyin Town has (17) Ward, the area and total road length of this Zone is calculated in GIS, and Road density is shown in the Table (4.1).

The Road Density of Town given bellow;

$$RD = l / A$$

Where l = total length of network

A = Total Area of network

Table (4.1) Road Density by Ward

FID	Shape *	Id	Ward_Name	Population	Rd_Den
0	Polygon	0	AC	7603	38.868933
1	Polygon	0	BS	4509	25.613818
2	Polygon	0	HPK	3267	11.200418
3	Polygon	0	MS	4571	57.419365
4	Polygon	0	MN	1231	29.610685
5	Polygon	0	AMT	7779	28.64825
6	Polygon	0	OPS	4747	24.569309
7	Polygon	0	MW	421	104.11732
8	Polygon	0	MM	854	37.3779
9	Polygon	0	ME	1259	29.30012
10	Polygon	0	AM	1772	48.856587
11	Polygon	0	MHE	8613	33.212047
12	Polygon	0	MHM	3404	24.819388
13	Polygon	0	MHW	3057	26.233966
14	Polygon	0	TTT	4214	20.867246
15	Polygon	0	DRK	4313	32.401168
16	Polygon	0	YN	2497	10.806413

Source: Calculation with GIS Software

Transportation routes and service areas are used to solving a route of transport problems. That can mean finding the quickest, shortest, or even the most scenic route, depending on the impedance choosing to solve for events. If the effective resistance is time, then the best route is the quickest route. For example, when incidence occurs in the Myo Houn East, Myoma and Aung Chanthar, shortest path analysis are applied for the hospital and these three areas. Figure (4.7)

A network service area is a region that encompasses all accessible streets. Some streets are within specified effective resistance. For good transport network of

area, concentric service areas are needed to show how accessibility varies with effective resistance within area. Therefore, good transport site areas are chosen as a new service area for bus stop point area including of around Aung Chan Thar Ward, in Thanlyin Town. Because of Aung Chan Thar Ward is more increased of population distribution than other area and then the road patterns are systematic in Thanlyin Town. From above facts, Aung Chan Thar Ward may be a new services area as a finding. Figure (4.8)

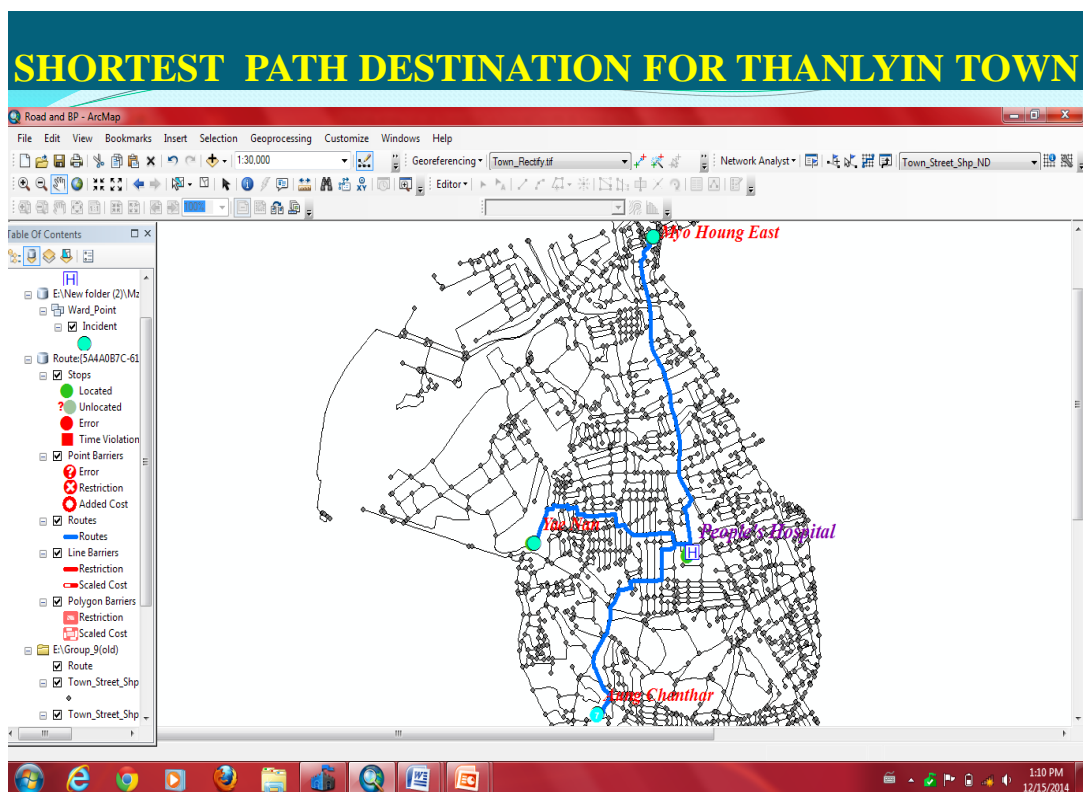


Figure (4.7) Shortest Path for Thanlyin Town
Source: Google Earth Image in 2014

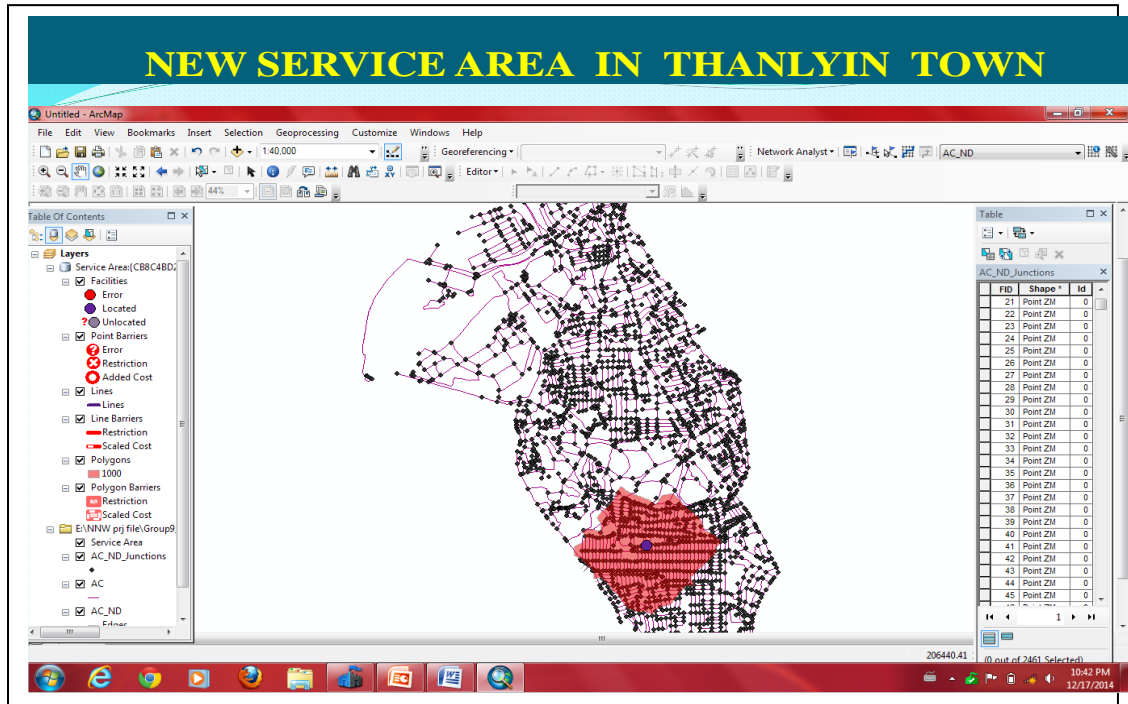


Figure (4.8) New Service Area in Thanlyin Town
Source: Own Creation by Network Analysis

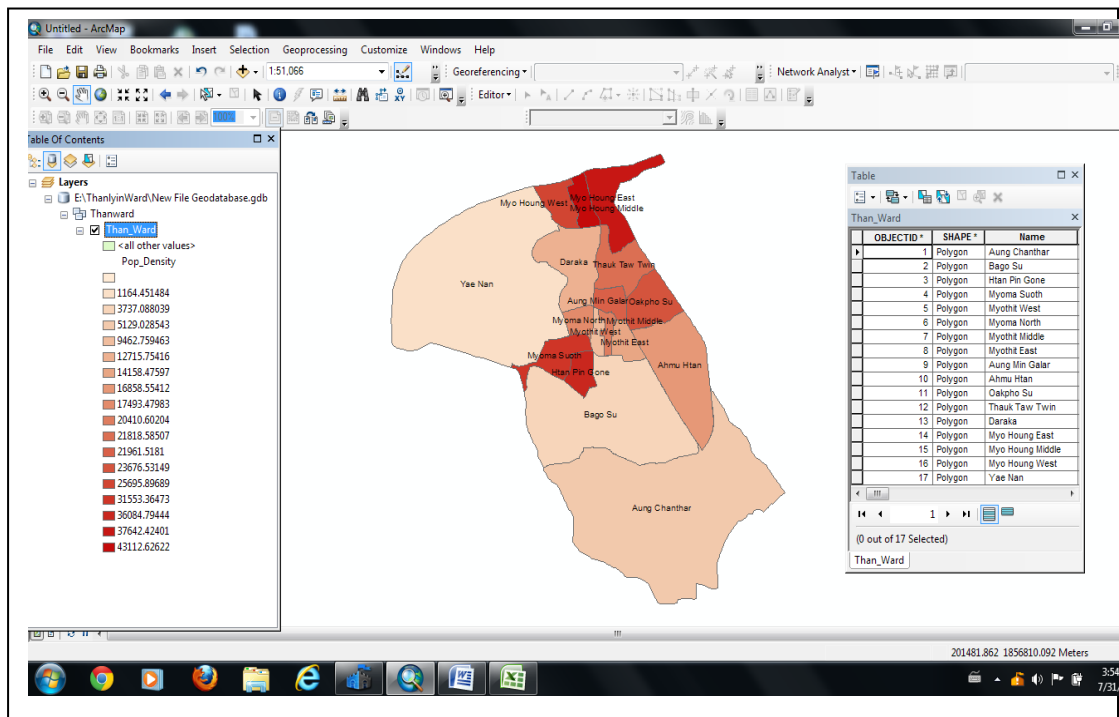
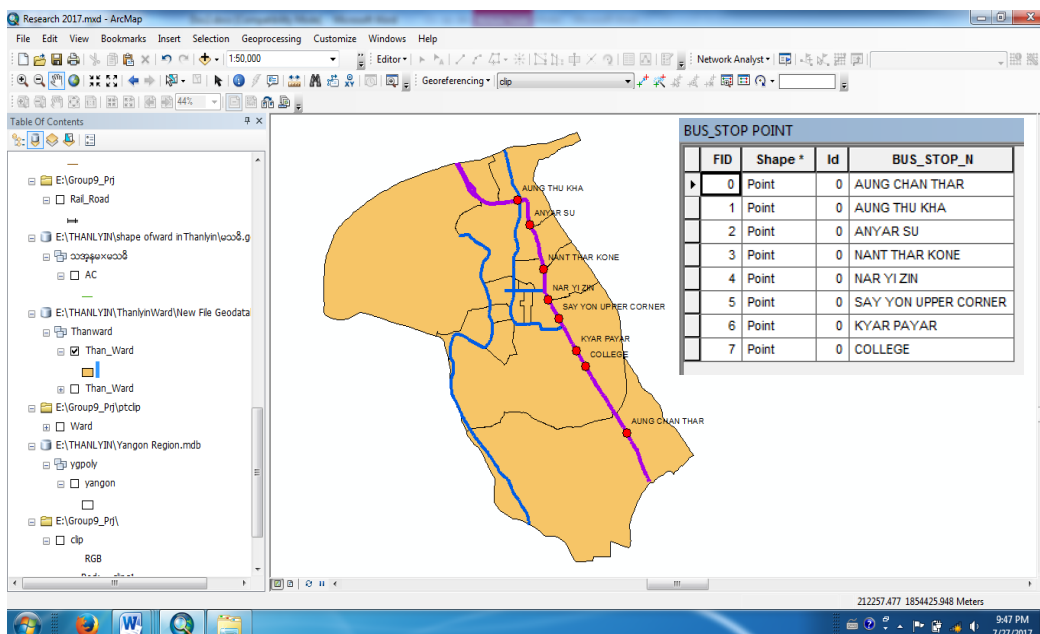
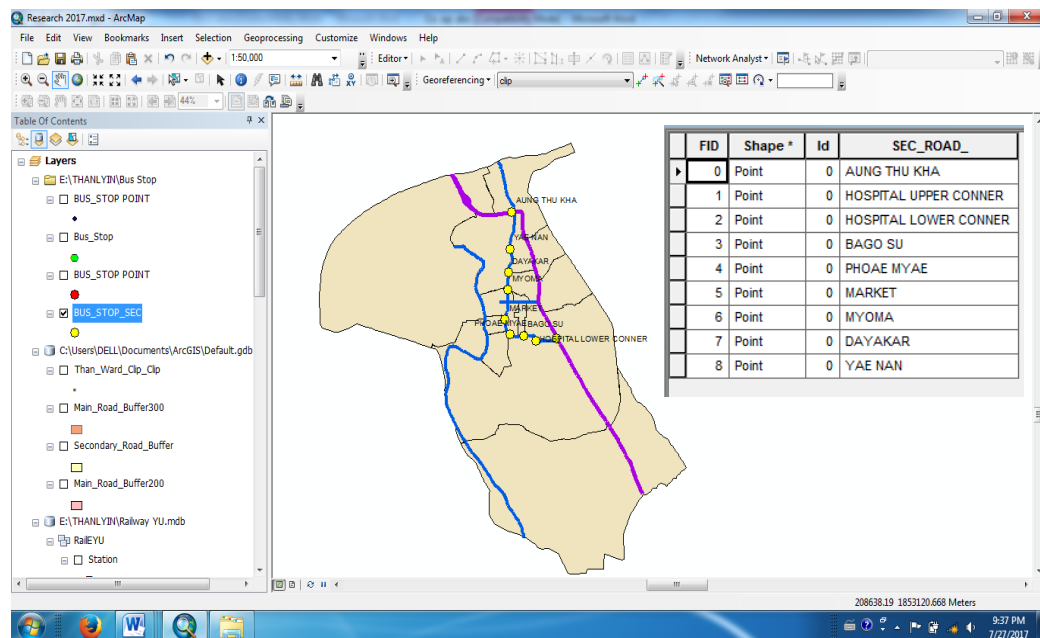


Figure (4.8) New Service Area in Thanlyin Town
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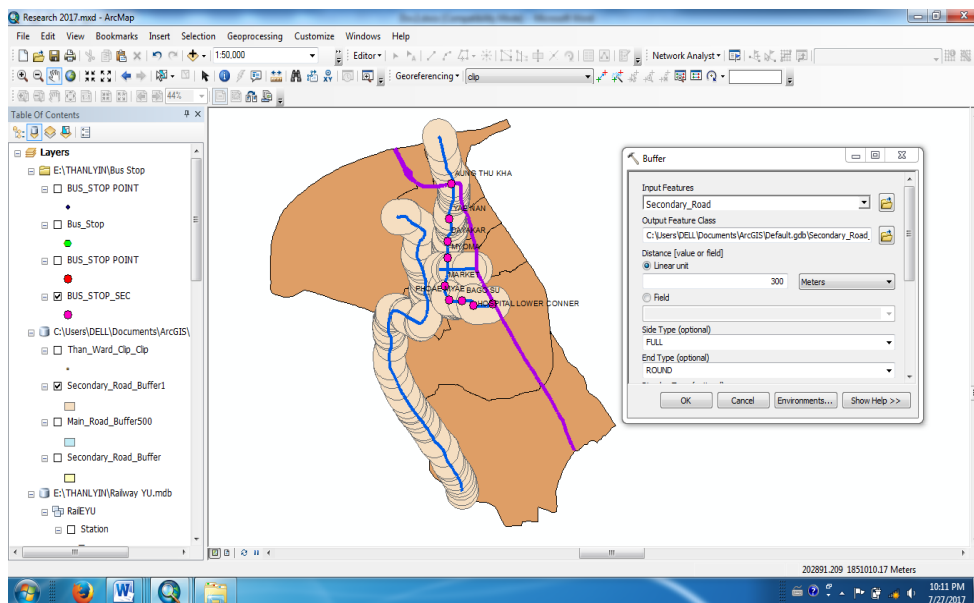
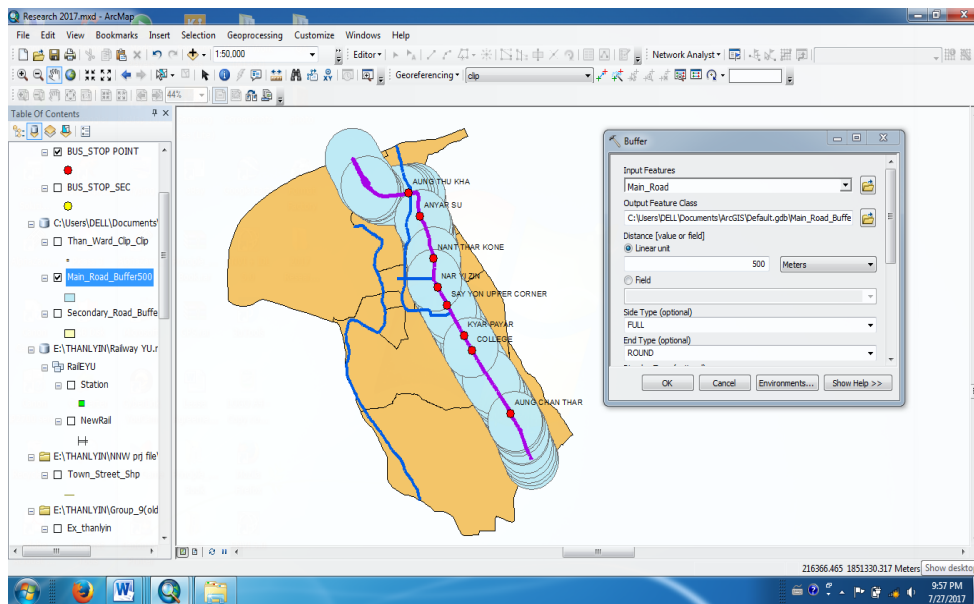
4.6 Bus Stop Condition

In the study area of Thanlyin Town which can be classified into three main types of road network pattern. They are main road, secondary road and other road. Main road is alignment with the nearly north east-south west. The secondary roads are Bogyoke Nay Win Road, Thauk Taw Twin Road and Tha Ti Pa Htan Roads. Bus stop points are not on other roads within Thanlyin Town. There are (16) Bus Stops in the study area. Eight bus stops have located along the main road and other eight bus stops have situated along the Bogyoke Nay Win road (Secondary Road). Only the Bogyoke Nay Win Road used for the Public Bus Line Transportation Services. Predominantly uses of bus stops are Aung Thu Ka, Myoma and Aung Chan Thar points.



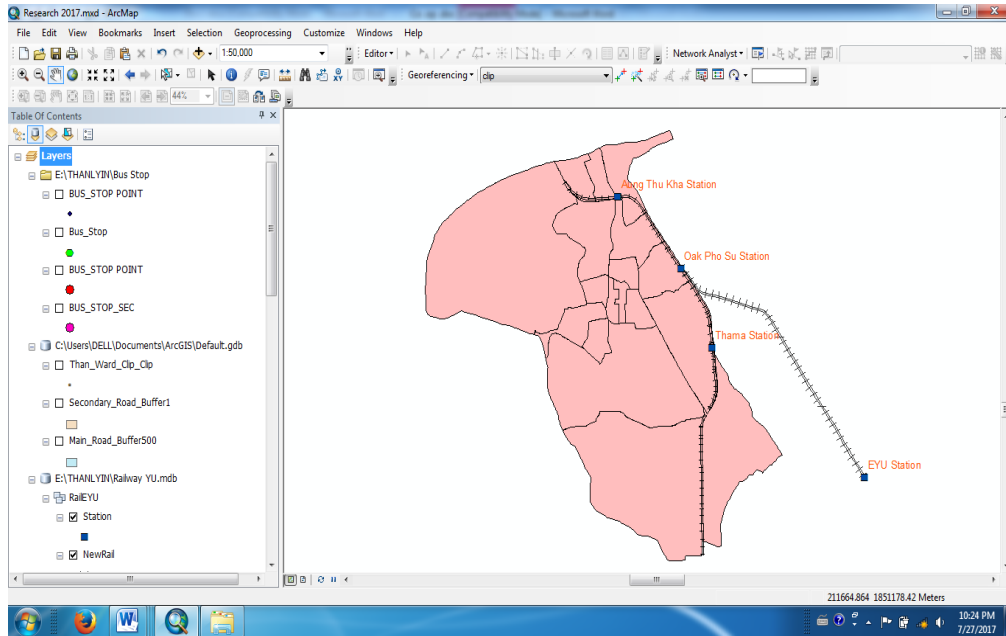
4.7 Buffer Analysis

In this paper, Buffer Analysis is calculated in Thanlyin Town for main and secondary road. This main road emphasis on using with linear distance unit (500) meters of Buffer Analysis for coverage of the Bus Stop location except between Aung Chan Tha bus stop and Thama University bus stop within the Study area. And also the secondary road, emphasis on using with linear distance unit (300) meters of Buffer Analysis for coverage of the Bus Stop location.



4.8 Railway Transport

The railways station within in Thanlyin Town is connected with Toe Kyaung Lay in the Yangon Region and Thilawa port in Thanlyin Township. There is one railway by around the railways transport in Yangon Region. The lengths railways are about (3) miles within the town area.



5. Network Connectivity Analysis

5.1 Nodes and Linkages

Transportation networks can be represented by a series of nodes (Vertices) and linkages (a set of edges). Nodes may be the origins as destinations of flows and they are points as which flows in the network can change their volume, direction of movement and mode of transport. They range in size and complexity from a road junction to a major international port. Links or edges are any behind of connections between these nodes (Vertices) and linkages (a set of edges).

To analyze the road network of Thanlyin Town, every start points or end points of any routes is defined as nodes(vertices) and the roads these connect these vertices are termed as edges (linkages). According to this identification are 2460 vertices and 3744 edges in road network of Thanlyin town.

Beta Index

The Beta Index is ratio of the number of edges to the number of nodes. It is more useful for simple network where no circuits are involved. If the value is 0.0 it means there is just nodes without any arc. Its value ranges from 0.0 to 1.0 and greater, where network are well connected. The Beta Index's equation is as follows,

$$\text{Equation: } \beta = V / E$$

Where

E = No. of edges (Line)

V = No .of Vertex (Node)

Alpha Index

Alpha Index is a ratio of circuits to the number of maximum possible circuits in the network its value ranges from 0.0 to 1.0. If the value is 0, then it indicates no circuits; and if the value is 100 percent then it indicates complete interconnected network.

$$\text{Equation; } \alpha = E - (v+1) / 2v - 5$$

Where

E = No. of edges (Line)

V = No .of Vertexes (Node)

Gamma Index

The Gamma Index is a Ratio of actual number of edges to the Maximum possible number of edges in the network its value ranges from 0.0 – indicates no connection between nodes, to

1.0 –maximum number of connection with direct link to all nodes.

The Gamma Index's equation is as follows,

$$\text{Equation: } \gamma = E / 3(v - 2)$$

Where

E= No. of edges (Line)

V = No .of Vertexes (Node)

So, the calculation of the study area for each ward by the Index of Alpha, Beta and Grammar are shown in Table (5.1).

Table: (5.1) Calculation of Indices for Each Ward

CALCULATION OF INDICES FOR EACH WARD						
+NO	WARD	Edge (E)	Vertices(V)	β index	α index	γ index
1	AC	1405	2460	0.5711	-0.215	0.1905
2	BS	554	474	1.1687	0.0842	0.3912
3	AMT	377	304	1.2401	0.1204	0.4161
4	YN	303	234	1.2948	0.1484	0.4353
5	MHE	180	142	1.2676	0.135	0.4285
6	DRK	163	138	1.1811	0.0902	0.3995
7	TTT	126	103	1.2233	0.1122	0.4158
8	MS	120	95	1.2637	0.1333	0.4301
9	OPS	111	91	1.2197	0.1104	0.4157
10	HPK	77	68	1.1323	0.0634	0.3888
11	ME	61	48	1.2708	0.1395	0.442
12	AM	57	47	1.2127	0.1071	0.4222
13	MHW	45	39	1.1538	0.0735	0.4034
14	MHM	43	40	1.075	0.0285	0.3771
15	MN	43	33	1.303	0.1607	0.4623
16	MW	41	30	1.3666	0.2	0.488
17	MM	39	28	1.3928	0.2173	0.5

Source: Calculation

By the showing of table (5.1), Myoma Middle Ward is the highest connectivity of Index and Aung Chanthar Ward is the lowest connectivity Index. And then The whole town of connectivity indices (β , α , γ) are shown by the calculation as follows;

Where; E = Edges, V = Vertices

Beta Index = E/V ,

By the formula,

$$\beta = V / E = 2460 / 3744 = 0.65710$$

Alpha Index,

$$\alpha = \frac{E - (V + 1)}{2V - 5} = \frac{3744 - (2460 + 1)}{2(2460 - 5)} = \frac{1283}{4910} = 0.2613$$

Gamma Index,

$$\begin{aligned} \gamma &= E/3(V-2) \\ &= 3744 / 3(2460 - 2) \\ &= 3744 / 7374 = 0.5077 \end{aligned}$$

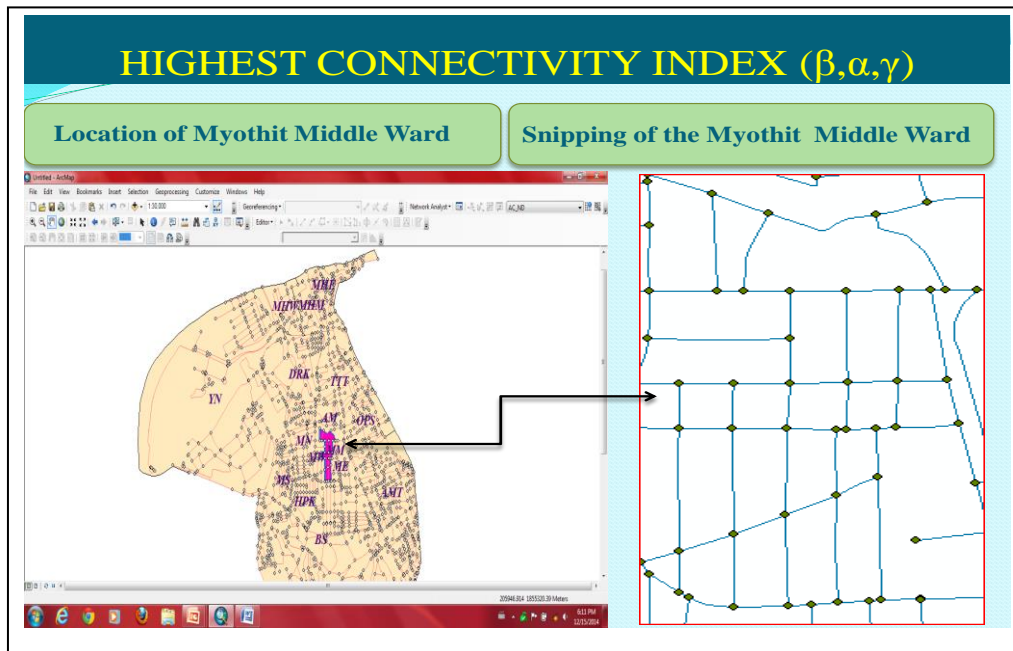


Figure: (5.1) Highest Connectivity Index of Myoma Middle Ward Snipping Tools
Source: Google Earth Image in 2014

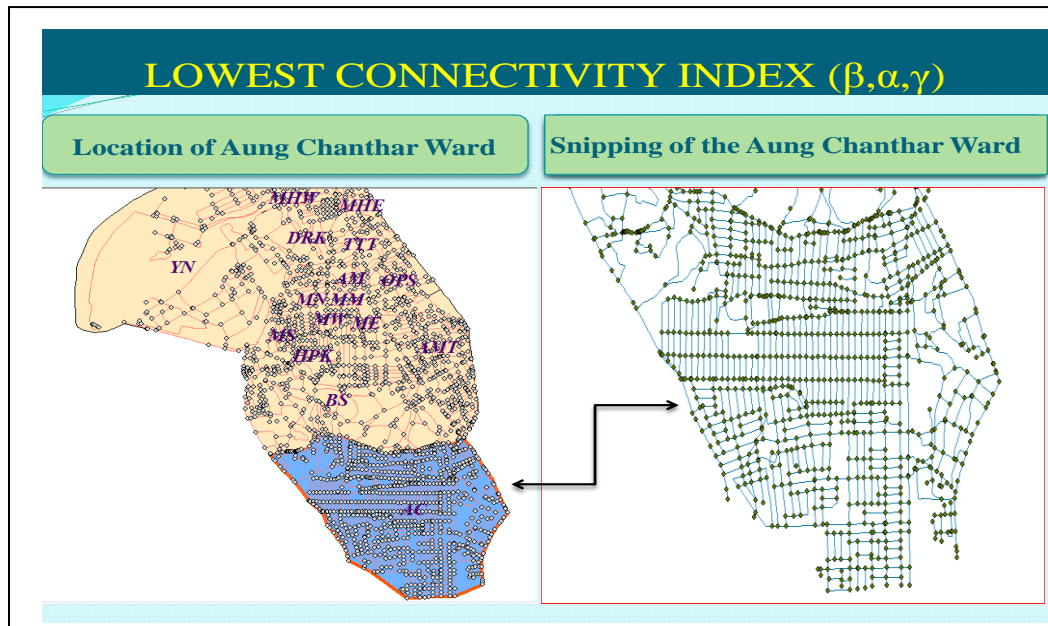
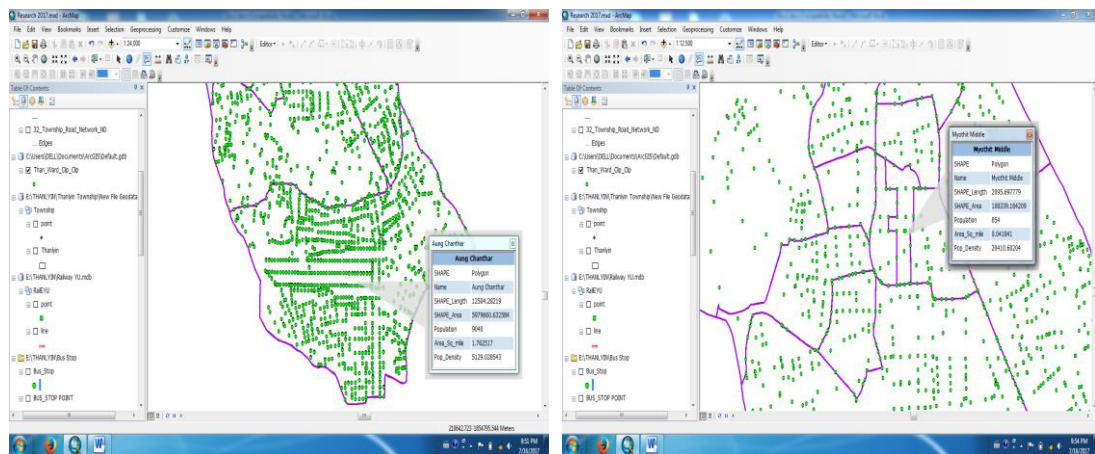


Figure: (5.2) Lowest Connectivity Index of Aung Chanthar Ward Snipping Tools
Source: Google Earth Image in 2014



FINDINGS AND SUGGESTIONS

The main findings of this research, according to the Buffer analysis will be provide to main location of coverage for Thanlyin Town. Total lengths of the road are 6.07 miles (9.712 km) in 2014. This connectivity is provided to a characteristic of transportation network structures and infrastructure facilities. Thanlyin Town's connectivity indexes $\beta = 0.66$ are well connected to topology structures, circuits $\alpha = 0.26$ are not bad conditions and nodes $\gamma = 0.51$ are medium value number of connection with direct link to all nodes for the Thanlyin Town.

These relationships seem between Town and Ward connectivity for the Thanlyin Town. The findings of highest values are found in Myothit Middle Ward and the lowest value are found in Aung Chanthar Ward from the above facts. The greater accessibility of nodes, the more value of connectivity indices, goods and passengers will be flow as a indicator for the transportation network in the near future.

The road infrastructures are one of the indicators to measure the transportation network development. Due to the existence of upgraded main road and secondary road, local inter & extra road and earth road for higher connectivity structures and roads, economic standards of commodities flow and the increase number & quality of bus types for Thanlyin Town.

On the Other hand, 'Yae Nan' Ward has a *largest area* and *lowest population density* and *lowest road density*. Myoma (N/S) Ward has the *highest population density & largest road density area*. Although bus stop stations are not enough because of bus stop station is only one in Myoma (N/S) ward. Therefore, new bus stop station should be created in ***Aung Thukha, Myoma Market and Aung Chanthar Ward*** for as Multi Bus Line Services Area and predominantly uses of customers as a finding.

Generally, dispersed settlements are settled by nearest neighbor area through tThanlyin Town. Travel costs are also the factors affecting development in public transportation for passengers. Therefore, road infrastructure development affects provide to traveling pattern of local people as well as people who are living in neighboring areas. If the roads will be improved & upgrade in Thanlyin Town as new service area, transportation network would be better in current situation than before.

On the other hand, cost per mile decreased for travel distance but need to trace for long term study. After, Thanlyin Town will be improvement in the near future.

If the new bridge and new roads, connectivities provide for better accessibility, these will be increased the flow of passengers and freight tons. Nowadays, the products are being carried by public and private car passing through the Thanlyin and Yangon Road. Therefore, the role of road transportation facilities need to increased for in the near future.

From the above facts, consequences of road infrastructures and good transportation networks necessary to increase of Gross Domestic Product (GDP) for Thanlyin Town from transportation services. These effects of transportation and communication facilities, commodities flow, the conditions of wholesales and retails in trade, introduce to industrial zone and agricultural activities will be created for improvements of the Thanlyin Town from this public transportation network research. The findings of the research survey based on Thanlyin Town are reported in December, 2014.

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(Research Scholar)

**Assessment of Health Impacts of Water Pollution in Hlaing Tharyar
Industrial Zone:
A Case Study on Yay Oakkan Village Group**

By

Daw Hay Mar Nyi Nyi

Abstract

This study aims to expose and provide to be able to reduce the health impacts of impurity water and wastewater disposal mainly by industries in Hlaing Thar Yar Industrial Zone. Specifically, the study aims to evaluate the level of awareness of the health problems among the people who suffer from the water pollution caused by the industry. The research method is mainly inferential statistical method based on the analysis of current situation of the village. Primary data are collected in the village to highlight the current level of the village by using the systematic sampling method. The findings show that the residents suffer from the (22) diseases and face the problems which does not get the sufficient clean water for their daily use due to the households survey. In accord with the water test, it is found the parameters which can harmful the human health such as turbidity, ammonia-nitrogen (NH₃N), Cyanide, alkalinity, iron and chloride mainly in the Tube-well water (90 feet). The diseases of dizziness, headache, fever, diarrhea, skin problems, asthma, nausea, typhoid, cholera and cramp are mostly related to the Tube-well water (90 feet), diseases caused by industry and distance of water sources from the industry and they can explain about (74%) of the variation in medical expenses. The results of the study can be used by policy makers and the implementation bodies involved in water pollution management and getting wholesome water for the villagers.

1.0 INTRODUCTION

1.1 A Brief Background History of Hlaing TharYar Township

Hlaing TharYar Township was established in 1985. Hlaing TharYar Township has an area of 26.01 sq miles and it is an administrative area of Northern Yangon Division. This township is situated on the west bank of Hlaing River, and it is surrounded in the east by Insein Township, on the west by Htantapin Township, on the south by Twantay Township and Panhlaing River, and in the north by ShwePyitha Township. There are 20 wards, 9 village groups and 18 villages in Hlaing Thar Yar Township.

Industrial zones have been established in HlaingTharYar Township since 1995. Now, the total number of factories is 588 in industrial zones. The industrial zones had been carried out by the Management Committee, which was formed on 24.7.1996 and maintenance fees are collected Ks.10000 for per acre / month from local investors and USD 50 for per acre/month from foreign investors.

1.2 Population

In 2009, the total population of HlaingTharYar Township is 340876, people that 164152 are males and 176724 are females. It has 55826 households and 73349 families. There are 340778 Myanmar nationals and 98 foreigners in this township. Myanmar nationals living in the township are Kachin, Kayah, Kayin, Chin, Bamar, Rakhaine, Shan and other nationals. Majority of people in the township are Bamar with 323497 people making up the 94.9% of the total population of the township, the second largest nationals are other races, 11222 people making up the 3.3% of the total population of the township, the third largest number of people is Kayin, 2739 people making up the 0.8% of the total population of the township. There are 23 Chinese 23.5% of the total numbers of foreigners living in the township: 73 Indians are 74.5% of the total number of foreigners living in the township. 2 Pakistanis are 2% of the total number of foreigners living in the township; Among them, there are 329371 Buddhists, 96.6% of the total population of the township; 7280 Islam, 2.7% of the total population of the township; 5399 Christians with 1.6% of the total population of the township; and 2652 Hindus with 0.8% of the total population of the township; 3452 Islam with 1.0% of the total population of the township.

1.3 Occupation

In HlaingTharYar Township, people earn their living by working as day and night shift workers in factories. There are businessmen, farmers, and general workers.

1.4 Research problems

HlaingTharyar Industrial Zone is bounded by Hlaing River in the east, ShweThanLwin Industrial Zone in the west, Pan Hlaing River in the south and Yangon Patheingyi Road in the north. It was established on 15th February 1995. The objectives of this Industrial Zone are (a) to create job opportunities and increase incomes of the people in the region, (b) to further enhance the social and economic development of national economy, promoting local and foreign investment and technology through industrial sector.

The total area of land is (1401.98) acres and (1087.98) acres has been used as the Industrial area. There are (588) operating factories in this Industrial Zone. There are different types of factories such as Garment, Food-Stuff, Toiletry, Construction Materials, Electrical Goods, Forest Products, Chemical Products, Press-related, Machinery Parts, Cold Storage, Grain and General.

These industries have not only exploited the natural resources to their maximum but also the discharge of toxic effluents and emissions from harmful industries have also polluted the surrounding environment. Water is one of the most important industrial materials required in the manufacturing process, and so many industries are established around the water bodies. These industries pollute the water resources by discharging toxic effluents causing health hazards to living beings.

Water is the basic and primary need of all living processes. Water pollution is one of the serious problems for beings. Waste waters can be contaminated by feed-stock materials, by-products, product material in soluble as particulate form, washing and cleaning agents.

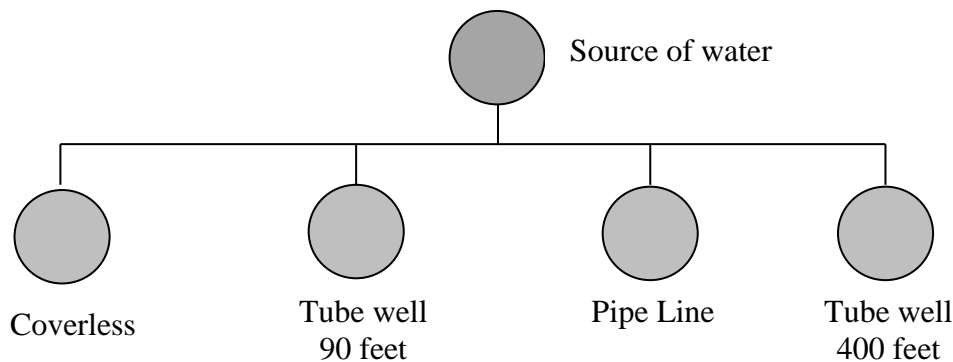
The shape of the HlaingTharYar Industrial Zone is in square shape and there are totally four villages near the zone. Two are outside the zone and another two are inside the zone. There are over (40) streets in the whole zone. Each street has (2) ditches which length is over two miles at left and right

side. These ditches are being used for (588) factories to dispose their wastewater. So many gallons of wastewater are disposed daily through these ditches.

In HlaingTharYar Industrial Zone, the Zone Management Committee which was formed on 24th July 1996 has to carry out for the development of this Industrial Zone. Since establishing this zone, the responsible body did not serve the exact direction, laws and regulation for disposing wastewater and treatment for the water. So, all the factories except a few factories which obey the international standard have to dispose their wastewater themselves arbitrarily and they do not cost extraordinarily for their water treatment. Besides, no one knows exactly how much the volume of wastewater releases from these industries daily.

Although many areas are suffered from the health impacts caused by impurity and wastewater disposal from HlaingTharYar Industrial Zone, this study is focused on Yay Okkan Village Group in HlaingTharYar Industrial Zone which was selected for three reasons. Firstly, this area is suited in the center of Industrial Zone. Secondly, there are no proper sewage and drainage system which can expose the waste-water from the factories in this area. Thirdly, there is no sufficient clean water for drinking and other uses.

Yay Oakkan Village Group is situated beside Yangon-Pathein Highway, between HlaingTharYar Industrial Zone (3) and (4) in the North of Pan Hlaing River. The area of this village is (1.64685) square miles. The two villages: ThaungGyi Lay village and Yay Oakkan village consist of this village group. The total population is (41759) people and there are (4410) households and (2829) houses. Their main occupations are factory workers, vendors, trishaw drivers, manuals and small retailer shops. Most of the people are low-income group and according to the villagers' income level although it is divided into four main sources of using water, the pipe-line water, the tube-well water (90 feet) , the tube-well water (400 feet) and the coverless lake water, most of the people have to use the tube-well water because water supply supported by the government is not enough for all villagers. Moreover, the two-third of the population who is low-income group, can't use the pipe-line water sufficiently because of it is more expensive than the tube-well water and the cost of this water has been increasing year by year. So, those people have to use mainly the tube-well water (90 feet) for their water sources.



Before 1997, the water source of this village, a tube well of 90 feet depth is not suitable for the human health because of its geographical situation and this water naturally contains iron, calcium and salinity. So, they have to rely on not only tube-well water but also other water sources for their livelihood. Before 1997, there were about (2000) people in this village and they could also get the water from two natural lakes. The water from these two lakes could provide enough water for their daily use.

According to the saying of the local villagers who have lived in this area before industrial zone and the members of Community Peace and Development Committee, after the establishment of the industrial zone, urbanization has been taken place and there is over population, causing the depletion of one of the lakes for drinking water. Urbanization also causes the degrading of water quality for consumption. However, not only pipe-line water can't be sufficiently supported to the required water for the whole area but also the villagers are to buy with money. Because of the government does not supply the pipe-line water to the villagers directly. The government directly supplies the water to the factories which has been officially allowed to use and the villagers have to pay fees through these factories. So, low income people can only rely on the pipe-line water for their drinking and they use the tube-well water for their other uses.

Besides, the villagers also suffers from water pollution because of the factories in the Hlaing Thar Yar Industrial Zone dispose the waste water, chemical and other byproducts into the small creeks and the Pan Hlaing River.

There are about (170) various kinds of factories around the Thaunggyi Lay Village Group and they are around this village track. Some of the factories such as chemical factory, dying factory, detergent powder factory, cold storage factory and so on are disposing their wastewater unsystematically through the ditches around them into the Pan Hlaing River.

Especially, one of the dyeing factories in this area disposes hot wastewater volume of (10000) gallons daily. This wastewater includes color, acid and chemical according to the testing of Yangon City Development Committee.

Some villagers who live near this dyeing factory have to walk in this water and they suffer from the skin problems. Although there are ditches with the depth of (12) feet for releasing the wastewater from various industries, the wastewater can't flow easily due to the bad drainage system. Then sedimentation up to (11) feet occurred which makes the flow worse. Another problem is the depletion of Pan Hlaing River since 2010. Because of these two problems, the wastewater can't flow quickly into the Pan Hlaing River.

In this village track, water pollution has been growing after 2008 caused by the rapid population growth and industrialization. Before 2008, there were (10) tube wells in this village group, (5) tube wells can be used for drinking water. But after 2008, the more factories were established, the more the volume of water disposed by various industries.

These effects of waste water disposed increased from industries can impact the tube-well water in this area indirectly because the color, taste and smell are gradually getting worse and worse compared to the situation in 1997. In the wet season, the color and smell of water significantly changes and it is not suitable for their daily use. So, the villagers suffer from the infection of cholera, diarrhea, typhoid, skin problems and others infectious diseases caused by impurity of water and disposed wastewater.

Based on the results mentioned above, it is hoped that our study would provide strong evidence to justify the dire necessity of support to get clean water cheaply for the people living in this area. Because they have to incur the health costs that are caused by coming into contact with contaminated water if they do not get the clean water in the long run. This study can be used by policy makers and government organizations, non-government organizations and international non-government organizations involved in reducing these problems in the areas of wastewater is

disposed systematically, education the ways of using water to protect the health problems and protection the environmental problems caused by industrialization as minimum as possible in the future.

Until quite recently, the pollution of natural water was not much of a problem, but with rapid urbanization and industrialization, this problem is reaching alarming proportions. In this area, industries discharge their untreated or only partially treated sewage and industrial wastewater into neighboring ditches. In doing so, they create intense pollution in ditches and rivers and expose the people who live in surrounding area to dangerously unhygienic conditions especially in the rainy season, these wastewater cannot flow rapidly and flood in through the streets.

1.5 Significance of the Study

In this area, wastewater and chemicals from the factories are increasingly discharged into the ditches and rivers unsystematically. It can lead to degradation and pollution of water, air and soil. As well as the government can't provide enough water supplies for the whole area and the villagers have to use the impurity water consist of various chemicals because they can't afford to buy clean water all the time, except for their drinking. So, the villagers have suffered from the infectious diseases, causing loss of income or high expenditure for health.

Without attention to the existing pollution problems that underpin water resources use within this area, the life quality of the villagers can exacerbate. Thus, understanding how water pollution might harmful to the human health and environment is necessary as long as they use these water sources. This result will be useful to analyze the direct and indirect costs on health from declining water quality.

1.6 Policy Context

Myanmar is one of the developing countries in the world, and very little information is available regarding the nation's water quality.

No single institution is responsible for the overall management of Myanmar's water resources. Currently, the Ministry of Agriculture and Irrigation is the main Ministry involved in water resources, with the mandate to develop agriculture and irrigation. Urban water supply systems in Myanmar are generally very out -of-date, with only intermittent supply and poor water quality. The water supply system in Yangon operated by the Water and Sanitation Department of the Yangon City Development Committee provides piped water to probably 40% - 50% of the urban population.

The infrastructure of water distribution needs to be developed due to the country's further economic development. In Myanmar, the water quality testing of ground water is undertaken by Yangon City Development Committee but water management is a lack of appropriate monitoring facilities, proper and systematic keeping of records, regular monitoring and surveillance data for water quality control and basis standards of water quality for drinking water.

Although there are many laws, acts, legislations and regulations related to water sector, most laws and acts for water sectors still need to be modified. In this area, Yangon City Development Committee is mainly responsible to monitor water quality in those water bodies where wastewater is discharged to regulate and to monitoring wastewater from the industrial zone.

Though the Management Committee of the Industrial Zone has to collect the maintenance fee (ks-10000) for per acre/month from local investors and (USD 50) for per acre/month from foreign

investors for all-round development and has also to do monitoring the wastewater disposal especially cleaning the sediment in the ditches, they can do just one time per year.

To solve this problem, the Yangon City Development Committee built the main water distribution center in this area and the tube-well water is filtered by Reverse Osmosis System. And then the four pipe-lines were settled for free distribution this water into the village. Although Yangon City Development Committee has to pay these charges, now this system has stopped because of higher charges.

As well as, the Department of Health has been curing and providing the medicines for the infection of Cholera, diarrhea disease, typhoid, skin problems and other infectious diseases which more occur at the beginning of the raining season. Especially, during the disease occurs, this department has been curing, giving and distribution the vaccines and education not to drink impurity water, to drink boiled water to keep the meal systematically, to be clean in the house and surroundings.

1.7 Objectives of the study

Overall objective of the study is to analyze and evolve ways to reduce the health impacts of impurity water and wastewater disposal mainly by industries in Hlaing TharYar Industrial Zone.

Specific objectives of the study are:

- (i) To evaluate the level of awareness of the residents about the costs what they incur for the decline in water quality
- (ii) To expose the problems created by the establishment of the Industrial Zone causing declining water quality and health problems
- (iii) To analyze the direct and indirect costs on health from declining water quality.

1.8 Scope of the Study

This study has to emphasize on the health costs that are related to declining water quality. Thaung Gyi Lay village and Yay Oakkan village consist of this village group and the industry zone is around this village group. So, this village group has suffered the water pollution problems more severe than the other villages.

1.9 Research Questions

In this study, the selected households will be asked to the following questions on

- (1) Awareness of the costs what they incur for the decline in water quality
- (2) Treatment of water by boiling or otherwise
- (3) Medical cost on different types of health problems
- (4) The ways they use to protect the current health problems
- (5) The current water supply system provided by the government for this area
- (6) Why the respondents did not boil the four water sources for their drinking

2.0 REVIEW OF LITERATURE

Under this health impacts from water pollution research area, water pollution is one of the most widely study topics among researchers. Water pollution is the contamination of water bodies (eg. lakes, rivers, oceans, aquifers and groundwater). Water pollution occurs when pollutants are

directly or indirectly discharged into water bodies without adequate treatment to remove harmful compounds. Water pollution affects plants and organisms living in these bodies of water.

2.1 Water Pollution

Water pollution has continued to increase from time to time for several reasons. Industrial waste, local sewage, pesticides and fertilizers, oil spills and others remain the major causes of water pollution. According to (Chiras, 2006), Water pollution is any physical or chemical change in water that directly affects the organisms. It's a global problem, the types of pollution differs from one country to the other according to the level of development. For example, in poor and non-industrialized countries, water pollution is mainly caused by human and animal wastes, pathogenic organisms, pesticides, and sediment from improper farming and timber practices. The developed countries also suffer from these same problems, but their more stable lifestyles and numerous industries create an additional chance other hazardous pollutants such as heat, toxic, metals, acids, pesticides, organic chemicals and a collection of pharmaceuticals.

Water pollution can generally be divided into two sources:

1. Point source
2. Non-Point source

Point sources include factories, power plants, mines, oil wells and sewage treatment plants which release huge amount of toxic chemicals into sewers, lakes and rivers, (Chiras, Environmental science, 2006). (Cech, 2003) also defined it as the contamination that occurs through a pipe or other items and their location can be easily identified.

Point source pollution is easy to identify and their impact can be easily evaluated. The main sources of point source pollution are considered to be factories and waste water treatment plants. The increase of population near the manufacturing centers can contribute to large amount discharge of waste. (Cech, 2003)

The non-point sources include farms, forests, lawns and urban streets. Both sources can create a lot of problems (Chiras, 2006). Non-point source pollution is so broad, it is so difficult to identify due to its large quantity into the source. They flow into rivers, lakes and other water bodies through the movement of surface and ground water and also through precipitation from the atmosphere. It is always difficult to identify, regulate and quantify due to such large and general uses it has. (Cech, Principles of water resources, 2003)

Industries remain the major cause of water pollution in most countries of regions in the globe. They produce large amount of waste causing pollution of rivers, lakes and other water bodies, which is transported directly into the water source then it causes water pollution.

Water pollution is the result of industrial waste and municipal waste. Industrial waste can be divided into two categories, the organic and inorganic waste. Most of the inorganic waste is mineral and chemical in nature which has added greatly to water pollution problems. The waste that contains metals such as nickel, iron, copper and chromium: salts such as compounds of sodium, calcium and magnesium: acids such as sulphuric and hydrochloric and several other compounds. The inorganic waste originate from pickling, acid mine drainage, metal finishing and plating and from the mining, processing and manufacture of a wide variety of metal and chemical products (Schwartz, 1966). This shows that when the concentration of industries in a region may increase the amount of water

pollution, leading to increase in cancer and other water borne diseases due to the presence of chemicals in the water.

The main impact of water pollution is mainly water borne diseases, diarrhea, typhoid, cancer and others which lead to death. Since population depend on water mostly for our survival, water pollution is a threat to our lives. The impact of water pollution is a connected process, for instance if the water is polluted, it will have an impact on the organisms in the water as well as the humans who mostly depends on the organisms as their source of consumption.

3.0 RESEARCH METHODOLOGY

3.1 Study Area

This study was mainly conducted in residential and business areas along the Pan Hlaing River which is the length of 48.06 kilometers. This village group is typical of urban village in developing countries in that they are densely populated. Large numbers of people are poor and work in casual.

This area was selected because they can't get enough clean water for their daily use, the garbage system is poor, the surrounding environment is unhealthy conditions such as muddy, dirty houses, the living standard is low and they have suffered from the infection diseases caused by wastewater of industries. Figure (3.1) shows the study areas and the study areas and the detailed survey locations are indicated by circles.

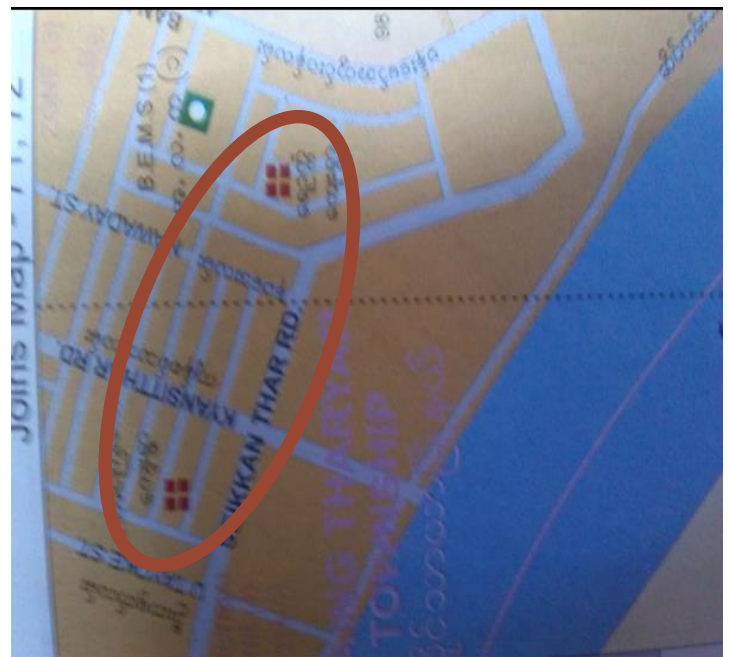
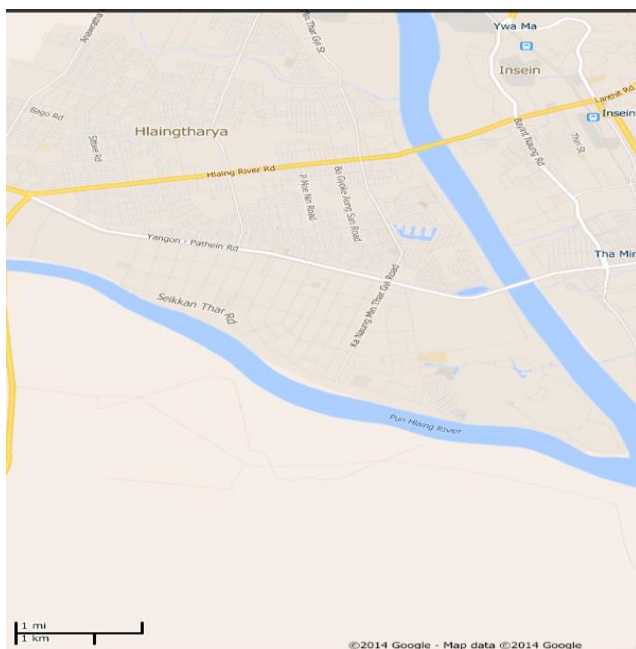


Figure (3.1) Study Area for Research Survey

3.2 Methods of the Study

For the purpose of achieving the research objectives, inferential statistical method was used in this study and systematic sampling method is mainly used for primary data. Primary data on the using types of water of residents will be gathered through the 296 respondents from Yay Oakkan village and Thaung Gyi Lay village, questionnaires from the households. The questionnaire consists of the points for asking may include awareness about the role of purified water, experiences with water shortages and rationing, the amounts paid to water vendors other than the concessionaires. Secondary data will also be gathered from the reports, journals and related government departments.

Sampling Procedure

Systematic sampling method is mainly in this study. Regarding the Determination of sample size (n), since most of the variables in this research are qualitative variables, the required sample size (n) will be computed on the estimation of a population proportion (P) with a desired bound (B) of error on estimation of P. The formula for n is given,

$$n = \frac{Npq}{(N-1)D + pq}$$

Where:

n	=	sample size
N	=	total number of houses in the area
p	=	population proportion
B	=	bound on the error of estimation
q	=	(1-p)

$$D = \frac{B^2}{4}$$

Where, B is 95 %, bound on the error of estimation. Here, in this survey, N= 2829; and p and q, are taken to be 0.50 to allow for the maximum sampling error of the estimate. B is taken to be 0.055=5.5%. Putting the corresponding values of N,p,q,B and D in the above formula, the required sample size (n) turned out to be n. So, the research picks this interval, 9. The members of this sample will be individual 1,10,19,28,37,46,55,, and the estimated number of houses is 296.

3.3 Data Collection Methods

This study consisted of two types of survey: the household survey and water test. In the household's survey, inferential statistical method was used and systematic sampling method was mainly used for primary data. Structured face-to-face interviews were conducted by trained interviewers in order to collect a cross-section data. Secondary data will also be cited from literature and related government departments.

For the water test, the water sample was mainly collected from the tube-well (below 90 feet depth), tube-well (above 400 feet depth), coverless lake water and Joe-phyu pipeline water supported by the government that are situated in Hlaing Thar Yar Industrial Zone in two seasons during the period of March 2015 to August 2015 the covering hot season and rainy season.

3.4 Survey Instruments

For the household's survey, primary data on the using types of water of residents will be gathered through the 296 questionnaires from the households. The household questionnaire covered four areas: Background Informing, Water Quality, Awareness about Water Pollution and Health Habits of the Household.

For the water test, all water were carried 2L of sterilized with prewashed polyethylene containers. They were packed in an ice box and quickly taken them to the laboratories within 6 hours and placed in cool and dark conditions for analytical purposes.

4.0 Results and Discussion

4.1 Household Survey

In this survey, 296 households were interviewed. At (74 %), slightly more women participated in the survey than men. But these women could explain the situation of the water what they have been using daily and answered the questions clearly.

Most respondents come from low or middle income households. They lived, on average, 30 minutes away from the industry. Their houses were mostly apartments and narrow spurious. One third of the respondents were migrants from outside of this area but most of them had been living in this area so long. On average, their monthly income was 150000 kyats (USD \$ 150) and (120) had monthly incomes below that standard national minimum income, which is USD\$ 108. The majority of people in these village groups mostly work in factories in the industrial zone.

4.1.1 Educational Level

Educational levels were directly related to the availability of livelihood options and the decision making process of using the best water types for their family's health. This survey illustrated a mixed picture.

Table 4.1 Educational profiles of respondents

Educational Level	Number of Respondents	%
Primary Education	117	39.5
Middle Education	93	31.4
High Education	48	16.2
Graduate	9	3.0
Monetary Education	10	3.4
Others	19	6.5

Source: Calculated from survey data

4.1.2 Kinds of water and using purposes

Table (4.2) shows the number of households which is using the four types of water: (1) from Lake, (2) Tube-well (90 feet), (3) Joe-phyu and (4) Tube-well (400 feet) in this villages group for drinking, cooking and washing purposes. Majority of the households use more than one type of water daily.

Table 4.2 Kinds of water and using purposes

Using Purposes	Types of Water									
	Purified water		Lake water		Tube-well water (90 feet)		Joe-phyu water		Tube-well water (400 feet)	
	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
Drinking	68	23.1	0	0	3	1.0	206	70.1	17	5.8
Cooking	16	5.0	9	2.8	7	2.2	186	57.9	103	32.1
Washing	1	0.3	18	5.0	145	40.3	43	11.9	153	42.5

Source: Calculated form survey data

The households usually use two types of water jointly together for their drinking, cooking and washing. Some households use Joe-phyu water for drinking as well as for cooking. Some households use Joe-phyu water and Tube-well water (400 feet) for cooking. Some households use not only purified water but also Tube-well water (400 feet) for their drinking. In accord with our survey results, drinking water is the most form of Joe-phyu water. As their cooking they use mostly Joe-phyu water and Tube-well water (400 feet). Tube-well (90 feet) and Tube-well (400 feet) are used the most for washing.

4.1.3 Number of Households using Boiled Water and Raw

Table (4.3) shows the number of households using boiled water and not using boiled water. In this survey, two-third of the households know very well to use boiling water for the health of their family but most of them are not used to boiling water.

Table 4.3: Number of households using boiling water and raw

Sr. No	Types of Households	Number of Households	Percentage (%)
1	Using boiled Water (drinking)	221	74.7
2	Not using boiled water (drinking)	75	25.3

Source: Calculated from survey data

4.1.4 Number of Households Awareness the Water Pollution

Table (4.4) shows the number of households' awareness on water pollution. According to the data collection, most of the respondents are not only low educated person but also they have a little knowledge about water pollution.

Table 4.4: Number of Households awareness on water pollution

Sr. No	Types of Households	Number of Households	Percentage (%)
1	Awareness of the water pollution	202	68.2
2	Not awareness of the water pollution	94	31.8

Source: Calculated from survey data

4.1.5 Disease profile of survey subjects

Table (4.5) shows the disease suffered from the both respondents and family members. According to this survey, (22) kinds of disease were found.

Table 4.5: Disease profile of survey subjects

Sr. No	Name of Disease	Qty of person who suffered from disease	Sr. No	Name of Disease	Qty of person who suffered from disease
1	Headache	46	12	Hay fever	6
2	Dizziness	38	13	Stomachache	5
3	Fever	32	14	Arthritis	5
4	Diarrhea	20	15	Cramp	4
5	Hypertension	18	16	Diabetes	4
6	Skin problem	12	17	Typhoid	3
7	Heart disease	12	18	Cholera	2
8	Neuritis	9	19	Liver disease	2
9	TB	8	20	Yellow fever	2
10	Asthma	7	21	Epilepsy	2
11	Nausea	6	22	Colic	1

According to our study, there are four kinds of water which the households use in this area and there is no household which use only one. All households have to use at least two or three kinds

of water for their daily use. So, it is difficult to separate this information according to the source of water.

But in accord with the water test, (62.6%) of the respondents have to use the Tube-well water (90 feet) for their washing and we found the high value of turbidity, Ammonia-Nitrogen (NH_3N), Cyanide, Alkalinity, iron and chloride mainly in the Tube-well water (90 feet) and the bromine, turbidity, Cyanide and Alkalinity value are also high in the Lake-water (LW).

Higher turbidity levels are associated with higher levels of disease and can cause symptoms such as nausea, cramps, diarrhea and headaches. And also if there is much amount of cyanide contamination in water, the villagers can feel dizzy, skin problems and in the long run they also cause nerve damage or thyroid problems. Excessive levels of iron can damage DNA, protein, lipids and other cellular components and if there is much amount of Bromine can affect seriously the human health.

So, although all diseases are not related to all sources of water, the diseases of dizziness, headache, fever, diarrhea, skin problems, Asthma, nausea, typhoid, cholera and cramp are mostly related to the impurity water, Tube-well water (90 feet) and Lake-water (LW).

4.1.6 Changes of water color (%) (296 respondents)

Table (4.6) shows the comparison of the changes of water color before and after establishing the industrial zone for four water sources answered by the respondents in the survey area.

Table 4.6: Changes of water color (%) (296 respondents)

Type of Water	Unchanged	Changed
Joe-Phyu Water	78.7%	21.3%
Tube-Well Water(90 feet)	24.3%	75.7%
Tube- Well Water	43.2%	56.8%
Lake Water	3.7%	96.3%

Source: Calculated from survey data

4.2 Data Collection Analysis

The regression and correlation analysis was used in our study. Many empirical studies rely quite heavily on these statistical tools. They are perhaps the most commonly used forms of statistical analysis, and are individual when making a large number of business and economic decisions.

4.2.1 Regression Analysis

Regression is a quantitative expression of the basic nature of the relationship between the dependent and independent variables. Regression and correlation analysis recognize that there may be a determinable and quantifiable relationship between two or more variables. That is, one variable depends on another and can be determined by it; or we can say that one variable is a function of another. This can be stated as

$$Y = f(X) \quad (4.1)$$

Which is read “Y is a function of X”, and states that Y depends on X in some manner? Since Y depends on X. It is the dependent variable and X is the independent variable.

Correlation determines the strength of the relationship. That is, while regression describes the basic nature of the relationship between the two variables, correlation measures how strong that relationship is. In this study, we used multiple regressions.

Multiple regressions involve two or more independent variables. If Y is said to depend on three independent variables, we can write $Y = f(X_1, X_2, X_3)$. A model containing K independent variables can be expressed as

$$Y = f(X_1, X_2, \dots, X_k) \quad (4.2)$$

Or

$$Y = b_0 + b_1 X_1 + b_2 X_2 + \dots + b_k X_k + e \quad (4.3)$$

Where K is the number of independent variables and b_1 are the coefficients for the variables. e is the random error-component made necessary because not all observations fall directly on the regression line.

4.3 Testing Multiple Regression Coefficients

In this multiple regression coefficients, we test the relation between the diseases by industry, distance from industry and the medical expenses (the sum of medical expenses and income loss per day while feeling the disease) the villagers. We have to test these four water altogether because all respondents use the all kinds of water for their drinking, cooking and washing purposes. So, we assumed that the villagers felt the direct effects of water pollution from these factors.

(1) Hypothesis

$$H_0: \beta_1 = \beta_2 = \beta_3 = \dots = \beta_k = 0$$

H_1 : At least one is not zero.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \epsilon_i$$

$$Y = 996.630X_2 + 10641.393X_6 + \epsilon_i$$

Y = Medical Expenses (Medical charges + income loss per day)

X₁ = Lake Water (LW)

X₂ = Tube-Well (90 feet) (TW 90)

X₃ = Joe-Phyu Water (JW)

X₄ = Tube-Well (400 feet) (TW)

X₅ = Distance of Water Sources from Industry

X₆ = Disease Caused by Industry

In this regression analysis, the dependent variable is the sums of medical charges which are the villagers have to pay when they feel illness and all the other independent variables are binary variables. X₁, X₂, X₃ and X₄ are four types of water they are using and if the villagers use them, the value of variable is 1 and if not, the value is zero.

X₅ is the distance of water sources from industry and we have to use the dummy variables 1 and 2. If the source of water they get is near the industry, the value is 1 and if not, the value is 0.

X₆ is the disease caused by the industry and we have also to use the dummy variables and 1 and zero. We asked the villagers "Do you think the disease you suffer from is caused by the industry" for this variable and the answer is 'yes' or 'no'. If it is yes, we put the value of variable, one and if it is no, we put zero.

We applied SPSS>stepwise linear regression approaches to the data to consider which variables are the explanatory variables affecting the change in medical expenses of the sample families. We found that only 3 variables, Tube-well water (90 feet), Distance of water sources from industry and whether the cause of disease is due to industry, are significant. The other sources of water are interrelated and hence the multicollinearity assumption is violated and found to be insignificant.

According to the significant variables, the relationship between the medical expenses (Y) and Tube-well water (90 feet) (X₄) and disease caused by industry (X₆) is positive. But the medical expenses (Y) and the distance of water sources from the industry (X₅) is negative relationship. So, the further the distance from industry, the less they feel the diseases and the less they spend for the medical expenses.

Table 4.8: Relationship between diseases suffered from the residents and four types of water estimates for the targeted area

	Coefficients	Std Error	Sig
Lake Water (LW)	-1518.204	821.104	.065
Tube-well Water (90feet) (TW 90)	996.630	375.364	.008
Joe-Phyu Water (JW)	375.956	577.584	.516
Tube-well Water (400 feet) (TW)	360.717	566.746	.525
Distance of water sources from industry	-293.839	555.668	.597
Disease Caused by industry	10641.393	413.775	.000

Dependent Variable: Total medical expenses, $R^2 = 0.825$, adjusted $R^2 = 0.821$, total n=296

In previous result, we had to entry the data of distance of water sources from industry wrongly. In our questionnaire, we put the six answers which they can choose; (1) under 5 minutes, (2) between 5 and 10 minutes, (3) between 10 and 20 minutes, (4) between 20 and 30 minutes, (5) over 30 minutes and (6) over one hour. So, there are various numbers (1 to 6) in our data entry for that and our result was not exact between the independent variable (X_5) was not dummy variables. Now, we have to divide the distance into two parts. If the distance is under 20 minutes, it is near the industry and if the distance is 20 minutes and over 20 minutes, it is far from the industry. If it is near the industry, the dummy is 1 and if not, 0.

We performed a multiple regression analysis to predict the actual impact from the water in the study area. So, illness occurs caused by the waste water disposal from industry at 100% level of confidence (0.000). And also, there is only Tube-Well Water (90 feet), TW (90) is at 98% level of confidence (0.002) and related to the dependent variable. According to its geographical situation and this water contains iron, calcium and salinity. So, the more tube-well water they use, the more ill they become. According to the interview, almost all households have to use more the tube-well (90 feet) than the other types of water. Turbidity, total dissolved solid (TDS), iron and cyanide values in the tube-well water (90 feet) are high compared with the other types of water and it is higher than the permissible level according to the water test. The results of the experiments for four types of water are shown in Table (4.8),(4.9),(4.10) and (4.11) in detail.

Before 2008, there are (10) tube wells in this village group, (5) can be used for drinking. But after 2008, more factories establish, the more the volume of waste water disposed by various industries. Industries discharge their untreated or only partially treated sewage and industrial

wastewater unsystematically into neighboring ditches and on the road. In doing so, they create intense pollution in ditches and rivers.

Besides, before 1997, there were about (2000) people in this village but there are over populated and become urbanization in this area after establishing the Industrial Zone because most of the people in other areas had to migrate for their job opportunities. Being rapid pollution growth and industrialization, not having been well-housing system and not having been proper swage system, drainage system and garbage system, water pollution has been growing. These factors can impact indirectly the water sources in this area because the color, taste and smell of Tube-well water are gradually worse and worse comparing with the situation in 1997.

Nevertheless, turbidity, total dissolved solid (TDS), iron and cyanide values in the Tube-Well water (90 feet) are high compared with the WHO and EPA standard according to the water test. Higher turbidity levels are associated with higher levels of disease causing microorganisms such as viruses, parasites and some bacteria.

Total dissolved solid (TDS) is directly related to the purity of water and quality of water purification systems and affects everything that consumes, lives in, of uses water. According to the answers of respondents, changing the color of JW (90) is (76%) and no change is only (24%). So, the color and smell of tube-well (90 feet) water significantly changes and not suitable for their daily use caused by these factors.

According to the our interview results, almost of the villagers in this area have to use the Tube-well (90 feet) water for their daily use that they can't spend their much money for purified water. Although they know the color, taste and smell of Tube-well (90 feet) water are gradually worse and worse, they have no choice to more use other types of water because the situation of their income and they have no enough knowledge the danger of this water. They always think that their daily small income can be provided for their daily costs. According our water test, turbidity, total dissolved solid (TDS), iron and cyanide values in this water are high compared with the WHO and EPA Standard.

So, if the villagers use this type of water for so long, they can suffer symptom such as nausea, cramps, diarrhea, and associated headaches caused by high level of turbidity. They can also feel not only dizzy, skin problems and in the long run also nerve damage or thyroid problems due to the cyanide but also damage DNA, proteins, lipids and other cellular components caused by excessive levels of iron.

Distance means the distance of water sources they get and the industry. According to our regression analysis, distance from the industry is significant but the coefficient sign is negative. So, we assumed that there is negatively relationship between the distance from industry and the cost of illness. The nearer the water sources they use from the industry, the more ill they suffer and the higher the health cost. The greater the distance, the less ill they suffer and the lower the health cost. This makes sense since it implies that water taken from a location further away from the point source is less polluted.

4.4 Community Perceptions of Health Profile

In an open question on predominant health problems in the community, the respondents mentioned that skin problems, diarrhea, illness, headache, dizziness were the most common health problems amongst the population in this area. In addition, people also suffer from hypertension,

asthma, TB, neuritis, hay fever, arthritis, stomachache, heart disease, nausea, cramp, cholera, epilepsy, yellow fever, colic, liver disease, diabetes and typhoid.

Headache and dizziness were widespread in the study area. Almost all participants of interview claimed to have experienced headache and dizziness because of their frequent contact with water and some participants were currently suffering from dizziness because the water they use daily includes the high level of turbidity and cyanide. The people suffer from diarrhea, hypertension and skin problem are a little high in this study. Diarrhea is one of the most prevalent health problems reported to be suffered by children as well as some adults. The source of the problem is the place where they live is unhealthy environments and contact with the chemicals used in the factories.

The majority of the respondents also blamed the lack of proper sanitation system, drainage system and sewage system and lack of knowledge about hygiene for diarrhea, skin problem, TB, frequently illness which are frequent among children, slum dwellers and factory workers.

Currently, 62.6 percent of the villagers and 32.4 percent of villagers were found to be using tube-well (90 feet) and tube-well (400 feet) water for washing and day-to-day household activities. Culturally open water bodies have been the most common source of water for bathing. People generally bathe at least once a day.

4.5 Water Quality Analysis

Results of the experiments are presented in above table. It shows the quality parameters of the untreated water samples collected from four sampling sites in Industrial Zone and their disposal channels.

Table 4.8 Physiochemical Parameters of Water Sample Collected from Industrial Zone (Hot Season)

Parameter	Unit	SI	SII	SIII	SIV	WHO standard*	EPA standard**
pH	-	7.95	7.06	7.32	7.42	6.5 ~8.5	6.5 ~8.5
Bromine	ppm	1.19	0.82	0.01	0.02	1	-
Turbidity	NTU	61	174	4.69	3.88	5	-
TDS	mg/L	230	380	40	45	500	500
Ammonia Nitrogen (NH ₃ N)	mg/L	0.09	0.4	0.2	0.1	0.5	0.5
Nitrite Nitrogen (NO ₃ -N)	mg/L	0.06	0.04	0.02	0.02	1.0	1.0

Cyanide	mg/L	9	6	0	1	0.07	-
Alkalinity	mg/L	169	190	30	31	500	30 ~ 150
Hardness	mg/L	90	70	32	45	500	90 ~ 100
Chloride	mg/L	0.32	0.37	0.01	0.02	250	-

Sources: (1) Laboratory of Small Scale Industries Department

(2) Water and Soil Examination Laboratory, Department of Fisheries

* World Health Organization Standard for drinking water (2006)

** Environmental Protection Agency for domestic water (2003)

ND = not detectable

S_I = Coverless Lake Water

S_{II} = Tube-well (below 90 feet depth)

S_{III} = Joe Phyu Pipe Water

S_{IV} = Tube-well (above 400 feet depth)

TDS = Total Dissolved Solid

4.6.2 Some Organic Pollutants Parameters of Water Samples Collected from Industrial Zone

Results of the experiments are presented in above table. It shows the organic pollutants parameters of the untreated water samples collected from four sampling sites in Industrial Zone and their disposal channels.

Table 4.9 Some Organic Pollutants Parameters of Water Samples Collected from Industrial Zone (Hot Season)

Parameter	Unit	SI	SII	SIII	SIV	WHO Standard *	EPA Standard**
COD	mg/L	29.4	8	20.6	22.6	10	5
DO	mg/L	5.0	4.75	7.0	6.0	-	4~6
BOD	mg/L	0.5	1.0	1.5	1.0	6	5

Sources: (1) Laboratory of Small Scale Industries Department

(2) Water and Soil Examination Laboratory, Department of Fisheries

* World Health Organization Standard for drinking water (2006)

** Environmental Protection Agency for domestic Water (2003)

COD = Chemical Oxygen Demand

DO = Dissolved Oxygen

BOD = Biochemical Oxygen Demand

4.6.3 Heavy Metals of Water Samples Collected from Industrial Zone

Results of the experiments are presented in the above table. It shows the organic pollutants parameters of the untreated water samples collected from four sampling sites in Industrial Zone and their disposal channels.

Table 4.10 Heavy Metals of Water Samples Collected from Industrial Zone (Hot Season)

Parameter	Unit	SI	SII	SIII	SIV	WHO Standard *	EPA Standard**
Lead	mg/L	ND	ND	ND	ND	0.01	0.05
Iron	mg/L	1.71	12.58	ND	0.063	0.30	0.30
Cadmium	mg/L	ND	ND	ND	ND	0.003	0.01
Copper	mg/L	0.006	0.005	0.002	0.002	2.00	1.00
Total Mercury	Hg	0.0064	0.0015	0.0041	0.0007	0.001	-
Arsenic	ppm	0.0021	0.005	0.0009	0.0067	0.01	-

Sources: (1) Laboratory of Small Scale Industries Department

(1) Water and Soil Examination Laboratory, Department of Fisheries

(2) Customer Support & Laboratory Department, Australasia Marking Trading & Technology Co.,Ltd.

* World Health Organization Standard for drinking water (2006)

** Environmental Protection Agency for domestic water (2003)

ND = Not detectable

4.6.4 Microbiological Parameters

Results of the experiments are presented in above table. It shows the microbiological parameters of the untreated water samples collected from four sampling sites in Industrial Zone and their disposal channels.

Table 4.11 Microbiological Parameters

Parameter	Unit	SI	SII	SIII	SIV	WHO Standard *	EPA Standard**
Total Coliforms	MPN/100 ml	<103				0	-
E-coli	MPN/100 ml	0	0	0	0	0	-

Sources: (1) Laboratory of Small Scale Industries Department

ND = Not detectable

In this study, we had to choose (296) households for data collection using the systematic sampling method and test the four water samples which they are using daily in this area for the hot season and the rainy season. According to this study, there were (22) kinds of diseases are occurring in this area: They are typhoid, diabetes, liver disease, colic, yellow fever, epilepsy, cholera, cramp, nausea, heart disease, stomachache, arthritis, hay fever, neuritis, TB, asthma, skin problem, hypertension, diarrhea, dizziness, headache and fever.

In accord with the result of water test, we found the high value of parameters which can be harmful the human health such as turbidity, ammonia-nitrogen (NH₃N), cyanide, alkalinity, iron and chloride mainly in the Tube-well water (90 feet) and the bromine, turbidity, cyanide and alkalinity in the Lake Water (LW).

In the regression model, only three variables (Tube-well water (90 feet), disease caused by industry and distance of water sources from industry) are found to be significant. But they can explain about (83%) of the variation in medical expenses, (17%) of the variation is due to other factors which we could not explain. They could be due to personal hygiene, as well as the other environmental issues and lack of knowledge on health education etc. So, the result of water test and the regression analysis show that the diseases of dizziness, headache, fever, diarrhea, skin problems, asthma, nausea, typhoid and cholera are mostly related to the Tube-well Water (90 feet).

5.0 CONCLUSION

In this study, we found that Tube-well water (90) feet is not suitable for their daily use. As well as the government organization is lack of responsibility to monitor water quality in those water bodies where wastewater is discharged to regulate and to monitoring wastewater from the industrial zone.

The water distribution system in this area is very weak for the households. Most households have to use the impurity water and they have to spend their some income for the water sources. Although the residents suffer from the several diseases, two-third of the respondents does not exactly know that it is caused by water pollution. Because of they are uneducated and they team to use unclean water. As well as they have no enough knowledge that the diseases are related to the water pollution and water pollution can be occurred by the industrial zone and poor sanitation infrastructure especially bad garbage system, ill sewage system and poor drainage system.

According to this study, industrial zone is very close to this village group as well as the wastewater and byproducts released from the factories are not be disposed systematically. This fact can be harmful not only the health of the villagers but also the groundwater and environment. Nevertheless, we found that the households which use the water sources near the industrial zone suffer more diseases than the households away from the industrial zone.

This research report serves as a guide to reduce the health impacts of impurity water and wastewater disposing from the industries. Our hope is that our findings will help the authority to understand the existing problems and to implement the necessary policies and guidelines.

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မြန်မာကဗျာအချို့ကပေးသော ရသခံစားမှုနှင့် အသိအမြင်များ

ဒေါသန်းသန်းဝင်း^၁

စာတမ်းအကျဉ်း

ဤစာတမ်းတွင် မြန်မာကဗျာအချို့ကပေးသော ရသခံစားမှုနှင့် အသိအမြင်များကို လေ့လာတင်ပြထားပါသည်။ ကဗျာများမှတစ်ဆင့် ဘဝပတ်ဝန်းကျင်ကို မြင်တွေ့နိုင်သည်။ အပြန်ကျယ်သော လောကအကြောင်းကိုလည်း သိရှိနိုင်သည်။ နှစ်သက်ခြင်းရသကိုလည်း ခံစားရသည်။ ဘဝအသိအမြင် အာနိသင်ကိုလည်း ပေးစွမ်း နိုင်သည်။ ကဗျာ၏ လွှမ်းမိုးမှုအာနိသင်မှာ အစွမ်းထက်လှ၍ ကဗျာကပေးသည့် ခံစားမှုနှင့် အသိအမြင်ကို တင်ပြလိုပါသည်။ ဤသို့ လေ့လာတင်ပြရာ၌ ပုဂံခေတ်စာဆို အနန္တသူရိယအမတ်၏ “သူတည်းတစ် ယောက်” ချီ မျက်ဖြေလင်္ကာ၊ ညောင်ရမ်းခေတ်စာဆို တောင်တွင်းရှင်ငြိမ်းမယ်၏ “ငါ့ကိုကွယ် အမယ်ကြီး နဲ့ဘကြီးဖျက်လို့” ချီ အိုင်ချင်း၊ ခေတ်စမ်းစာဆို မင်းသုဝဏ်၏ “ဖိုးမောင်လာပြီ”၊ ဆရာဇော်ဂျီ၏ “လှိုင်းကလေးသင်”၊ ဆရာမ ငွေတာရီ၏ “သူရဲကောင်းသုံးယောက်နှင့် ခရီးသည်” ကဗျာ(၅)ပုဒ်၏ ရသခံစားမှုနှင့် ကဗျာကပေးသော အသိအမြင်များကို လေ့လာတင်ပြထားပါသည်။ ဤသို့ တင်ပြရာတွင် ကဗျာဖွဲ့နည်းစနစ်များကို လေ့လာတင်ပြမည်မဟုတ်ဘဲ ကဗျာများကို ဖတ်ရှုခြင်းဖြင့် ဖြစ်ပေါ်လာသည့် နှစ်သက်ခြင်းရသခံစားမှုနှင့် ကဗျာကပေးသော အသိအမြင်အပိုင်းကို အဓိကထား၍ လေ့လာတင်ပြထား ပါသည်။

သော့ချက် - ကဗျာဝေါဟာရနှင့်သဘောသဘာဝ၊ ရသစာပေ၊ ရသခံစားမှုနှင့် အသိအမြင်

နိဒါန်း

မြန်မာစာပေသမိုင်းတွင် မြန်မာကဗျာသည် အဓိကအခန်းကဏ္ဍမှ ပါဝင်ခဲ့ပြီး စာပေသမိုင်းကို မှတ်တမ်းတင်သည့် ပုဂံခေတ်မှသည် ပင်းယခေတ်၊ အင်းဝခေတ်၊ တောင်ငူခေတ်၊ ညောင်ရမ်းခေတ်၊ ကုန်းဘောင်ခေတ်၊ ကိုလိုနီခေတ်၊ လွတ်လပ်ရေးခေတ်နှင့် ယနေ့မျက်မှောက်ခေတ်တိုင် ခေတ် အဆက်ဆက် ကဗျာများကို ဖွဲ့နည်းမျိုးစုံနှင့်ရေးဖွဲ့၍ နှစ်သက်စွာခံစား လက်ခံလျက်ရှိကြောင်းသိနိုင် သည်။ ရှေးနှစ်ပေါင်းများစွာကပင် တည်ရှိခဲ့သော မြန်မာကဗျာများသည် အနာဂတ်ကာလများတွင် လည်း ဆက်လက်တည်ရှိနေမည်သာဖြစ်သည်။ ရသမြောက် အဖွဲ့အနွဲ့များနှင့်အတူ လောကအမြင်၊ ဘဝအမြင်၊ ဓမ္မအမြင်၊ စာပေအနုပညာအမြင် စသည့်လူသားတို့အတွက် အသိအမြင်များ ပေးစွမ်းနိုင်

^၁တွဲဖက်ပါမောက္ခ၊ သမဝါယမတက္ကသိုလ် (သန်လျင်)

သည့် အဆင့်အတန်းမြင့်မားသော ကဗျာကောင်းများစွာ မြန်မာစာပေတွင်ရှိနေကြောင်း လေ့လာတွေ့ရှိနိုင်ပါသည်။

ဤစာတမ်းတွင် ခေတ်အသီးသီးပေါ်ထွန်းခဲ့သော မြန်မာကဗျာများစွာအနက်မှ ပုဂံခေတ်စာဆိုအနန္တသူရိယအမတ်ကြီး၏ “သူတည်းတစ်ယောက်” အစချီ မျက်ဖြေလင်္ကာ၊ ညောင်ရမ်းခေတ်စာဆိုတောင်တွင်းရှင်ငြိမ်းမယ်၏ “ငါ့ကိုကွယ်အမယ်ကြီးနဲ့ဘကြီးဖျက်လို့” ချီ အိုင်ချင်း၊ ခေတ်စမ်း စာဆိုမင်းသုဝဏ်၏ “ဖိုးမောင်လာပြီ”၊ ခေတ်စမ်းစာဆို ဆရာဇော်ဂျီ၏ “လှိုင်းကလေးသင်”၊ ငွေတာရီ၏ “သူရဲကောင်းသုံးယောက်နှင့်ခရီးသည်” ကဗျာများမှပေးသော ရသခံစားမှုနှင့် အသိ အမြင်များကို လေ့လာတင်ပြထားပါသည်။

ရည်ရွယ်ချက်

မြန်မာစာပေရှိ ကဗျာကောင်းများသည် စာဖတ်သူများအတွက် ရသနှစ်သက်ခံစားမှုနှင့်အတူ လူ့လောကကို ကြည့်တတ်၊ မြင်တတ်၊ စာနာတတ်၊ ဆင်ခြင်တတ်သည့် အသိအမြင်များ ပေးစွမ်းနိုင် ကြောင်း ဖော်ပြလိုသော ရည်ရွယ်ချက်ဖြင့် ဤစာတမ်းကို ရေးသားထားခြင်းဖြစ်ပါသည်။ ဤစာတမ်းပါ ကဗျာများသည် ကဗျာနှစ်သက်မြတ်နိုးသူများအတွက် ရသနှစ်သက် ခံစားမှုနှင့်အတူ လောကအမြင်၊ ဘဝအသိအမြင် ခွန်အားများကို ပေးစွမ်းနိုင်လိမ့်မည်ဟု မျှော်မှန်းပါသည်။

၁။ ကဗျာဝေါဟာရနှင့်သဘောသဘာဝ

ကဗျာဆရာများသည် ဒိဋ္ဌဓမ္မလောကတွင် ကျင်လည်လှုပ်ရှားရင်း မိမိတို့တွေ့ကြုံခံစားရသည့် အတွေ့အကြုံနှင့် ခံစားမှုအပေါ် အခြေတည်ကာ ကဗျာဖန်တီးမှု အတတ်ပညာများဖြင့် ကဗျာများကို ရေးဖွဲ့ဖန်တီးကြသည်။ ကဗျာ၏ အဓိပ္ပာယ်ကို မြန်မာအဘိဓာန်ကျမ်းတွင်-

“ကဗျာ/ဂဗျာ/န - စည်းမျဉ်းများနှင့်အညီ စာလုံး၊ စာပိုဒ်အရေအတွက် ကာရန် အချိတ်အဆက်၊ အသံအနေအထားစသည် ဖြင့် စီကုံးထားသော အဖွဲ့အနွဲ့”^၁

ဟု အဓိပ္ပာယ်ဖွင့်ဆိုသည်။

အင်္ဂလိပ်စာပေပညာရှင် ဝီလံဟက်လေဇ်ကမူ-

“ကဗျာဆိုသည်မှာ အတွေး၏ ဘာသာစကား၊ အာရုံတို့၏ ဘာသာစကား ဖြစ်သည်။ ကဗျာသည် လူ့စိတ်ကို အလျင်အမြန်ပျော်ရွှင်မှု၊ သို့မဟုတ် နာကျင်မှုပေးသမျှတို့နှင့် သက်ဆိုင်သည်။ ကဗျာသည် လူ၏ ရင်ကိုလည်း ထိခိုက်စေသည်။ လူ၏ အသိစိတ် ကိုလည်း ထိခိုက်စေသည်”^၂

ဟူ၍ ဖွင့်ဆိုထားသည်။ ထို့ပြင် ကဗျာ၏သဘောကို-

“ကဝိနိ ဣဒံကဗျံ ကဗျာသည် ပညာရှိတို့၏ အရာဖြစ်ကြောင်းဆိုသည်။ မည်သည့် လူမျိုး၏ စာပေတွင်မဆို ကဗျာသည် အဆင့်မြင့်သော စာပေရေးသားမှုဟု စံပြုကြ ပါသည်”^၃

ဟူ၍ ဖော်ပြထားသည်။ ထိုအဓိပ္ပာယ်ဖွင့်ဆိုချက်များအရ ကဗျာ၏ သဘောသဘာဝကို အနှစ်ချုပ် ဖွင့်ဆိုရလျှင် ကဗျာဟူသည် စည်းကမ်း၊ စနစ်များ၊ ကာရန်အချိတ်အဆက်များနှင့် သီကုံးဖွဲ့နွဲ့သော စာဖတ်သူ၏စိတ်ကို နှစ်သက်ကျေနပ်မှုဟူသည့် ရသခံစားမှုများ ပေးစွမ်းနိုင်သည့်အပြင် အသိအမြင် များပေးစွမ်းနိုင်သော အဖွဲ့တစ်မျိုးဟု ဖွင့်ဆိုရမည်ဖြစ်ပါသည်။

^၁မြန်မာစာအဘိဓာန်၊ ၁၉၉၁၊ ၄။

^၂စာပေဂျာနယ်၊ စက်တင်ဘာ၊ ၁၉၉၅၊ ၁၄၄။

^၃ချိုချိုတင့် (ပါမောက္ခ-၊ ဒေါက်တာ-)၊ ၂၀၁၁၊ ၁၇၇။

၂။ ရသခံစားမှုနှင့် အသိအမြင်

စာပေများတွင် လူ့အကြောင်း၊ လောကအကြောင်း၊ လူ့အမြင်၊ လောကအမြင်များကို ရေးဖွဲ့လေ့ရှိရာ ဆရာမောင်ဆုရှင်က-

“လူ့သမိုင်းတွင် စာပေအရေးအသား ပေါ်ပေါက်ချိန်မှစ၍ လူ့လောကကို လေ့လာ ခြင်း၊ လူ့ပတ်ဝန်းကျင်ကိုလေ့လာခြင်း၊ သဘာဝပတ်ဝန်းကျင်ကို လေ့လာခြင်း၊ လူ့စိတ်လူ့မနောကို

လေ့လာခြင်းတို့ ပြုလုပ်ခဲ့သောမှတ်တမ်းများသည် စာပေဖြစ် သည်။ လူ့ဉာဏ်စေစား ကွန်မြူချက်များလည်း ဖြစ်သည်။ ထိုစာပေတို့ကို ရသ အသွင်၊ သုတအသွင် တွေ့နိုင်သည်”^၁

ဟုဖော်ပြသည်။ ထို့ပြင် စာပေတွင် သုတစာပေနှင့် ရသစာပေဟူ၍ နှစ်မျိုးရှိကြောင်း ဖော်ပြထားရာ ဤတွင် ရသစာပေအကြောင်းကို အဓိကဖော်ပြလိုပါသည်။ ရသစာပေ၏ အဓိပ္ပာယ်ကို မြန်မာ အဘိဓာန်တွင်-

“ရသစာပေ/ ရှုသာစာပေ/ န- ရသပေါ်အောင် ဖွဲ့နွဲ့ရေးသားထားသော လင်္ကာ၊ စကားပြေ စသည်”^၂

ဟု ဖွင့်ဆိုထားသည်။ တစ်ဖန် ဆရာဇော်ဂျီက ရသစာပေနှင့်စပ်လျဉ်း၍-

“ကဗျာကောင်း၊ ဝတ္ထုကောင်း၊ ပြဇာတ်ကောင်း စသည်တို့သည် (ဝါ) ရသစာပေ ကောင်းဟူသည် သက်ရှိသက်မဲ့ ပတ်ဝန်းကျင်ဘဝ၌ မြင်နေကြရသော၊ ကြားနေကြ ရသော၊ ကြုံနေကြရသော အာရုံတို့အပေါ်၌ စာရေးဆရာ၏ စေတနာသက်ရောက်၍ သူ့အမြင်၊ သူ့အကြား၊ သူ့အတွေ့အကြုံတို့ကို သူ့စေတနာအလိုက် သရုပ်ဖော်ဖွဲ့ဆို ထားသော စာမျိုးဖြစ်သည်ဟု ယူဆပါသည်။ တစ်နည်းဆိုရသော် ရသစာပေကောင်း ဟူသည် စာရေးဆရာ၏ စိတ်စေတနာကို ရေးထားသောစာမျိုးဖြစ်သည်ဟု ဆိုလိုပါသည်”^၃

^၁ ဂန္ထဝင်စာပေစာတမ်းများ (ပထမတွဲ)၊ ၁၉၉၁၊ ၁၇၆။

^၂ မြန်မာအဘိဓာန်၊ ၉၁၊ ၃၀၃။

^၃ ဇော်ဂျီ၊ ၂၀၀၄၊ ၂၅၃။

ဟု ဖော်ပြထားရာ ရသစာပေတွင် ကဗျာ၊ ဝတ္ထု၊ ပြဇာတ်တို့ အကျုံးဝင်ပြီး ရသစာပေတွင် စာရေးသူ တို့၏ စေတနာခံစားချက်၊ စိတ်ကူးအတွေ့အကြုံ၊ အကြားအမြင်တို့ကို အခြေတည်၍ ရေးဖွဲ့ထား ကြောင်းသိနိုင်သည်။ စာရေးသူတို့၏ ခံစားချက်၊ စိတ်ကူးအတွေ့အကြုံ၊ အကြားအမြင်တို့ကို အခြေ တည်ရေးဖွဲ့ထားခြင်းဖြစ်သည်ဟုဆိုသော်လည်း အပျော်ဖတ်စာပေသက်သက် မဟုတ်ကြောင်းကို ဆရာဇော်ဂျီက-

“ရသစာပေသည် လောကသဘာဝအချက်အလက် (Fact) ဖော်ပြမှုကို အဓိက ထားသော စာမျိုးမဟုတ်ပါ။ လောကသဘာဝအချက်များကိုရှာ၍ရရှိပြီးသည့် ထိုအချက်အလက်များကို အခြေပြု၍ ဘဝအကောင်းအဆိုး အကျိုးအပြစ် အသိ တင်ပြမှုကို (ဝါ) လူ့လောက အယုတ်အမြတ်တရား (human values) တင်ပြမှုကို အဓိကထားသော စာမျိုးဖြစ်သည်”^၁

ဟု ရသစာပေ၏ သဘောကို ဖော်ပြထားသည်။

ထို့ကြောင့် ရသစာပေတွင် အကျုံးဝင်သည့် ဝတ္ထု၊ ကဗျာ၊ ပြဇာတ်များသည် စာဖတ်သူအား ဖျော်ဖြေမှုပေးစွမ်းနိုင်ခြင်း၊ နှစ်သက်မှုပေးစွမ်းနိုင်ခြင်း၊ နှစ်သက်မှုကို အကြောင်းပြု၍ အသိအမြင်

အတွေးအခေါ်များကို ပေးစွမ်းနိုင်သည့်စာမျိုးဖြစ်သည်ချဟု ဆိုနိုင်ပါသည်။ ရသစာပေ ဖန်တီးသော စာပေပညာရှင်များသည် မိမိတို့ရေးသားသော ကဗျာ၊ ဝတ္ထု၊ ပြဇာတ် စသည့် ရသစာပေများတွင် နှစ်သက်ဖွယ်ရသ (၉)ပါးအရသာကို ထည့်သွင်းကာ ဖန်တီးရေးဖွဲ့ကြသည်။

ဤတွင် ရသ(၉)နှင့်စပ်လျဉ်းပြီး ဆရာကြီးမောင်ခင်မင် (ဓနုဖြူ)က သုဗောဓာလင်္ကာကျမ်းကို ကိုးကား၍-

“(၁) မိန်းမနှင့်ယောက်ျားတို့ ချစ်ကြိုက်ခြင်း သိင်္ဂီရရသ (၂) ပြုံးရယ်ခြင်းဟူသော ဟဿရသ (၃) စိုးရိမ်ကြောင့်ကြ သနားခြင်းဟူသော ကရုဏာရသ (၄) ကြမ်းကြုတ် ခြင်းသဘောရှိသော ရုဒ္ဓရသ (၅) လုံ့လဝီရိယဟူသော ရဲရင့်ခြင်းသဘောရှိသော

^၁ ဇော်ဂျီ၊ ၁၉၉၄၊ ၈၃။

ဝီရရသ (၆) ကြောက်ခြင်းဟူသော ဘယာနကရသ (၇) စက်ဆုပ်ရွံရှာခြင်းဟူသော ဝိဘန္ဓရသ (၈) အံ့သြခြင်းဟူသော အဗ္ဗုတရသ (၉) ငြိမ်သက်တည်ကြည်ခြင်း ဟူသော သန္တရသ”^၁

ဟု ရသ (၉)ပါး၏ အဓိပ္ပာယ်ကို ရှင်းလင်းဖော်ပြထားသည်။ ဖော်ပြပါ ရသခံစားမှုများကို ထည့်သွင်း၍ ဖန်တီးထားသော ရသစာပေများသည် ရသစာပေသက်သက်ဖြစ်ရုံနှင့် မပြီးသေး။ အဆင့်အတန်း ရှိ၍ အစွမ်းအာနိသင်ရှိသောသော ရသစာပေကောင်းဖြစ်ရန် လိုအပ်ကြောင်းကို-

“အဆင့်အတန်းရှိသော ကဗျာအပါအဝင် ရသစာပေသည် ပရိသတ်၌ ရသဟူသော နှစ်သက်ခြင်းကို ဖြစ်စေလျက် ရသနှင့်အတူ ပတ်ဝန်းကျင်ကို သတိပြုမိစေခြင်းဖြင့် ကိုယ့်အတွက်သာ စဉ်းစားချင်သော ငါစွဲလျော့ပါးစေပြီး ဘဝအမောပြေစေ နိုင်သည်”^၂

ဟု အဆင့်အတန်းရှိသော ရသစာပေများ၏ အစွမ်းအာနိသင်ကို ဖော်ပြထားသည်။

ပုထုဇဉ်လူသားတို့အနေနှင့် ပုထုဇဉ်သဘာဝ လှုပ်ရှားသွားလာလုပ်ကိုင်ရင်း နေ့စဉ်နှင့်အမျှ ဒေါသ၊ မောဟ၊ လောဘ၊ မာန်၊ မာန ထောင်လွှားမောက်မာမှုများ ဖြစ်တတ်သလို ကြောင့်ကြစိတ်၊ တောင့်တစိတ်၊ အားငယ်စိတ်၊ အထီးကျန်စိတ်စသော သိမ်ငယ်အားငယ်မှုများလည်း ခံစားရ တတ် သည်။ ထိုလောဘ၊ ဒေါသ၊ မောဟ၊ ကြောင့်ကြ၊ တောင့်တစိတ်များကိုပင် ဘဝအမောဟုဆိုချင် ကြောင်း ဆရာဇော်ဂျီက-

“ဘဝအမောဆိုသည်မှာ လောဘ၊ ဒေါသ၊ မောဟစိတ်တို့ကြောင့် မောဟိုက်ခြင်းကို ဆိုလိုသည်”^၃

ဟု လူသားတို့ခံစားရသည့် ဘဝအမောများကိုဖွင့်ဆိုပြသည်။ ရသစာပေသည် လူသားတို့ခံစားရသော ဘဝအမောတို့အတွက် ငြိမ်းချမ်းမှုပေးရာ၊ နှစ်သိမ့်မှုပေးရာ၊ ဖြေဆည်မှုပေးရာ၊ ဆင်ခြင်နိုင်မှုပေးရာ

^၁ ခင်မင်၊ မောင်၊ (ဓနုဖြူ)၊ ၂၀၁၀၊ ၁၃၈။

^၂ -ယင်း-၊ ၁၃၉။

^၃ ဇော်ဂျီ၊ ၂၀၀၄၊ ၂၇၆။

ဆေးစွမ်းတစ်လက်နှင့်တူကြောင်းကို-

“ရသစာပေသည် ဘဝအမောသမားများကို ထိုဘဝအမောမှ လွတ်မြောက်စေရေး အတွက် တက်ကြွခြင်း၊ ရဲရင့်ခြင်းတို့ ဖြစ်လာအောင်ကား ပြုပေးနိုင်သည်”^၁

ဟု ရသစာပေ၏အစွမ်းကို ဖော်ပြထားသည်။ ရသစာပေကောင်းကိုဖတ်ရှုခြင်းဖြင့် လောကပတ်ဝန်းကျင်ကိုလည်း သတိပြုမိနိုင်သည်။ မိမိ၏ လောဘ၊ ဒေါသ၊ မောဟ၊ မာန ထောင်လွှားမှုများကို လည်း ကိုယ်တိုင်သတိပြု ဆင်ခြင်တတ်လာသည်။ ဤသို့ ဆင်ခြင်သုံးသပ်နိုင်သည့်အတွက် မိမိ အကျိုး၊ သူတစ်ပါးအကျိုးကို မျှတစွာ သယ်ပိုးလိုစိတ် ဖြစ်ပေါ်စေသည်။ ကိုယ်၊ နှုတ်၊ နှလုံး သုံးပါး ကို ဆင်ခြင်နိုင်၍ သတ္တဝါများအပေါ် ကိုယ်ချင်းစာတရား၊ မေတ္တာတရား၊ ကရုဏာတရားဖြင့် ကြည့်မြင်နိုင်သော အသိအမြင်၊ အသိတရားများ ရရှိစေသည်။

ဤစာတမ်းတွင် တင်ပြထားသော ကဗျာငါးပုဒ်မှာ သနားခြင်း၊ ကျေနပ်နှစ်သက်ခြင်း၊ ရွှင်မြူးခြင်း၊ တက်ကြွခြင်းဟူသော ရသခံစားမှုများကို ဖြစ်ပေါ်စေလျက် တရားအသိ၊ ဘဝအသိ၊ လောကအသိအမြင်များကို ပေးနိုင်သော ကဗျာများဖြစ်ကြောင်း လေ့လာတင်ပြသွားမည်ဖြစ်ပါသည်။

^၁ ဇော်ဂျီ၊ ၂၀၀၄၊ ၂၇၆။

၃။ ကဗျာကပေးသော ရသခံစားမှုနှင့် အသိအမြင်များ

၃၊၁။ သူတည်းတစ်ယောက်ချီမျက်ဖြေလင်္ကာ

ဦးစွာ ပုဂံခေတ်စာဆို အနန္တသူရိယအမတ်၏ သူတည်းတစ်ယောက် အစချီမျက်ဖြေလင်္ကာမှပေး သော ရသခံစားမှုနှင့် အသိအမြင်ကို တင်ပြလိုပါသည်။ မြန်မာစာပေလောကတွင် ဤကဗျာနှင့် ပတ်သက်၍ ပုဂံခေတ်ကဗျာဟုတ်မဟုတ် အငြင်းပွားစရာအချက်များကို စာပေသုတေသီများက ထောက်ပြခဲ့ကြသည်။

ဤစာတမ်းတွင် သူတည်းတစ်ယောက် အစချီ မျက်ဖြေလင်္ကာမှာ ပုဂံခေတ်ကဗျာ ဟုတ်မဟုတ် ပညာရှင်များ အငြင်းပွားကြသည့်အချက်ထက် ဤကဗျာကပေးသော ရသခံစားမှုနှင့် အသိအမြင် ကိုသာ အဓိက ဖော်ပြလိုပါသည်။ ကဗျာမှာ-

သူတည်းတစ်ယောက် ချီ မျက်ဖြေလင်္ကာ

- (၁) “သူတည်းတစ်ယောက်၊ ကောင်းဖို့ရောက်မူ၊ သူတစ်ယောက်မှာ၊ ပျက်လင့် ကာသာ၊ ဓမ္မတာတည်း။
- (၂) ရွှေအိမ်နန်းနှင့် ကြွာန်းလည်းခံ၊ မတ်ပေါင်းရံလျက်၊ ပျော်စံရိပ်ငြိမ်၊ စည်းစိမ် မကွာ၊ မင်းချမ်းသာကား၊ သမုဒ္ဒရာ၊ ရေမျက်နှာထက်၊ ခဏတက်သည့်၊ ရေပွက် ပမာ၊ တစ်သက်လျာတည်း။
- (၃) ကြင်နာသနား၊ ငါအားမသတ်၊ ယခုလွတ်လည်း၊ မလွတ်ကြမ္မာ၊ လူတကာတို့၊ ခန္ဓာခိုင်ကျဉ်၊ အတည်မမြဲ၊ ဖောက်လွဲတတ်သည်၊ မချွတ်စရာ၊ သတ္တဝါတည်း။
- (၄) ရှိခိုးကော်ရော်၊ ပူဇော်အကျွန်၊ ပန်ခဲတုံ၏၊ ခိုက်ကြိုဝိဘတ်၊ သံသာစက်၌၊ ကြိုက်လတ်တွန်မူ၊ တုံမယူလို၊ ကြည်ညိုစိတ်သန်၊ သခင်မွန်ကို၊ ချန်ဘိစင်စစ်၊ အမြစ်မဲ့ရေး၊ ခွင့်လျင်ပေး၏၊ သွေးသည်နိစ္စ၊ ငါ့ခန္ဓာတည်း”^၁

ဤကဗျာသည် မြန်မာလူမျိုး၊ ကဗျာဝါသနာပါသူ၊ ကဗျာချစ်မြတ်နိုးသူများ၏စိတ်ကို လွှမ်းမိုးနိုင် စွမ်းရှိသော ကဗျာဖြစ်သည်။

^၁ ဂန္ထဝင်စာပေစာတမ်းများ (ပ)တွဲ၊ ၁၉၉၁၊ ၁၀၇။

ဤကဗျာနှင့်စပ်လျဉ်း၍ ဆရာဦးဖေမောင်တင်က-

“နရပတိစည်သူမင်းကြီးလက်ထက် သက္ကရာဇ် ၅၃၆ ခုနှစ်တွင် မင်းယဉ် နရသီခံ၏ အထိန်းတော် အနန္တသူရိယအမတ်သည် မင်းပြစ်ဒဏ်ရာဒေသကြောင့် သေရမည့်ဆဲဆဲ တွင် ရေးသားခဲ့သော ကဗျာဖြစ်သည်ဟု အများယုံကြည်ကြ၏။ မှတ်သားစံတင် လောက်သော တရားသဘောများ ပါရှိ၏။ ကိုယ်ခန္ဓာစည်းစိမ်ဥစ္စာတို့၏ မမြဲတတ် သော အနိစ္စ သဘောတရားသည် မှန်လေစွတကားဟု ရေးသားသည့်အခါ ထင်မြင် အောက်မေ့ဟန်

လက္ခဏာရှိသည်။ သေရမည့်ဆဲဆဲတွင် ကိုယ်တိုင်ဒိဋ္ဌိ တွေ့ကြုံရ သည့် အကြောင်းကို စပ်ဆိုခဲ့ခြင်းကြောင့် စိတ်ဓာတ်ကို ထိခိုက်အောင် တိုတိုနှင့် ပင်ကောင်းလှ၏”^၁

ဟု သုံးသပ်ဖော်ပြခဲ့သည်။ ဤကဗျာဖတ်ပြီးချိန်တွင် ဦးစွာခံစားရသည်မှာ စိတ်ထိခိုက် ကြေကွဲခြင်း၊ ကွပ်မျက်ခံရမည့်စာဆိုအပေါ် သနားခြင်းဟူသည့် ကရုဏာရသခံစားမှုပင် ဖြစ်သည်။ သေအံ့ဆဲဆဲ တွင် ရေးခဲ့သောကဗျာဟု မထင်ရအောင် တည်ငြိမ်သည့် စိတ်ထား၊ ခွင့်လွှတ်သည်းခံနိုင်သော စိတ်ထား၊ ဒေါသကို ထိန်းသိမ်းနိုင်သည့် စွမ်းအားများကို လေးစားဖွယ်တွေ့ရှိရသည်။

လူတကာတို့ ရှောင်လွှဲမရသည့် သေခြင်းတရား၊ ထိုသေခြင်းတရားသည်ပင် ဖြစ်ရိုးဖြစ်စဉ် ရောဂါဘယခံစား၍ ရင်ဆိုင်ရမည့် သေခြင်းတရားမဟုတ်ဘဲ ရက်စက်စွာကွပ်မျက်ခြင်းခံရမည့် သေခြင်းတရားဖြစ်သည်။ ဤအဖြစ်ဆိုးကို ရဲဝံ့စွာ ရင်ဆိုင်သွားသည့် ခိုင်ကျည်သောစိတ်ထားကို တွေ့ရှိရသဖြင့် အံ့ဩလေးစားဖွယ် အဗ္ဗုတရသကိုဖြစ်ပေါ်စေသည်။ သံသရာတွင် အတုံ့အလှည့်ရှိ ကြောင်း သတိပေးသွားသည်မှာလည်း ကြောက်ရွံ့သံဝေဂယူဖွယ် ဘယာနကရသကို ခံစားမိစေသည်။ ဤသံသရာကြွေးကိုပင်တုံ့မယူလိုကြောင်း၊ ခွင့်လွှတ်ကြောင်း မိမိအသက်ကိုသတ်ရန် စေညွှန်းခဲ့သူကို ရန်သူဟုမမှတ်၊ မိမိအရှင်အဖြစ်သာစွဲမှတ်၍ ရိုသေစွာပင် ဂါရဝပြုခဲ့ကြောင်း တည်ငြိမ်စွာလျှောက်တင် ချက်များက အံ့ဖွယ်စိတ်ထားမြင့်မြတ်မှုကို လှစ်ဟပြနိုင်သဖြင့် အံ့ဩလေးစားမှု အဗ္ဗုတရသနှင့်အတူ

^၁ ဖေမောင်တင်ဦး၊ ၂၀၁၃၊ ၂၇။

စိတ်ထားမြတ်သော ယောက်ျားကောင်းတစ်ဦး၏ လုပ်ရပ်၊ ဆုံးဖြတ်ချက်၊ ခံယူချက်များကို နှစ်သက် လေးစားမှုဟူသည့် ပန်းတိုင်ရသဖြစ်သော သန္တရသသို့ ဆွဲခေါ်သွားနိုင်ပေသည်။ ထို့ပြင် လူသားတို့သည်

“လာဘ- လာဘ်ရခြင်း၊ အလာဘ- လာဘ်မရခြင်း၊ ယသ- အခြွေအရံရှိခြင်း၊ အယသ- အခြွေအရံမရှိခြင်း၊ နိန္ဒာ- ကဲ့ရဲ့ခံရခြင်း၊ ပသံသာ- ချီးမွမ်းခံရခြင်း၊ သုခ- ချမ်းသာခြင်း၊ ဒုက္ခ- ဆင်းရဲခြင်း”^၁

ဟူသော လောကဓံတရား (၈)ပါးနှင့် မလွဲမသွေ ရင်ဆိုင်ကြရပေမည်။ ဤလောကဓံ(၈)ပါးအနက် ချမ်းသာခြင်း၊ ခြွေရံပေါ်ခြင်း၊ လာဘ်ရခြင်း၊ ချီးမွမ်းခံရခြင်းဟူသော အကောင်းလောကဓံများနှင့် ကြုံရလျှင် လောကဓံဟု မမှတ်ယူဘဲ မော်ကြား၊ ပျော်ပါးကာ တရားမေ့တတ်ကြသည်။ ထိုအကောင်း လောကဓံတရားများကို ခံစားရလျှင်လည်း တရားအသိ၊ သတိရှိရန်လိုကြောင်း ထိုစည်းစိမ်ချမ်းသာ များမှာ သမုဒ္ဒရာထက်သို့ ခဏတက်လာသည့် ရေပွက်ပမာ တစ်ဒဂံအချိန်သာဖြစ်ကြောင်း၊ ဆင်းရဲ ဒဏ်သာမက ချမ်းသာခြင်းဒဏ်ကိုလည်း ခံစားနိုင်သည့် သတိတရားရှိရန်လိုကြောင်း မီးမောင်းထိုး ပြနိုင်သည်။

“သစ်ငုတ်မြင့်တုံ၊ မြက်မြင့်တုံ” ဟူသည့် စကားပုံအတိုင်း သံသရာတွင် အတုံအလှည့်ရှိမဲ့ ဖြစ်ကြောင်း သတိတရားရစေသည်။ အနိုင်ရတိုင်း မော်ကြားမောက်မာသူမဖြစ်သင့်ကြောင်း၊ ခန္ဓာရှိ သည့် သတ္တဝါတိုင်း မတည်မြဲ ဖောက်ပြန်ပျက်စီးရမည်မှာ ဓမ္မတာဖြစ်ကြောင်း၊ ခန္ဓာအပါအဝင် စည်းစိမ်ဥစ္စာမှန်သမျှ မတည်မြဲသည့် အနိစ္စသဘောဆောင်ကြောင်း ညွှန်ပြကာ တရားအသိအမြင် လောကအသိအမြင် ပေးစွမ်းနိုင်သည်။ စိတ်ထားတတ်ရန် ညွှန်ပြနိုင်သည့် ကဗျာကောင်းဖြစ်သည်။

လူ့ဘဝ၏ လောကဓံသဘော၊ တရားသဘောတို့ကို စိတ်ထိခိုက်လှုပ်ရှားဖွယ် ရသခံစားမှုများ နှင့်အတူ သိမြင်ဆင်ခြင်နိုင်ရန် လှစ်ဟဖွင့်ဆိုနိုင်သည့် ကဗျာကောင်းဖြစ်ပါသည်။

^၁ ထွန်းမြင့်၊ ဦး၊ ဒဂုန်။ ၁၉၉၇၊ ၁၇၂။

၃၂၂။ ငါ့ကိုကွယ်၊ အမယ်ကြီးနဲ့ ဘကြီးဖျက်လို့ ချီအိုင်ချင်း

ဆက်လက်၍ ညောင်ရမ်းခေတ်စာဆို တောင်တွင်းရှင်ငြိမ်းမယ်၏ “ငါ့ကိုကွယ်အမယ်ကြီးနဲ့ ဘကြီးဖျက်လို့” အစချီ အိုင်ချင်းမှရရှိသော ရသနှင့် အသိအမြင်ကို ဖော်ပြလိုပါသည်။ ကဗျာတွင်-

ငါ့ကိုကွယ်၊ အမယ်ကြီးနဲ့ ဘကြီးဖျက်လို့ ချီအိုင်ချင်း

“ချစ်တဲ့သူငယ်လေ၊ သူငယ်ချင်းကောင်း၊ ယောင်းမတို့လေ၊

ငါ့ကိုကွယ်၊ အမယ်ကြီးနဲ့ ဘကြီးဖျက်လို့၊

အိမ်ထောင်လေးမှာ၊ ဆူးတွေချလျက်၊

ဖျက်နဲငယ်မှ စေ့စုံ၊ လှေကားခုံမှာ၊

ဂဠုန်မောင့်ကြောင့်၊ စောင့်တော့တယ်။

လှေကားဦးမှာ၊ ဘီလူးမောင့်ကြောင့် ထိုင်တော့တယ်။

လှေကားခြေမှာ၊ ဆူးလေမောင့်ကြောင့် ကြဲတော့တယ်။

အိမ်တိုင်တိုင်းမှာ၊ နွားရိုင်းမောင့်ကြောင့် ချည်တော့တယ်။

ထရံကြားမှာ၊ ဓားသွားမောင့်ကြောင့် ထားတော့တယ်။

အိမ်ကြမ်းကြားမှာ၊ အပ်သွားမောင့်ကြောင့် စီတော့တယ်။

အိမ်ခေါင်မိုးမှာ၊ လှံထောင်မောင့်ကြောင့် စိုက်တော့တယ်။

မောင်လည်းဘယ်က တက်ပါမယ်၊ မယ်လည်းဘယ်က ဆင်းရမယ်။

ကြွက်ကဲ့အယောင်၊ ကြောင်ရဲ့အလား၊
ထုပ်နှင့်လျှောက်ကို၊ ထိုးဖောက်သွားက၊
ထုပ်သားငယ်မှမခိုင်၊ ထုပ်တိုင်ငယ်မှပိုးထိုး၊
အလယ်ကောင် ဖောင်ဖောင်ကျိုးက၊ သူခိုးဆိုညွှန်း၊
မီးလင်းထွန်း၍၊ ဝန်းကြသောခါ၊
ဆင်းချခုန်၊ လမ်းဆုံရောက်ပါလိမ့်မလားရှင်။
ညီမအထွေး၊ ရွှေတလေးကို၊
ပြေး၍ကြည့်ချေ၊ စေလေသောအခါ၊
အမယ်မမ၊ ကျွန်မခဲအို၊
မြင်ခဲ့ငါတို့၊ ရွာလယ်ကောင် ခုတင်ကြီးမှာ စောင်းတီးလို့လေး။”^၁

ဤကဗျာသည် ရှေးကမြန်မာလုံမပျို့၊ လုလင်ပျို့တို့၏ အချစ်ရေးကို ဟာသနှော၍ ဖွဲ့ဆို ထားသော ကဗျာဖြစ်သည်။ ရှေးက မြန်မာလုံမပျို့၊ လုလင်ပျို့တို့သည် တစ်ဦးသဘောကို တစ်ဦး အချိန်ယူ၍ လေ့လာပြီးမှ အိမ်ရာတည်ထောင်ကြသည်။ လေ့လာဆဲကာလတွင် မိန်းကလေးများက မိဘမောင်ဖွား အုပ်ထိန်းမှုအောက်တွင် စည်းကမ်းသေဝပ်စွာ နေထိုင်ကြရသည်။ ဤကဗျာပါ လုလင် ပျို့ကို မိန်းကလေး၏ မိဘမောင်ဖွားများက သဘောတွေ့ဟန်မရှိပေ။ ထို့ကြောင့် ဘီလူး၊ သဘက်လို ကြောက်မက်ဖွယ်ကောင်းသော အရှိန်အဝါရှိသော အကိုမောင်ဖွား၊ ဘကြီး၊ ဦးလေးတို့၏ စောင့်ရှောက် မှု၊ စည်းစနစ်သိက္ခာကြီးသော ဒွေးကြီး၊ ဒွေးလေးတို့၏ အုပ်ထိန်းမှုကြောင့် မိန်းကလေးခမျာ ချစ်သူနှင့် တွေ့ခွင့်ရဟန်မတူပေ။

ဤနေရာတွင် ဘီလူး၊ သဘက်၊ ဂဠုန်ဟူသည် မြန်မာ့ရိုးရာအရ စီရင်ထားသော အင်းအိုင် လက်ဖွဲ့အဆောင်များ မဟုတ်နိုင်၊ ဘီလူး၊ သဘက်၊ ဂဠုန်တမျှ ကြောက်မက်ဖွယ် ခက်ထန်သော အားကောင်းကြံ့ခိုင်သည့် အကိုမောင်ဖွားများကို ဆိုလိုဟန်ရှိပါသည်။ ချစ်သူကို တွေ့ခွင့်မရရှာသည့် မိဘကိုမလွန်ဆန်နိုင်သည့် မိန်းကလေးအနေနှင့် မိမိထံ ချစ်သူက ခိုးကြောင်ခိုးဝှက် လာရောက် တွေ့ဆုံရန် ကြိုးစားလျှင် ဒုက္ခရောက်မည်ကို စိုးရိမ်ပြန်သည်။ ဤသို့ ချစ်ဒုက္ခသောကခံစားနေရသော မိန်းကလေးက ချစ်သူလည်း မိမိကဲ့သို့ ခံစားနေရမည်ဟူသော အတွေးအထင်ဖြင့် ညီမငယ်ကို သွားရောက်ကြည့်ခိုင်းရာ ချစ်သူလုလင်ပျို့မှာ ရွာလယ်ကောင်တွင် ကာလသားတစ်သိုက်နှင့် စောင်းတီးပျော်ပါးနေကြောင်းကို တွေ့လိုက်ရသည်ဟူ၍ ကဗျာကို အဆုံးသတ်ရေးဖွဲ့သည်။

ဤကဗျာသည် မြန်မာ့ကျေးလက်လူငယ်သဘာဝ ချစ်ခြင်းအကြောင်းကို ဖွဲ့ဆိုထားသော သိင်္ဂီရသမြောက်ကဗျာလေးဖြစ်သည်။ သိင်္ဂီရသအပြင် ချစ်ဒုက္ခနှင့် သောကအပူကို မျှိုသိပ်ခံစား

နေရသော လုံမပျို၏အဖြစ်ကို စာနာသနားဖွယ် တွေ့ရှိရသဖြင့် ကရုဏာရသကို ခံစားရစေသည်။ ကဗျာအဆုံးတွင်မူ အလွမ်းထက် ပြုံးချင်ဖွယ်ဖြစ်ရပ်လေးကို ဖော်ပြကာ ရွှင်မြူးဖွယ်ဟာသာရသနှော၍ အဆုံးသတ်ထားပုံမှာ နှစ်သက်ဖွယ်ဖြစ်သည်။

အိုင်ချင်းစာဆိုပေးလိုသည့် ရည်ရွယ်ချက်မှာ ချစ်မှုရေးရာ အိမ်ရာတည်ထောင်ရန်အတွက် အိမ်ထောင်ဖက်ရွေးရာတွင် လူကြီးမိဘတို့ချမှတ်ထားသည့် စည်းမျဉ်းကိုလိုက်နာ၍ လူရိုးလူကောင်း ကို ရွေးချယ်တွေ့ဆုံနိုင်ရန်၊ မိမိကို တကယ်ချစ်သူ မချစ်သူ ခွဲခြားနားလည်စေရန် ဖြစ်သည်။ “အိမ် ထောင်မှု၊ ဘုရားတည်၊ ဆေးမင်ရည်စုတ်ထိုး၊ ဤသုံးမျိုး၊ ချက်မပိုင်လျှင် နောင်ပြင်ရန်ခက်သည့် အမျိုး” ဟူသည့်ဆိုင် ဆိုရိုးစကားအတိုင်း လူကြီးမိဘတို့ ဆုံးမစကားကို လိုက်နာသင့်ကြောင်း၊ မိန်းကလေးနှင့် ယောက်ျားလေးတို့၏ ဘဝရပ်တည်မှုတွင် “အချစ်”နှင့်ပတ်သက်၍ အရေးပါပုံ ခံစားပုံ အနေအထားခြင်း မတူကြောင်း၊ အထင်နှင့်ဆုံးဖြတ်ချက်မှာ တစ်ခါတစ်ရံ မှားယွင်းတတ် ကြောင်း၊ စိတ်ကူးအထင်ထက် ဒိဋ္ဌဓမ္မလက်တွေ့ကျကျ ဆုံးဖြတ်ရန်လိုကြောင်း အသိအမြင်ကို နှစ်သက်ရွှင်မြူးဖွယ် ရသခံစားမှုရောစွက်၍ ဖော်ပြသွားသည်။

၃၊၃။ ဖိုးမောင်လာပြီ

ဆက်လက်၍ ဆရာမင်းသုဝဏ်၏ “ဖိုးမောင်လာပြီ” ကဗျာမှပေးသော ရသခံစားမှုနှင့် အသိ အမြင်ကို လေ့လာတင်ပြလိုပါသည်။ ဆရာမင်းသုဝဏ်သည် ကလေးကဗျာများ၊ သဘာဝလောက ရှုခင်းများအကြောင်း ဖွဲ့နွဲ့ရာတွင် အလွန်ထင်ရှားသော ကဗျာစာဆိုဖြစ်သည်။ တိုင်းပြည်အရေးကိစ္စ များကိုလည်း ကြွေးကြော်ဖွဲ့နွဲ့တတ်သည်။ ယခု “ဖိုးမောင်လာပြီ”ကဗျာတွင် အချစ်ကိစ္စမပါ ၊ တောတောင်သဘာဝရှုခင်းအဖွဲ့များမပါ၊ တံငါသည် ဖိုးမောင်အကြောင်းကို ရိုးရှင်းစွာ ဖွဲ့နွဲ့ထား သော်လည်းစွဲမက်ရင်နှင့်ဖွယ်ကဗျာလေးတစ်ပုဒ်အဖြစ် ခံစားမိပါသည်။ ကဗျာတွင်-

ဖိုးမောင်လာပြီ

မိုင်းညိုညှဉ်ရိပ်၊ လူခြေတိတ်၌
ရေဆိပ်အနား၊ ရွာတံခါးမှ
ဂုတ်ကျားကျယ်လောင်၊ ဆီးကြိုဟောင်သော်
“ဖိုးမောင်လာပြီ” ဆိုကြသည်၊
ဟောင်သံရပ်၍၊ ထပ်ကြပ်ပေါ်လာ

အသံမှာကား၊ ညခါငါးထောင်
မောင်ဖိုးမောင်သည်၊ ရွာတောင်ချောင်းက ပြန်ခဲ့ပြီ
ဖိုးမောင်သံကြား၊ ကင်းသမားက
တံခါးကြီးအောက်၊ မလွယ်ပေါက်ကို
တစ်ယောက်ဝင်သာ၊ ဖွင့်လိုက်ပါသော်
ယာတွင်အုပ်ဆောင်း၊ ဝဲလက်ချောင်းနှင့်
ခါးစောင်းကိုယ်ကိုင်း၊ ငါးပလိုင်းကို
လွယ်သိုင်းပြီးလျှင်၊ ရွာကိုဝင်သည်
လူပင်လေလား၊ တစ္ဆေလား။
တစ္ဆေမကြောက်၊ မြေမကြောက်ဘဲ
တစ်ယောက်တည်းပင်၊ ညဉ့်မှောင်တွင်၌
သူလျှင်ငါးရှာ၊ မကျွေးပါက
ထိုရွာသူသား လူအများတို့
ငါးစိုငါးစိမ်းငတ်ပေလိမ့်
ဆောင်းတစ်ည၌
ချမ်းမြေ့စိမ့်အေး၊ လခြမ်းကွေး၍
ရွာဘေးကျီပျက်၊ မှောင်နက်နက်မှ
ဇီးကွက်ကအော်၊ တောက်တဲ့ကြော်စဉ်
ရွာပေါ်လွှမ်းအောင်၊ ဂုတ်ကျားဟောင်သည်
ဖိုးမောင်လာချိန်ပါတကား
သို့ဖြစ်သော်ငြား၊ ခါတစ်ပါးသို့
တံခါးဝင်လို သူမဆိုဘဲ
‘မောင်းကိုထုပါ၊ လူစုပါဟေ့
ရွာကိုဘေးမှ၊ ကာကွယ်ကြလော့
ဓားပြငါ့အား၊ ဖမ်း၍ထား’ဟု
စကားမဆုံး၊ ဟစ်အော်တုန်းတွင်
ဒိုင်းဒုန်းဒိန်းသံ၊ ရွာလုံးညံသည်

ချောင်းယံ ပဲ့တင်ထပ်သတည်း။
ဖိုးမောင်နီဂုံး၊ ဤတွင်ဆုံးလည်း
ရွာလုံးစိတ်တွင်၊ ဖိုးမောင်ဝင်၍
ပဲ့တင်ထပ်ကာ၊ ဟီးလျက်ပါတည့်
ဘယ်ခါမဆို၊ ဆီးလင့်ကြိုသို့
မှိုင်းညှို့ညှို့ရိပ်၊ လူခြေတိတ်၌
ရေဆိပ်အနား၊ ရွာတံခါးမှ
ဂုတ်ကျားကျယ်လောင်၊ ရမ်းရော်ဟောင်သော်
ဖိုးမောင်လာပြီဆိုမြဲပင်။”^၁

ဖိုးမောင်ကဗျာတွင် ဆရာက တောအလေ့အထကို ပေါ်လွင်အောင်ပြသည်။ ဖိုးမောင်ပြန်လာချိန်တိုင်း
ခွေးဟောင်ပုံ၊ ကင်းသမားက တံခါးမလွယ်ပေါက်ကိုဖွင့်ပေးပုံ၊ လက်တစ်ဖက်တွင် မီးအုပ်ဆောင်း၊ တစ်ဖက်တွင်
လှော်တက်ကိုင်ကာ ငါးပလိုင်းလွယ်၍ ကိုယ်ကိုငုံ့ကိုင်ရင်း တံခါးပေါက်မှ ငုံ့လျှိုး ဝင်လာပုံကို စာဖတ်သူ၏
မျက်စိထဲတွင် ထင်ရှားပေါ်လွင်အောင် ဖော်ပြထားသည်။ လူခြေတိတ်၍ မဲမှောင်နေချိန်၊ မှောင်ထဲမည်းထဲမှ^၂
ဇီးကွက်အော်သံ၊ တောက်တဲ့အော်သံ၊ ဂုတ်ကျားဟောင်သံများ ရောနှော၍ ကျေးတောရွာ၏ လမိုက်ညမြင်ကွင်းကို
မြင်ယောင်ကြားယောင်လာသယောင် ထင်ရသည်။

^၁ မင်းသုဝဏ်၊မင်းယုဝေ။ ၁၉၆၇၊ ၂၉၃။

ဤသို့ မဲမှောင်နေသော ဆောင်းညတစ်ညတွင် ဖိုးမောင်နောက်မှ ဓားပြပါလာသည်။ ဖိုးမောင် သည်
ဓားပြပါလာမှန်း အန္တရာယ်ပေးမည်မှန်းသိသော်လည်း ကိုယ်လွတ်မရုန်း၊ ရပ်ရွာချစ်စိတ်၊ ပင်ကိုယ်အသိစိတ်ဖြင့်
ရွာတွင်းသို့ ဓားပြအဝင်မခံဘဲ ရွာကိုအသိပေးနှိုးဆော်ရင်း အသေခံခဲ့သည်။ ဆင်းရဲသောဖိုးမောင်၊
ရိုးသားသောဖိုးမောင်၊ တံငါသည်ဖိုးမောင်၊ ရွာကိုကယ်ဆယ်ခဲ့သည့် ဖိုးမောင် ၏ဖြစ်ရပ်ကို “ဖိုးမောင်နီဂုံး၊
ဤတွင်ဆုံးသည်”ဟု ကဗျာဆရာကဖော်ပြသည်။ သို့သော် ရွာသူ၊ ရွာသားများအတွက် ကျေးဇူးရှင်ဖိုးမောင်၏
အရိပ်အယောင်တို့ ပျောက်ကွယ်မသွားသလို စာဖတ်သူ များ၏ ရင်ထဲသို့ ဖိုးမောင်က
စူးနစ်စွာဝင်ရောက်သွားသည်။ ကဗျာ၏ နိဂုံးတွင်-

“ရေဆိပ်အနား၊ ရွာတံခါးမှ၊
ဂုတ်ကျားကျယ်လောင်၊ ရမ်းရော်ဟောင်သော်၊
ဖိုးမောင်လာပြီဆိုမြဲပင်”

ဟူသောအဖွဲ့က အများအကျိုးအတွက် အသက်စတေးကာ ပေးဆပ်ခဲ့သော ဖိုးမောင်၊ လူသေသော် လည်း နာမည်မသေသော ဖိုးမောင်၏ ဂုဏ်ဒြပ်ကို ပေါ်လွင်စေသည်။ ထို့ပြင် ဖိုးမောင်ကို သတိရ နေဆဲ၊ သူ့ကျေးဇူးကို သတိရတမ်းတဆဲဖြစ်သော ရွာသူရွာသားများ၏ ကျေးဇူးသိစိတ်ကို နှစ်သက် ကျေနပ်မှုဖြစ်ပေါ်စေသည်။ အညတရဖြစ်သော်လည်း သူရဲကောင်းစိတ်ဓာတ်ရှိသည့် ဖိုးမောင်ကို သနားစိတ်နှင့် ဖိုးမောင်၏ လုပ်ရပ်ဂုဏ်ဒြပ်အတွက် ကျေနပ်နှစ်သက်ဂုဏ်ယူစိတ် ကရုဏာရသနှင့် သန္တရသတို့ တစ်ပြိုင်နက် ခံစားရရှိစေသည်။

ဆင်းရဲသော်လည်း ရိုးဖြောင့်သတ္တိရှိသော၊ လုပ်သင့်လုပ်ထိုက်သော အလုပ်ကို ရဲဝံ့မှန်ကန်စွာ ဆုံးဖြတ်ဆောင်ရွက်ခဲ့သော ဖိုးမောင်၏ စိတ်ဓာတ်နှင့်လုပ်ရပ်ကို နှစ်သက်စိတ်နှင့်အတူ ဖိုးမောင်လို အတ္တ-ကိုယ်ကျိုးထက် ပရ-အများအကျိုးကို ဦးစားပေးခဲ့သည့် စိတ်ကောင်းစိတ်မြတ်ကို လေးစား စိတ် ဖြစ်ပေါ်စေသည်။ လောကတွင် လူသေသော်လည်း နာမည်မသေသော လူကောင်း၊ လူတော်၊ လူပီသသူတစ်ဦးအဖြစ် ရပ်တည်လိုသည့်ဆန္ဒနှင့်အသိတရားတို့ကို ရင်ထဲသို့ သိမ်မွေ့စွာ ရောက်ရှိ သွားအောင် နှိုးဆော်ပေးနိုင်သော ကဗျာကောင်းတစ်ပုဒ်ဖြစ်ပါသည်။

၃၂၄။ လှိုင်းကလေးသင်

ဆက်လက်၍ ဆရာဇော်ဂျီ၏ “လှိုင်းကလေးသင်” ကဗျာမှပေးသော ရသနှင့် အသိအမြင်ကို လေ့လာတင်ပြလိုပါသည်။ ဆရာဇော်ဂျီသည် မြန်မာစာပေသမိုင်းတွင် ခေတ်စမ်းစာပေကို ဦးဆောင်ခဲ့သူတစ်ဦးဖြစ်သလို “ဗေဒါလမ်း” ကဗျာစု၊ “ငဲ့ညီပြောင်ဝင်း မောင်သစ်ဆင်း” ကဗျာစု၊ “ရှေးခေတ်ပုဂံပြည်” ကဗျာများကြောင့် ကျော်ကြားသော စာဆိုတစ်ဦးဖြစ်သည်။ ကဗျာကဝိ၊ စာပေကဝိ ဆရာ ဇော်ဂျီသည် အမျိုးသားရေးလက္ခဏာအမြင်၊ လောကအမြင်များဖြင့် လူ့ဘောင်အကျိုးပြု ကဗျာ၊ ဝတ္ထု၊ ဆောင်းပါး၊ ပြဇာတ်စာပေမျိုးစုံ ရေးသားခဲ့သူဖြစ်သည်။ ဤ “လှိုင်းကလေးသင်” ကဗျာတွင် စာဆိုစေတနာကို လေ့လာတွေ့ရှိနိုင်သည်။ “လှိုင်းကလေးသင်” ကဗျာတွင်-

လှိုင်းကလေးသင်

ပြင်ကျယ်ကျယ် ပင်လယ်စခန်းဆီက
သည်ကမ်းယံ စေတီဦးဆီသို့
ဖူးမျှော်ရန် ရောက်လာရင်းပေလော့
ဘော... အို အချင်း လှိုင်းကလေးသင်။
ကမ်းရောက်ပြန်တော့
တစ်ဖျောက်မြည်သံကျူ၍
နကိုယ်မူ စွန့်ကာပစ်ပါလို့
မူသစ်တဆင်ခြယ်၍
ပြင်ကျယ်ကျယ် ပင်လယ်စခန်းဆီသို့
မြန်းကြွမည့်သွင်
ဘယ်ဒေသဆီက
သင်ကြွကာ သည်ကိုလာ၍
ဘယ်နေရာ ဘယ်ဒေသဆီသို့
မြန်းမယ်လို့ သင်ဟန်ပြင်
ကြံချင်ဘု သည်အရေး။
သို့ကတဲ
စိတ်ထဲငါဆင်ခြင်ခဲ့
သင်လာစဉ် ပင်လယ်လမ်းမှာဖြင့်

မုန်တိုင်းလေ လှိုင်းရေကြမ်းသော်ကြောင့်
ပန်းခဲသူ ဇင်ယော်ငှက်ကိုလ
ကျောထက်ဝယ် ဆောင်ယူသယ်၍
ဖောင်သဖွယ် သင်ကူမတယ်လို့
တွေးဆကာ သည်အလွမ်းရယ်နဲ့
ဝမ်းမြောက်တယ်လေး။”^၁

ဤကဗျာကို သာမန်ဖတ်ကြည့်ပါက ပင်လယ်ပြင်သဘာဝလှိုင်းကလေးအကြောင်း၊ ဇင်ယော်ငှက်
ကလေးအကြောင်းကိုသာ ဖွဲ့ဆိုထားသည်ဟု ထင်မြင်ဖွယ်ရှိသည်။ သို့သော် ဤကဗျာကို သေချာစွာ
ဖတ်ရှုတွေးတောမိပါက ကဗျာဆရာ၏ တင်စားမှု သင်္ကေတနိမိတ်ပုံများကို ခံစားနားလည်သိမြင် နိုင်သည်။
အပြောကျယ်သော ပင်လယ်ပြင်သည် လူ့လောကပြင်ကျယ်ကိုတင်စားပြီး လှိုင်းကလေး သည် သူ၊ ငါ ၊
သင်စသောလူသားများ၊ မုန်တိုင်းမိ၍ အတောင်ညောင်းသူ ဇင်ယော်ငှက်ငယ်မှာ ဆင်းရဲဒုက္ခရောက်သူ၊ ဘဝတွင်
အားနည်းနံ့ချာသူ၊ ကံမကောင်း အကြောင်းမလှသူများကို တင်စား ဖွဲ့ဆိုကြောင်း နားလည်လာရသည်။

သူ၊ ငါ စသော လူသားများအနေဖြင့် မည်သည့်ဘဝက လာသည်၊ မည်သည့်ဘဝကိုရောက် မည်၊
မည်သည့်အသိုင်းအဝိုင်း မည်သည့် အဆင့်အတန်းသို့ ရောက်မည် စသည်ဖြင့် ဘုရားမှတစ်ပါး မသိနိုင်သော
ဘဝသံသရာကို အချိန်ကုန်ခံ၍ တွေးတော ကြံဆနေသည်ထက်ဘဝတွင် အစုန်အဆန် ကျင်လည်လှုပ်ရှားရင်း
ဘဝတစ်ကွေ့တွင် အမှတ်မထင်ဖြစ်စေ၊ မလွဲမရှောင်သာဖြစ်စေ ကြုံတွေ့ရ သည့် ဆင်းရဲဒုက္ခရောက်သူ၊
အားနည်းနံ့ချာသူ၊ ကူညီပေးမရမည့်သူများ၏ အကျိုးနှင့် လိုအပ်ချက်များ

^၁ ဇော်ကျီ၊ ဆရာ၊ ၁၉၉၃၊ ၄၃။

ကို တတ်နိုင်သမျှ လက်တွေ့ကူညီဆောင်ရွက်ပေးခြင်းသည်သာ အကောင်းဆုံးဖြစ်ကြောင်း ဖော်ပြ သည်။

“ကြီးသူကို ရိုသေ၊ ရွယ်တူကိုလေးစား၊ ငယ်သူကိုသနား” ဆိုသကဲ့သို့ မိမိထက် အစစ
အရာရာနိမ့်ပါးသူ၊ လိုအပ်သူများကို ဖောင်သဖွယ် ကူညီပံ့ပိုးပေးနိုင်သည့် စိတ်ကောင်းစေတနာကောင်း ကို
မွေးမြူတတ်စေရန် ညွှန်ပြနိုင်သည့် နှစ်သက်ဖွယ် သန္တရသပေးစွမ်းနိုင်သော ကဗျာကောင်း အဖြစ်
ခံစားမိပါသည်။

မိမိထက်နိမ့်ပါးချို့တဲ့သူ မပြည့်စုံ၍လိုအပ်နေသူများကို မိမိတတ်နိုင်သလောက် နှုတ်၏
ဆောင်မကူညီခြင်း၊ လက်၏ဆောင်မကူညီခြင်းဖြင့် လူ့ဘဝကို တန်ဖိုးရှိစွာ နေထိုင်ခြင်းသည်
အမြတ်ဆုံးလုပ်ရပ်ဖြစ်သည်။ ဘဝသံသရာတွင် ကျင်လည်နေသည့် လူသားတစ်ဦးအနေနှင့် လူ့ဘဝ ရောက်စဉ်

တစ်ခဏတွင် ကူညီရိုင်းပင်းတတ်သော လေးစားဖွယ်စိတ်ထားနှင့် လောကအလှဆင်သူ ဖြစ်ရန်၊ လောကအကျိုး၊ လူသားအကျိုးဆောင်ရွက်နိုင်ရန် အသိတရားကို လှုပ်နှိုးပြလိုက်သကဲ့သို့ ရှိပါသည်။

၃.၅။ သူရဲကောင်းသုံးယောက်နှင့် ခရီးသည်

နောက်ဆုံးအနေနှင့် ငွေတာရီ၏ “သူရဲကောင်းသုံးယောက်နှင့် ခရီးသည်” ကဗျာမှရရှိသော ရသခံစားမှုနှင့် ဘဝအသိအမြင်ကို တင်ပြသွားမည်ဖြစ်ပါသည်။ ငွေတာရီ (ခေါ်) ဆရာမဒေါ်ခင်ရီ၏ “သူရဲကောင်းသုံးယောက်နှင့် ခရီးသည်” ကဗျာမှာ လင်္ကာကဗျာတိုလေးတစ်ပုဒ်ပင်ဖြစ်သော်လည်း အနက်အဓိပ္ပာယ်မှာ လေးနက်ကျယ်ဝန်းလှသည်။ လူ့ဘုံလောကသို့ ရောက်ရှိလာကြသည့် လူသား တိုင်း လောကဓံတရား အခက်အခဲများနှင့် မလွဲမသွေ ရင်ဆိုင်ကြရမည်ဖြစ်သည်။ ဤသို့ ရင်ဆိုင်ရ လျှင် လူသားတိုင်းထားရှိရမည့် စိတ်ထားခံယူချက်ကို သတိပြုနိုင်အောင် ဖော်ညွှန်းပေးသည့် ကဗျာဖြစ်သည်။ ကဗျာမှာ-

သူရဲကောင်းသုံးယောက်နှင့် ခရီးသည်

စုံရိပ်မြိုင်ဆွယ်၊ ကန္တာလယ်
အို... ဘယ် ယောက်ျား ခရီးသွား။
ဖော်လည်းမဆွယ်၊ တစ်ကိုယ်ငယ်
အိုဘယ်လူသား ကြောက်ဘူးလား။
ဤသို့မေးသော်
ရွှင်အေးကြည်သာ၊ ပြုံးမျက်နှာနှင့်
အို... ဘာကိုထောက်၊ ကြောက်ရမလဲ
သဟဲဖော်ညို့၊ သတ္တိရှိပြီ
ချစ်သည့်သဟာ၊ ဇွဲလည်းပါ၍
မကွာထပ်လောင်း၊ ငယ်ကပေါင်းသည့်
ဆွေကောင်းလုံ့လ၊ တူတကွတည့်
ဘေးကတူယှဉ်၊ ပါခဲ့လျှင်သော်
ငဲ့တွင်သေချာ အောင်ဖို့ရာတည့်။
ယောက်ျားငဲ့ကိုယ်၊ မြွက်ဟဆို
ဖော်မလိုဘဲ တစ်ကိုယ်တဲ(တည်း)
တော်ပေလူမော် ပွဲတိုင်းကျော်

သုံးဖော်ဆွေလဲ(လည်း)။

တူယှဉ်တွဲသည်

အောင်မြဲမှုချ အောင်မည်ပ။”^၁

ဟူ၍ ကဗျာတွင် ကန္တာရခရီး၌ အဖော်မပါဘဲ တစ်ကိုယ်တည်းခရီးသွားနေသည့် ခရီးသွား ယောက်ျားကို ဖန်တီးဖော်ပြသည်။ ထိုခရီးသွားကို စာဆိုက ယခုကဲ့သို့ တစ်ကိုယ်တည်း ခရီးသွား နေသည်ကို မကြောက်ဘူးလားဟု မေးမြန်းပုံ၊ ဤတွင် ခရီးသည်က မိမိတွင် မိတ်ဆွေကောင်းသုံးဦး နှင့်တူသည့် ‘အလုပ်တစ်ခုကို အားမလျှော့ဘဲ စွဲစွဲမြဲမြဲလုပ်နိုင်သော ဇွဲဟူသည့် စွမ်းရည်၊ ရဲရင့်ခြင်း ဟူသည့် သတ္တိ၊ ကြိုးစားအားထုတ်ခြင်းဟူသည့် လုံ့လ’ဟူသော ဂုဏ်ရည်သုံးရပ် ယှဉ်တွဲပါလာသည့်

^၁ ငွေတာရီ၊ ၁၉၁၅၊ ၅၀။

အတွက် မည်သည့်အခက်အခဲ အတားအဆီးကိုမျှ မမှုပုံ၊ အခက်အခဲမှန်သမျှ ဇွဲ၊ သတ္တိ၊ လုံ့လဟူသည့် ဂုဏ်ရည်သုံးရပ်ကို လက်ကိုင်ပြုကာ ရင်ဆိုင်သွားလျှင် အောင်မြင်မှုများကို ဧကန်မုချရနိုင်မည် ဖြစ်ကြောင်း ပြောကြားပုံ၊ ခရီးသည်၏ အဖြေစကားကို မေးမြန်းသူစာဆိုက မှန်ကန်ကြောင်း ထောက်ခံသည့်အပြင် ဇွဲ၊ သတ္တိ၊ လုံ့လရှိသူတိုင်းအတွက် အောင်မြင်မှုပန်းတိုင်သို့ မုချလှမ်းနိုင်မည် ဖြစ်ကြောင်း မှတ်ချက်ချပုံဖြင့် အဆုံးသတ်ထားပါသည်။

ကဗျာပါ အကြောင်းအရာမှာ ဤမျှသာဖြစ်သော်လည်း အနက်အဓိပ္ပာယ်မှာ ကျယ်ဝန်းလှ သည်။ ကဗျာပါ ခရီးသွားသည် သံသရာခရီးသည်လူသားအားလုံးကို ကိုယ်စားပြုနိုင်သည်။ ခက်ခဲ ကြမ်းတမ်းသော ကန္တာရခရီးမှာ လူသားတို့ မလွဲမသွေ ဖြတ်သန်းရမည့် လူ့ဘဝခရီးရှည်တစ် လျှောက်လုံးကို ဆိုလိုသည်။ မိတ်ဆွေသုံးဦးမှာ ဇွဲ၊ သတ္တိ၊ လုံ့လဟူသည့် ဂုဏ်ရည်သုံးရပ်ကို ဆိုလို သည်။

လူသားအားလုံးသည် လူ့ဘဝခရီးရှည်ကြီးကို ဖြတ်သန်းကြရာတွင် ဘဝကို ရှုံးတစ်ခါ နိုင်တစ်လှည့် ဖြတ်သန်းကြရပေမည်။ ပျော်ရွှင်စရာအဖြစ်များနှင့်လည်း တွေ့နိုင်သည်။ ဝမ်းနည်း ကြေကွဲဖွယ်ရာ နေ့ရက်များနှင့်လည်း ကြုံနိုင်သည်။ မော်ကြားရသည့်အခါများလည်း ရှိနိုင်သလို ခေါင်းငုံ့ငိုကြွေးရသည့် ဝမ်းနည်းဖွယ်အဖြစ်များကိုလည်း ရင်ဆိုင်ကြရပေမည်။ သို့သော် မည်သည့် အခက်အခဲမျိုးကို ကြုံတွေ့ပါစေ ဒူးမထောက်လက်မမြှောက်ဘဲ ရင်ဆိုင်နိုင်သည့် ခွန်အားများကို မွေးမြူထားရှိရပေမည်။ ထိုခွန်အားများမှာ ဇွဲ၊ သတ္တိ၊ လုံ့လတို့ပင် ဖြစ်သည်။

လောကလူသားတိုင်း ဇွဲ၊ သတ္တိ၊ လုံ့လတို့နှင့် ပြည့်စုံနေမည်ဆိုပါက “တောင်ကြီးလည်း ဖဝါးအောက်ရောက်အောင် တက်နိုင်သည်။ လှိုင်းကြီးလည်း လှေအောက်ရောက်အောင် လှော်နိုင် မည်” ဖြစ်သည်။ လူသားတိုင်း ဇွဲ၊ သတ္တိ၊ လုံ့လတို့ကို လက်ကိုင်ထားကြိုးစားပါက “ငုပ်မိသဲတိုင်၊

တက်နိုင်ဖူးရောက်” ဆိုသည့် စကားပုံအတိုင်း အထွတ်အထိပ်၊ အခေါင်အဖျားအထိရောက်အောင် အောင်မြင်နိုင်ကြပေမည်။ ရည်ရွယ်ချက်ကောင်းမွန်သော ဤကဗျာကို ဖတ်မိတိုင်း ဘဝတွင် တက်ကြွ စွာ ကြိုးစားလိုစိတ် ဝီရိယ ခံစားရကာ နှစ်သက်ကျေနပ်မှု သန္တရသများ ဖြစ်ပေါ်စေသည်။

စာဆိုငွေတာရီသည် ငယ်စဉ်က ကျန်းမာရေးချို့တဲ့မှုကြောင့် ပညာကို ဆုံးခန်းတိုင်အောင် မသင်ကြားနိုင်ခဲ့ပေ။ သို့သော် စာဆိုငွေတာရီသည် ဘဝကိုအရှုံးမပေး၊ အားမငယ်ဘဲ သူ၏ ကဗျာပါ စာသားအတိုင်း ဇွဲ၊ သတ္တိ၊ လုံ့လတို့ကို လက်ကိုင်ပြုကြိုးစားခဲ့သဖြင့် စာပေဗိမာန်ဆုပိုင်ရှင်အဖြစ် ရပ်တည်နိုင်ခဲ့ခြင်းဖြစ်သည်။ စာဆိုသည် မိမိခံစားမှုနှင့် ယှဉ်၍ရခဲ့သည့် ဘဝအသိကို ဤကဗျာတွင် ဖော်ပြထားသည်။

လူသားတိုင်း လိုတရပြည့်စုံသည်ဟူ၍ မရှိပေ။ မပြည့်စုံသည့် လူသားတို့အနေနှင့် မိမိတို့၏ အားနည်းချက်၊ ချို့ယွင်းချက်၊ လိုအပ်ချက်များကို တွေးတောဝမ်းနည်းနေမည့်အစား ဇွဲ၊ သတ္တိ၊ လုံ့လ ထားပြီး ကြိုးစားပါက မိမိရည်မှန်းချက်ပန်းတိုင်သို့ အနွေးနှင့်အမြန် အရောက်လှမ်းနိုင်မည်၊ အောင်မြင်မှုများ ရရှိနိုင်မည်ဟူသော အသိအမြင်ကို ညွှန်ပြဖွဲ့ဆိုထားသည်။ ဘဝတွင် ရှုံးနိမ့်ချိန်၊ အဆင်မပြေချိန်၊ ဝမ်းနည်းအားငယ်ချိန်တွင် ပြန်လည်ကြိုးစား၊ နိုးကြားစေသည့် စိတ်အားတက်ကြွ မှု ဝီရိယနှင့်ယှဉ်၍ ကျေနပ်နှစ်သက်မှုသန္တရသကိုဖြစ်ပေါ်စေကာ စိတ်ဓာတ်ခွန်အား အသိတရား များ ပေးစွမ်းနိုင်သော ကဗျာကောင်းတစ်ပုဒ်ဟု ဆိုချင်ပါသည်။

ခြုံငုံသုံးသပ်ချက်

ဤစာတမ်းတွင် အနန္တသုရိယအမတ်၏ “သူတည်းတစ်ယောက်” အစချီ မျက်ဖြေလင်္ကာ၊ ရှင်ငြိမ်းမယ် ၏ “ငါ့ကိုကွယ်အမယ်ကြီးနဲ့ဘကြီးဖျက်လို့” ချီအိုင်ချင်း၊ ဆရာမင်းသုဝဏ်၏ “ဖိုးမောင်လာပြီ”၊ ဆရာဇော်ဂျီ၏ “လှိုင်းကလေးသင်”၊ ငွေတာရီ၏ “သူရဲကောင်းသုံးယောက်နှင့် ခရီးသည်” ကဗျာ များမှပေးသော ရသနှင့် အသိအမြင်ကို လေ့လာတင်ပြပြီးဖြစ်ပါသည်။

အနန္တသုရိယအမတ်၏ “သူတည်းတစ်ယောက်” အစချီ မျက်ဖြေလင်္ကာမှ စာဆိုကို သနားခြင်း ကရုဏာရသ၊ အံ့သြလေးစားခြင်း အဗ္ဘုတရသ၊ ကြောက်လန့်သံဝေဂရခြင်း ဘယာနက ရသ၊ နှစ်သက်လေးစားခြင်းဟူသော သန္တရသခံစားမှုနှင့် တရားအသိ၊ လောကအသိအမြင်ကို ရရှိ စေသည်။

“ငါ့ကိုကွယ် အမယ်ကြီးနဲ့ ဘကြီးဖျက်လို့” ချီအိုင်ချင်းမှ မောင်မယ်ချစ်ခြင်း သိင်္ဂီရရသ၊ သနားကြင်နာခြင်း ကရုဏာရသနှင့်အတူ ရွှင်မြူးဖွယ် ဟာသရသများကိုပါ ခံစားစေသည့်အပြင် လက်တွေ့နှင့် စိတ်ကူးကွာခြားတတ်သည့် လောကသဘာဝနှင့် လူ့စိတ်မနောကို သိရှိစေသည်။

“ဖိုးမောင်လာပြီ” ကဗျာမှ သနားခြင်း ကရုဏာရသနှင့် နှစ်သက်လေးစားခြင်း သန္တရသ ခံစားမှုကို ဖြစ်ပေါ်စေကာ လူသားတစ်ဦး၏ တာဝန်သိစိတ်ကို တွေ့မြင်ရသည်။

ဇော်ဂျီ၏ “လှိုင်းကလေးသင်” ကဗျာတွင် ကျေနပ်နှစ်သက်ခြင်း သန္တရသခံစားမှုနှင့်အတူ လူသားပီသသောစိတ်ဓာတ် လူတန်ဖိုးကို မြင့်မားစေသည့် ဂုဏ်ပုဒ်များကို သိမြင်နိုင်ရန် နှိုးဆော်ပေး နိုင်သည်။

ငွေတာရီ၏ “သူရဲကောင်းသုံးယောက်နှင့်ခရီးသည်” ကဗျာမှ တက်ကြွမှုဝီရသ၊ နှစ်သက်မှု သန္တရသ ခံစားချက်များနှင့်အတူ ဘဝခရီးကို ဖြတ်သန်းရာတွင် လက်ကိုင်ထားရှိရမည့် အားမာန်ကို နှိုးထစေသည်။

နိဂုံး

ကဗျာစာဆိုများသည် လောကသဘာဝအဖြစ်အပျက်များကို ကိုယ်တိုင်ခံစား၊ လေ့လာပြီး စာကဗျာ များကို ဖွဲ့ဆိုသည်။ ထို့ကြောင့် ကဗျာများမှ လောကသဘာဝအလှအပ၊ လူသားတို့၏ အားမာန်၊ လူသားတို့၏ စွမ်းရည်တို့ကို တွေ့ရှိခံစားနိုင်သည်။ ရသစာပေသည် လွန်စွာတန်ဖိုးအာနိသင်ရှိသည်။ ရသစာပေတွင် အကျုံးဝင်သည့်မြန်မာကဗျာကောင်းများကို ဖတ်ရှုခံစား၍ စာဖတ်သူ၏ အသိအမြင်၊ အားမာန်၊ စွမ်းရည်များကို နှိုးထသက်ဝင်စေသည်။ ဤစာတမ်းပါ ကဗျာများမှ ပေးစွမ်းသည့် ရသ များကို နှစ်သက်ခံစားမှုနှင့်အတူ စာပေချစ်စိတ်၊ ဒေသချစ်စိတ်၊ လောကအမြင်၊ ဘဝအမြင်များ ရှင်သန်နှိုးထနိုင်လိမ့်မည်ဟု ထင်မြင်ယူဆမိပါသည်။

ကျမ်းကိုးစာရင်း

ချိုချိုတင့်၊ ဒေါက်တာ၊ ပါမောက္ခ- (မြန်မာစာ)။ (၂၀၁၁)။ မြန်မာစာသုတေသနစာတမ်းများ။ ရန်ကုန်၊

Wisdom House စာပေ။

ခင်မင်၊ မောင်၊ (ခန့်ဖြူ)။ (၂၀၁၀)။ ချစ်သူများကို အဆုံးစီရင်ခြင်း (စာပေသုတေသန၊ စာပေသဘော

တရားနည်းနာ၊ စာပေရေးရာ)။ ရန်ကုန်၊ ကံ့ကော်ဝတ်ရည်စာပေ။

ဂန္ထဝင်စာပေစာတမ်းများ (ပထမတွဲ)။ (၁၉၉၁)။ ရန်ကုန်၊ စာပေဗိမာန်ပုံနှိပ်တိုက်။

ဂန္ထဝင်စာပေစာတမ်းများ (ဒုတိယတွဲ)။ (၁၉၉၂)။ ရန်ကုန်၊ စာပေဗိမာန်ပုံနှိပ်တိုက်။

စာပေဂျာနယ်။ ၁၉၉၅၊ စက်တင်ဘာလ။ ရန်ကုန်၊ အားမာန်သစ်စာပေ။

ဇော်ဂျီ၊ ဆရာ။ (၁၉၉၃)။ ဆရာဇော်ဂျီစာပေါင်းချုပ် (ပထမတွဲ)။ ရန်ကုန်၊ မြန်မာနိုင်ငံစာပေနှင့်

စာနယ်ဇင်းအဖွဲ့။

ဇော်ဂျီ၊ ဆရာ။ (၁၉၉၄)။ ဆရာဇော်ဂျီစာပေါင်းချုပ် (တတိယတွဲ)။ ရန်ကုန်၊ မြန်မာနိုင်ငံစာပေနှင့်

စာနယ်ဇင်းအဖွဲ့။

ဇော်ဂျီ။ (၂၀၀၄)။ ရသစာပေအဖွင့်နှင့်နိဒါန်း။ ရန်ကုန်၊ နှင်းဦးလွင်စာပေ။

ထွန်းမြင့်ဦး၊ ဒဂုန်။ (၁၉၉၇)။ သုခမှတ်စု၊ ဆဋ္ဌမအကြိမ်၊ ရန်ကုန်ပါရမီစာပေ။

ဖေမောင်တင်၊ ဦး၊ ပါမောက္ခ။ (၂၀၁၃)။ မြန်မာစာပေသမိုင်း၊ ဧကဒသမအကြိမ်၊ ရန်ကုန်၊

ရာပြည့်စာပေ။

မင်းသုဝေနှင့် မင်းယုဝေ။ (၁၉၆၇)။ ကဗျာပရိယာယ်။ ရန်ကုန်၊ နှလုံးလှစာပေတိုက်။

မြန်မာကဗျာစာတမ်းများ။ (၁၉၈၄)။ ရန်ကုန်၊ စာပေဗိမာန်ပုံနှိပ်တိုက်။

မြန်မာကဗျာလက်ရွေးစင်၊ ဒသမတန်း။ (၂၀၁၅)။ ပညာရေးဝန်ကြီးဌာန။ ရန်ကုန်၊ ရွှေမြန်မာ

ပုံနှိပ်တိုက်။

မြန်မာစာလုံးပေါင်းသတ်ပုံကျမ်းနှင့်ခွဲထား။ (၂၀၁၁)။ နေပြည်တော်၊ မြန်မာစာအဖွဲ့ဦးစီးဌာန။

မြန်မာအဘိဓာန်။ (၁၉၉၁)။ ရန်ကုန်၊ မြန်မာစာအဖွဲ့ဦးစီးဌာန။

ကျေးဇူးတင်လွှာ

ဤစာတမ်းကို ရေးသားပြုစုနိုင်သည်အထိ ပညာအမွေပေးခဲ့သော လက်ဦးဆရာ မိဘနှစ်ပါး၊
မြန်မာစာပေတန်ဖိုးကို သိမြင်၍ စာပေချစ်စိတ်ကို အမြစ်တွယ်အောင် ပျိုးထောင်ပြုစုပေးခဲ့သော ဆရာကြီး
ဒေါက်တာခင်အေး (အငြိမ်းစား ပါမောက္ခ၊ ဌာနမှူး၊ မြန်မာစာဌာန၊ ရန်ကုန်တက္ကသိုလ်)၊
ဒေါက်တာအောင်မြင့်ဦး (ပါမောက္ခ၊ ဌာနမှူး၊ မြန်မာစာဌာန၊ ရန်ကုန်တက္ကသိုလ်)နှင့် ကျေးဇူးရှင်
သင်ဆရာများအားလုံး၊ အပြည်ပြည်ဆိုင်ရာ သမဝါယမနေ့အထိမ်းအမှတ် စာတမ်းဖတ်ပွဲတွင်
စာတမ်းရေးသားဖတ်ကြားခွင့်ပြုခဲ့သော ဒေါက်တာရီရီဝင်း (ပါမောက္ခချုပ်၊ သမဝါယမတက္ကသိုလ်၊ သန်လျင်)၊
ဒေါ်မြင့်မြင့်စိန် (ဒုတိယပါမောက္ခချုပ်၊ သင်ကြား၊ သမဝါယမတက္ကသိုလ်၊ သန်လျင်)၊ ဒေါက်တာအေးအေးမော်
(ပါမောက္ခ၊ ဌာနမှူး၊ မြန်မာစာဌာန၊ သမဝါယမတက္ကသိုလ်၊ သန်လျင်)နှင့် မြန်မာစာဌာနမှ လုပ်ဖော်ကိုင်ဖက်
ဆရာ၊ ဆရာမများအားလုံးကို ကျေးဇူးအထူးတင်ရှိကြောင်း မှတ်တမ်းတင်အပ်ပါသည်။

စာတမ်းရှင်၏ ကိုယ်ရေးအကျဉ်း

အဖ ဦးကျော်သန်း (ကထိက၊ အငြိမ်းစား၊ သမဝါယမကောလိပ်၊ ဖောင်ကြီး)နှင့် အမိ ဒေါ်သန်းအေးတို့မှ ၁၉၆၉ ခုနှစ်၊ ဖေဖော်ဝါရီလ (၈)ရက်နေ့တွင် မွေးဖွားပြီး ရန်ကုန်ဇာတိဖြစ်သည်။ ၁၉၈၅-၁၉၈၆ ခုနှစ်တွင် တက္ကသိုလ်ဝင်တန်းအောင်မြင်ခဲ့ပြီး ၁၉၉၃ ခုနှစ်တွင် ရန်ကုန်တက္ကသိုလ်မှ ဝိဇ္ဇာ (ဂုဏ်ထူး)ဘွဲ့၊ ၁၉၉၇ ခုနှစ်တွင် ရန်ကုန်တက္ကသိုလ်မှ မဟာဝိဇ္ဇာဘွဲ့ ရရှိခဲ့သည်။ ၁၉၉၇ ခုနှစ် မှ ၂၀၁၂ ခုနှစ်အထိ သမဝါယမကောလိပ် (ဖောင်ကြီး)တွင် နည်းပြ၊ အကြီးတန်းနည်းပြ၊ လက်ထောက် ကထိက၊ ကထိကရာထူးနှင့် တာဝန်အဆင့်ဆင့်ကို ထမ်းဆောင်ခဲ့သည်။ ၂၀၁၂ ခုနှစ်မှ ၂၀၁၄ခုနှစ် ဧပြီလထိ သမဝါယမတက္ကသိုလ် (စစ်ကိုင်း)တွင် တွဲဖက်ပါမောက္ခအဖြစ်လည်းကောင်း၊ ၂၀၁၄ ခုနှစ် ဧပြီလမှ ယနေ့ထိ သမဝါယမတက္ကသိုလ် (သန်လျင်) မြန်မာစာဌာနတွင် တွဲဖက်ပါမောက္ခအဖြစ် လည်းကောင်း တာဝန်ထမ်းဆောင်လျက်ရှိပါသည်။

A STUDY ON THE SIGNIFICANCE OF NONVERBAL COMMUNICATION IN TEACHING ENGLISH LANGUAGE

San Thawdar Oo¹

Abstract

The aim of present research was to investigate the importance of nonverbal communication in teaching English language and to find out the students' attitudes on teachers' nonverbal behaviors used in English language class rooms. Communication is a mean of sharing ideas, feelings, and attitudes. It is separated into two types: verbal and nonverbal. In verbal communication, we use the language while nonverbal communication is the behavior that can be perceived indirectly from physical language. In English teaching, with the constant reform of teaching methods, body language as a kind of nonverbal communication plays a very significant role in the interaction between teachers and students. This study was conducted in Co-operative University, Thanlyin. The participants were 80 students (20 males & 60 females). They were final year students of Co-operative University, Thanlyin. They are learning Business English as supporting subject. The data were gathered through a questionnaire. The statistical descriptive method was used. To be more valid the study, secondary data from references are used. The results showed high positive attitudes towards teachers' facial expressions, eye contact, body movement, pitch of voice and spatial distance as forms of nonverbal communication used in English language classrooms. Then, the study pointed out that respondents understood the significance of nonverbal communication skill in teaching English language and considered this skill more efficient and attractive than the conventional teaching. Moreover, this paper will help English teachers to understand and use nonverbal communication properly in their English language classrooms in order to achieve the best teaching effects.

Keywords: nonverbal communication, facial expressions, eye contact, body movement, pitch of voice, spatial distance

1. INTRODUCTION

English is an international language and it is used by more than a half of people all over the world. By using English language, people can communicate with other countries. As the English language is essential, it is taught as one of the subjects in every school, college and university. Today's English education requires students to communicate in English. Teachers also require to teach English nearly without Myanmar expression all the class time. But the English vocabulary is so abundant that the students cannot remember all of them.

¹Lecturer, Department of English, Co-operative University, Thanlyin

Traditional teaching method, cramming method cannot arouse students' interest. Moreover, English is foreign language or second language to students and it is difficult to study well so that students are not able to hold the interest in it for a long time. And atmosphere in English class is depressing. To arouse students' interest in learning English and to help them learn better with constant reform of teaching methods, body language as a nonverbal communication plays a very significant role in the interaction between teachers and students.

In teaching English, nonverbal communication not only can express the speakers' intention more accurately and effectively, simplify the teaching instruction, stimulate the students' interest, optimize the purpose of English teaching and enhance teaching effectiveness, but also can help to improve the students' ability of English language. Thus, the present study focused on facial expressions, body movements, eye contact, pitch of voice and spatial distance between teacher and students as nonverbal communication which is important role in English language teaching.

1.1. Objectives of the Study

This paper intended to investigate the significance of nonverbal communication in teaching English language and to find out the final year students' attitudes on teachers' nonverbal communication used in English language classrooms.

1.2. Delimitation of the study

The scope of the study was narrowed down to facial expressions, eye contact, body movements, spatial distance between the teacher and students and pitch of voice, as nonverbal communication cues. The study was further restricted to the subject of Business English taught at Co-operative University, Thanlyin.

2. NONVERBAL COMMUNICATION

This chapter consists of definition of nonverbal communication, principles of nonverbal communication, functions of nonverbal communication and types of nonverbal communication.

2.1. Definition of Nonverbal Communication

Nonverbal communication is a process of generating meaning using behavior other than words. Nonverbal communication includes vocal elements which is referred to a paralanguage and includes pitch, volume and rate, and non-vocal elements, which are usually referred to as body language and includes gestures, facial expression, and eye contact, among other things. (Internet source)

2.2. Principles of Nonverbal Communication

Nonverbal communication operates on the following principles:

Nonverbal communication typically conveys more meaning than verbal communication, nonverbal communication is more involuntary than verbal communication, nonverbal communication is often more ambiguous than verbal communication, and nonverbal communication is often more credible than verbal communication. (Internet source)

2.3. Functions of Nonverbal Communication

There are five functions of nonverbal communication:

Contradicting- Nonverbal cues can contradict or negate verbal message. When this happens what is said and what is done are at odds. For example, your face is contorted into a grimace. Your eyes are narrowed and eyebrows furrowed. Yet you are yelling, "I'm not upset!" You are sending a mixed message. Your verbal message is negated by source of nonverbal behavior.

Emphasizing- Nonverbal cues can emphasize or underscore a verbal message. For example, when you raise or low your voice, or slow down your rate of speech so you can deliberately stress a series of words, you are using nonverbal cues to accentuate your words. You raise your finger accusingly and raise your voice to demonstrate your anger as you say, "It is **your** fault, not **mine**"

Regulating- Nonverbal cues can regulate or control person to person interaction. With eye contact, gestures and voice, we control who should speak next and thus direct the flow of verbal exchanges. For example, we use hand signals to indicate that "we are done talking and it is someone else's turn to talk". "Looking at the other person as if to say what do you think about that."

Complementing- Nonverbal cues can reinforce or complement a verbal message. For example, if you say, "Hi" or "Bye", you will probably wave your hand also, and if you say you are hungry you might rub your stomach. If you tastes bad, you will express your dislike accompanied with a disgusted look on your face.

Substituting - Nonverbal cues can substitute for or take the place of spoken words. For example, the up- and - down nod is understood to mean "Yes". A shrug of the shoulders is used in place of "I don't know". (Internet source)

2.4. Types of Nonverbal Communication

There are different types of nonverbal communication. These are kinesics, haptics, vocalics, proxemics and chronemics.

Kinesics- Kinesics refers to body movements and it includes gestures, eye contact, facial expressions and head movement and posture.

Gestures are arm and hand movements and include adaptors which are touching behaviors and movement that indicate internal states typically relates to anxiety; for example- clicking a pen or scratching your face, emblems that have a specific agreed on meaning; for example- a thumbs- up to say "OK", and illustrators that are the most common type of gesture and are used to illustrate the verbal message they accompany. For example, using hand gestures to indicate the size or shape of an object or bouncing your hand along with the rhythm of your speaking.

Eye contact refers to eye contact with another person's face, head, and eyes and patterns of looking away and back at the other person during interaction. Eye contact provides turn-taking signals, signals when we are engaged in cognitive activity, and helps establish rapport and connection, among other things.

Facial expressions are the use of forehead, brow, and facial muscles around the nose and mouth to convey meaning. Facial expression can convey happiness, sadness, fear, anger, and other emotions.

Head movement and posture include the orientation of movement of our head and orientation and positioning of our body and the various meanings they send. Head movements such as nodding can indicate agreement, disagreement, and interest, among other things. Posture can indicate assertiveness, defensiveness, interest, readiness or intimidation, among other things.

Haptics- Haptics refers to touch behaviors. There are number of ways that conscious contacts usually occur: patting, slapping, punching, pinching, stroking, shaking, kissing, licking, holding, guiding, embracing, linking, laying-on, kicking, grooming and tickling. Touch is most useful for warmth, love, affection, intimacy, sympathy, comfort, support, consolation, protection, understanding, involvement, reassurance, anger, frustration, etc.

Vocalics- Vocalics refer to the vocalized. It includes speaking rate, pitch, volume, tone of voice and vocal quality. These qualities are also known as paralanguage, reinforce the meaning of verbal communication, allow us to emphasize particular parts of a message, or can contradict verbal messages.

Proxemics- Proxemics is the use of space and distance within communication. In general, there are four zones that constitute personal space: the public zone (12 or more feet from our body), social zone (4-12 feet from our body), the personal zone (1.5-4 feet from our body) and the intimate zone (from body contact to 1.5 feet away). It also studies territoriality, or how people take up and defend personal space.

Chronemics- Chronemics refers to the study of how time affects communication and includes how different time cycles affect our communication, including the differences between people who are past or future oriented and cultural perspective on time as fixed and measured (monochronic) or fluid and adaptable (polychronic). (Internet source)

3. LITERATURE REVIEW

The large number of wise old sayings that emphasize the status of nonverbal communication are : "A picture is worth a thousand words", "your actions speak so loudly, I can't hear what you are saying", "It's not what you say; it's how you say it", "Actions speak louder than words" and "First impressions are lasting impression" (Roviello-2004)

Albert Mehrabian, who is regarded as pioneer researcher of body language in 1950s pointed that only 7 percent of a message is sent through words, with the remaining 93 percent of a message is sent through facial expressions (55) percent and vocal information (38) percent.

Grant and Hennings (1971) stated that as many as 82 percent of teachers' messages are nonverbal, while only 18 percent are verbal.

According to Miller (1988), teachers should be aware of non-verbal communication in the classroom for two basic reasons: (1) to become better receivers of students' messages and (2) to gain the ability to send students positive signals that reinforce learning, and at the same time become more adept at avoiding negative signals that stifle learning. Effective teaching depends on effective communication. Smile as a facial expression is a powerful tool in the hands of a teacher, which can develop the understanding of the students by attracting their attention in the classroom and creating interest in learning. On the other hand, anger as a facial expression can be used in the English Language classroom when students are not interested in the teaching-learning process or lose attention. Smile and anger are very powerful tools in the hand of the teacher. If those tools are used properly and purposefully, student's learning outcomes can be enhanced. Pitch in the voice can play a very important role in the teaching learning process. Rise and fall in pitch of voice can change the meaning of a sentence. Teachers can utilize this technique in the understanding of meanings of different words, phrases, and sentences.

According to Givens (2002), pitch of voice arouses emotional and psychological feelings. These feelings also carry information like sarcastic mood, indifferent, superior docile manner of speaking.

Miller (1988) argued that spatial distance between teacher and students is very essential and has a great impact on students understanding. Teacher can easily convey the feelings of acceptance or refusal merely by distance. Teachers have the liberty of space while students don't.

Devito (2009) stated that space is a very important aspect of inter personal communication, but most of time we overlook it. He further categorized the following four types of space or distance under a board heading of "Proxemics Distances or Spatial Distances": Intimate distance ranges from 18 inches and considered close relationship between two persons. Personal distance ranges from 18 feet to 4 feet and word "Bubble" is used for this category. Bubble keeps a distance between the persons and protects a person from touch by others. Social distance ranges from 4 feet to 12 feet and is more formal and lose the visual details which one can have in personal distance. Public distance ranges from 12 feet to more than 25 feet. In this situation one cannot visualize minute details but still can see what is happening around.

Gladis (1985) indicated that as teachers close the distance between themselves and students, the classroom climate becomes less sterile, more social, more personal and psychologically more intimate. A teacher may vary his or her distance as appropriate to subject matter; however one should be aware of the message personal space conveys. He cited that eye contact enhances listener comprehension and speaker credibility. A glance from a teacher can exhibit so many different emotions; for example, sustained eye contact can be evidence of approval, doubt, anger, disinterest and other emotions. Teachers' eyes can emit sympathy, laughter, and displeasure. Everyone can remember an excellent teacher who could say with bright eyes or icy stare; words were not needed.

Roviello (2004) stated that it is important in any life situation to maintain the right amount of eye contact. Too much eye contact can make individuals uncomfortable, whereas too little eye contact can make individuals communicate to students a number of different emotions and expectations. Individual eye contact with each student throughout a lesson will indicate attentiveness and enthusiasm on the teachers' part.

Allan and Pease (2004) believed that hand movements play most important function in communication; as there is more synchronization in human mind and hand movements than any other body part. Hands and shoulder as body parts can tremendously influence the teaching learning process. Teachers can utilize these parts of body for providing extra information and elicit more importance about different concepts and topics. It also generates a desire for learning among students as they pay heed to body movements of the teachers and grasp the meaning of the lesson taught.

Woolfolk and Brooks (1985) pointed that teachers express enthusiasm, warmth, assertiveness, confidence, or displeasure through their facial expressions, vocal intonation, gesture and use of space.

4. METHOD OF THE STUDY

This study is based on both primary and secondary data. The major source of the primary data collection was a questionnaire. A close-ended questionnaire in English was formed for the students. The questions were close because people do not have enough time and patience to respond questions. The

questionnaire included statements. The wording of questions was chosen in a way to make sure that everyone could understand them. Students' questionnaire consisted of 15 items. All items used 5-point Likert scale. The questionnaire were used to collect the information about English teachers' facial expressions, eye contact, body movement, pitch of voice and spatial distance used in teaching English. Previous studies and online resources are cited as secondary data.

4.1. Participant

The participants in this study were final year students of Co-operative University, Thanlyin. The total number of participants was 80 students (20 males and 60 females). They have to learn Business English as a supporting subject from first year to final year. All of them were consent for their participation and took part in the study quite voluntarily.

4.2. Procedures

The participants answered the questions during their class time. At the beginning, the teacher gave them information about the questionnaire to ensure that students clearly understood the instructions. Then, the collected data from the questionnaire were analyzed quantitatively, and the emerging patterns of findings were interpreted to clarify teachers' nonverbal communication which reinforce the final year students in learning English.

5. RESULTS BASED ON DATA ANALYSIS

The following table and figure presents the results of the study based on responses of students to the questionnaire. After computing and analyzing the data by SPSS, the results were presented in frequencies and percentage.

Table. Students' views about teachers' nonverbal communication

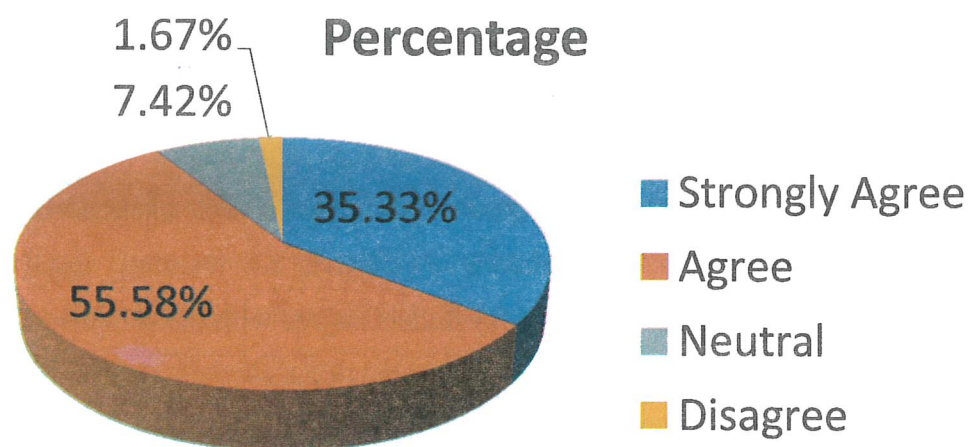
No	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	Facial expressions help the students in understanding lesson.	31 (38.75%)	48 (60%)	1 (1.25%)	0	0

2	Teachers' facial expressions positively affect teaching learning process.	21 (26.25%)	51 (63.75%)	8 (10%)	0	0
3	An anger on teachers' face motivates students to take interest in the studies.	10 (12.5%)	40 (50%)	10 (12.5%)	20 (25%)	0
4	A smile on the teachers' face make students' stress less.	48 (60%)	32 (40%)	0	0	0
5	Teachers' eye contact makes students attentive in the teaching English classroom.	35 (43.75%)	42 (52.5%)	3 (3.75%)	0	0
6	Teachers' regular eye contact makes the classroom environment alive.	19 (23.75%)	52 (65%)	9 (11.25%)	0	0
7	Body movements of teachers help students' understanding in learning English.	40 (50%)	38 (47.5%)	2 (2.5%)	0	0
8	Teachers' body movements make classroom environment supportive to learning English.	31 (38.75%)	44 (55%)	5 (6.25%)	0	0
9	Use of teachers' body movements makes students more alive in learning reading passages.	29 (36.25%)	44 (55%)	7 (8.75%)	0	0
10	Very high pitch of teachers' voice creates problems in teaching learning process.	19 (23.75%)	53 (66.25%)	8 (10%)	0	0
11	Low pitch of teachers' voice creates problems in teaching learning process.	24 (30%)	48 (60%)	8 (10%)	0	0

12	Soft pitch of teachers' voice attracts the attention of students.	26 (32.5%)	45 (56.25%)	9 (11.25%)	0	0
13	Teachers' intonation of voice retains the students' interest in learning English.	30 (37.5%)	44 (55%)	6 (7.5%)	0	0
14	Teachers keep fair distance from the students.	23 (28.75%)	50 (62.5%)	7 (8.75%)	0	0
15	Students get confuses when teachers come closer.	38 (47.5%)	36 (45%)	6 (7.5%)	0	0
	Average percentage	35.33%	55.58%	7.42%	1.67%	0%

Average percentage of students' attitudes on teachers' nonverbal communication used in English language classroom

Figure(1)



In above the table, statement (1) is strongly agreed by 31 (38.75%) students, agreed by 48(60%) students and, only 1 (1.25%) student is neutral. The results showed that different facial expressions helped the students in understanding various concepts of a lesson.

21(26.25%) students strongly agree, 51(63.75%) students agree with statement (2) and 8(10%) students are in neutral. This illustrates that teachers' facial expressions positively affect teaching- learning process.

There are 10(12.5%) students who strongly agree, 40(50%) students agree, 10 (12.5%) students are uncertain and 20(25%) students disagree with statement (3) that anger on teachers' face motivates students to take interest in the studies.

The statement (4) indicates that 48(60%) students strongly agree and 32(40%) students agree with a smile on the teachers' face make students' stress less. There is no student who disagrees with the statement (4).

One of the most important facets of nonverbal communication is making the environment of classroom alive. The next question posed to the respondents was whether or not teacher's eye contact made the students attentive in teaching English class room. Out of 80 students, 35(43.75%) students strongly agree, 42(52.5%) students agree with the statement (5) and 3(3.75%) students are in neutral.

Eye contact is an important element of nonverbal communication that a teacher can utilize for the better learning of the students in language classroom. Another question asked to students was whether or not teachers' regular eye contact made the classroom environment alive. There are 19(23.75%) students who strongly agree, 52(65%) students who agree with the statement (6) and, 9(11.25%) are neutral.

Out of 80 students, 40(50%) students strongly agree and 38(47.5%) students agree with the statement (7) that teachers' body movement help students understanding in learning English. Only 2(2.5%) students are in neutral.

The next question was asked to students whether or not teachers' body movement make class room environment supportive to learning English. 31(38.75%) students strongly agree, 44 (55%) students agree with the statement (8) and 5(6.25%) students are in neutral.

Another question about the body movement was asked to students whether or not body movement of the teachers made students more alive in learning reading passages. Out of 80 students, 29(36.25%) students strongly agree, 44(55%) students agree with the statement (9) and 7(8.75%) students are in neutral. The results revealed that respondents were aware of the fact that the important of body movement in teaching English and it made the teaching of reading passages more interesting and informative for them.

Teachers' voice plays an important role in teaching English language. Thus, four questions were asked to students. There are 19(23.75%) students who strongly agree, 53(66.25%) students who agree with the statement (10) that very

high pitch of teachers' voice creates problem in teaching learning process and 8(10%) students are in neutral. The results showed that most of the students were aware of the fact that high pitch of the teachers' voice created problems for them in the teaching – learning process.

A question was asked from the respondents whether or not low pitch of teacher' voice made problems in teaching- learning process. There are 24(30%) students who strongly agree, 48(60%) students who agree with the statement (11) and 8(10%) students are in neutral. According to results, low pitch and tone of teachers' voice made it hard for students to understand the lesson.

Another question was asked from the students whether or not soft pitch of teachers' voice attracts the attention of students. Out of 80 students, 26(32.5%) students strongly agree, 45(56.25%) students agree with the statement (12), and 9(11.25%) students are uncertain. The results indicated students were well aware of the importance of soft pitch of the teachers' voice in teaching English.

The next question was that whether or not teachers' intonation of voice retain the students' interest in learning English. 30(37.5%) students strongly agree, 44(55%) students agree with the statement (13), and there are 6(7.5%) students who are uncertain. The results showed that students are interested in learning English because of teachers' intonation of voice.

Another delicate and sensitive issue in the class room teaching is distance between teacher and student that plays an important role in teaching- learning process. There are 23(28.75%) students who strongly agree, 50(62.5%) students who agree with the statement (14) that teachers keep fair distance from the students and 7(8.75%) students are in neutral.

The last question was asked to the students that whether or not students get confuses when teachers come closer. Out of 80 students, 38(47.5%) students strongly agree, 36(45%) students agree with that question and 6(7.5%) students are in neutral.

The results conveyed that teachers' keeping fair distance from the students is significant in teaching language classroom.

And the figure (1) shows that average percentage of students' attitudes on teachers' nonverbal communication used in English language class room. The total percentage of students' attitudes towards teachers' nonverbal communication of the (15) statements are that (35.33%) strongly agree, (55.58%) agree only (1.67%)

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“Buddhists’ Marriage under Myanmar Customary Law”

Ei Mon Mon Cho

1. Introduction

Marriage means set up house and that affected by parents of both parties or marriage by mutual consent. Marriage is a civil institution in which the Buddhist religious element enters not at all. The Dhammathats do not fix the age of competence for marriage. Certain requirements are prescribed by custom for a valid marriage. A Myanmar Buddhist young man is competent to contract a valid marriage at any time he is physically competent for marriage. But a Myanmar Buddhist girl under 20 years of age cannot contract a valid marriage without the consent or against the will of her parents or guardian. Not only parental consent but also minor's consent are essential for the validity of marriage. If any ceremony takes place it is no more than evidence whereby the fact of mutual agreement can be proved. At the present day, it has become popular and fashionable with the young people go to a judge or magistrate and sign affidavits, in the presence of a few friends and elders, stating their competence and intention to marry. After marriage, the chief duty of a husband is to provide food, clothes and lodging for his wife and children. If the husband neglects or refuses to maintain, a wife may claim maintenance not only under civil suit according to the Myanmar Customary law but also under section 488 of Criminal Procedure Code.

1.1 Objectives of the Study

The objectives of the study are as follows:

- To know the source of Myanmar Customary Law
- To apply the essential conditions of a valid marriage amongst Myanmar Buddhists
- To know the protections of Myanmar women who marries with non-Buddhist under Myanmar Women's Special Marriage Law, 2015
- To know how take an action if the man fails to maintain his wife

1.2 Method of the Study

The data sources are based on secondary data obtaining from library and internet websites.

2. The Nature of Myanmar Customary Law

Myanmar Customary Law is Social Law that appears based on the customs which are accepted and applied through Myanmar's history for a long time.¹

In accordance with the term "Myanmar Buddhist Law", it is meant to be Religious Law. In fact, Buddhism's base ideology is not concerned with. As mentioned in that Act, the social problems such as Myanmar's marriage, inheritance and succession are decided according to Myanmar Traditional Customs and Culture in the era of ancient Myanmar Kings. That Myanmar's Customs and Culture can be found in Dhammathats which are compiled in accordance with era down through Myanmar's history. Therefore, it is obvious that the term "Buddhist Law" is a wrong title. However, as it is reluctant to discard a term which is in an Act enacted by the Government, that law that is associated with Myanmar Buddhism is called as "Myanmar Buddhist Law". Actually, this new term is not also appropriate. Each of jurists decided together to accept that the term "Buddhist Law" is definitely false and the Social Law that is related with Myanmar Buddhism should only be Myanmar Customary Law.²

Myanmar Customary Law did not emerge overnight with a series of sections like the law enacted by legislative body. It is shaped gradually based on Myanmar's history, discipline, ethic, art, literature and religion.³

2.1 Sources of Myanmar Customary Law

The meaning of the expression the 'Buddhist Law' used in clause (1) (a) of section 13 of Burma Law Act (1898) but it was decided in Tan Ma Shwe Zin Vs Tan Ma Ngwe Zin⁴ that the 'Myanmar Customary Law' so far as Myanmar Buddhist in Myanmar were concerned, means the personal law of the Myanmar Buddhist Community in Myanmar, that is to say 'Myanmar Customary Law'.⁵

¹ Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-1.

² Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-1,2.

³ Unoin of Myanmar Vs. Naw Zar Bar, 1966 B.L.R 194.

⁴ Tan Ma Shwe Zin Vs. Tan Ma Ngwe Zin, 1932, 10 Ran 97.

⁵ Moothan, O. H, Burmese Buddhist Law, Oxford University Press, 1939, p-2.

About the ninth century B.C the Indian Hindus under the leadership of King Abhiraja established a kingdom at Tagaung in Upper Myanmar. Thereafter for several centuries the Indian Hindus steadily migrated to Myanmar.⁶ From before the fifth century A.D the Indian Buddhists also started migrating to Myanmar.⁷

In Burmese Buddhist Law by Moothan, prior to the 10th century A.D, a series of small colonies along the western coast of Myanmar had been founded by Indian traders who had brought with them their Indian (Hindu) law. And the Talings and to a lesser extent the Burmese, adopted much of the Hindu Law which, however, become coloured by Buddhist influences and modified to suit Burmese customs.⁸

But in Burmese Buddhist Law by Dr E. Maung the Burmese Law is that its roots are sunk deep in the soil of national history and that the law is the product of age- long growth of national life.⁹

Also Dr. Maung Maung, by the time Hindu influence, Burmese society had become well organized in the village community, in the small cities and the small kingdoms, and these communities, had developed their cultures and customs, their laws and their government, and above all, a capacity to borrow and receive from other migrant civilizations without being overwhelmed.¹⁰

The Dhammathats, are the main and important sources of Myanmar Customary Law, which is a corruption of the sankit word Dhammatha sastras. The Dhammathats or treatises of rules which are in accordance with custom and usage and which are referred to in the settlement of disputes relating to person and property, are a principal source of Myanmar Customary Law. The Dhammathats are useful and used as mirrors of the society of the day.¹¹

In respect of the Dhammathats, there are a total of 175 documents including 57 Pikkas, 16 Dhammathats Lingars, 82 Rulings, 10 Dhammathats precedents and 10 Dhammathats branches in the 'History of Pitaka Taw', written by authoritative author, Minister U Yan, who is literature. During the reigns of King Mindon (1853-1878), Chief Minister of Justice, H.E. kinwon Mingyi U Kaung's 34 and 36 volumes of consolidated Dhammathats are very popular and the said Dhammathat principles are still being applied by the present day Courts of the Union of Myanmar, without interruption.¹²

⁶ Lahiri, S.E, Principles of Modern Myanmar Buddhist Law, Culcutta, sixth edition, 1957, p-1.

⁷ Lahiri, S.E, Principles of Modern Myanmar Buddhist Law, Culcutta, sixth edition, 1957, p-1.

⁸ Moothan, O. H, Burmese Buddhist Law, Oxford University Press, 1939, p-2.

⁹ E Maung, Dr, Myanmar Buddhist Law, Rangoon, 1970.

¹⁰ Maung Maung, Dr, Law and Custom in Myanmar and the Myanmar Family, Netherlands, 1963, p-6.

¹¹ Maung Maung, Dr, Law and Custom in Myanmar and the Myanmar Family, Netherlands, 1963, p-7.

¹² Tin Aung Aye, Dr, Interpretation of Statute Law and Treaty, Say Tha Nar Sar Pay, second edition, 2011, p-9.

They reflect do not lay down the law, they reflect the customs and the rules which act an play in society, and when the reflections are clear, the customs and rules are accepted as having binding force. Thus the Dhammathats not the sole repository of Myanmar Customary Law, which is also to be ascertained from decided cases and the prevailing customs and practices of Myanmar.¹³

The Dhammathats themselves from one of the most important sources of information about the body of customs observed by Burmans, and the rules, contained in the Dhammathats, which have in the course of time crystallized into rules of positive law have in turn been modified and adopted by custom to meet the needs of a changing society.¹⁴

Judicial decisions constitute the third and today perhaps the most important source of Myanmar Customary Law.¹⁵

Rules of Law adjudges based on the cases which come in front of the State's highest court. For many reasons, rules of law differ from one another. There is no exactness in some laws. As Dhammathats are different from one another, there is no fairness. In order not to face that kind of situation, the legislation body has to enact law if necessary. Therefore, that legislation is the source that amends Customary Law.

As Myanmar Customary Law itself is a customary Law only, if customary law and enacted law are contradicting, enacted law will prevail.

2.2 Persons who concerned with Myanmar Customary Law

The Buddhist law in section 13 (1) of the Myanmar Laws Act clearly indicated the intention of the legislature. The object is that Courts should apply only such Hindu law to the Hindus, such Mohammedan law to the Mohammedans, and such Buddhist law to the Buddhists as is well known to the Courts and to the people in the country in the matter of marriage, inheritance, succession, etc.¹⁶

Therefore, Wedding (or) marriage under the Buddhist customary law concerns Myanmar Buddhists, but not the people of Mohammedan, Hindu and Christian.¹⁷ Now, Burmese Buddhist Law or Buddhist Law is expressly called as Myanmar Customary Law.

Even the offsprings come out of Buddhist parents did not go to pagoda for religious purpose, they can be considered as Buddhists if they were not converted to any other religion. However, it is rather difficult to decide whether Buddhists or not for those who were

¹³ Maung Maung, Dr, Law and Custom in Myanmar and the Myanmar Family, Netherlands, 1963, p-10

¹⁴ Moothan, O. H, Burmese Buddhist Law, Oxford University Press, 1939, p-6.

¹⁵ Moothan, O. H, Burmese Buddhist Law, Oxford University Press, 1939, P-6.

¹⁶ Section 13 (1) of the Myanmar Laws Act, 1898.

¹⁷ Win Kyi, U, Myanmar Custom, 1st edition, Mar Mar Sar Pay, 1980, 2004, p-9.

converted from other religion and those who were not Buddhist generally. As there is no any ceremony converting into Buddhist to be a Buddhist like other religion, it is difficult to show evidence that they were actual Buddhist convert.¹⁸

A man believes in which religion is a feeling happened in his mind and it can not therefore be deduce easy.¹⁹ Offerings to Chinese Nat and paying worship to Chinese elders may also be under the Chinese traditional customs, but may not be religious affairs. Buddhists usually make offerings to Nat and hanging coconut for Nat out of religious affairs and it cannot be said as not Buddhist for behaving like that.²⁰

Although both parents are Tamil-Hindu, their son pays worship to Buddha and Sangha, offers food, listens to sermons, constructs pagodas, stands, as layman and ordains himself into monkhood and it means that he is Buddhist convert.²¹

To decide what religion he takes, it must be decided depending on his personal biodata, his physical and mental behavior and relationship with his environment. However, it can clearly see not to say as not a Buddhist even traditional performance for culture offerings to Nat etc, not for religious affairs.²²

Chinese-Myanmar half-breed (Chinese Buddhist)

Although a ruling says that Chinese Buddhists are Buddhists show in Myanmar Act, other ruling says they do not concern Myanmar Customary Law as they are not Buddhist. And again, another ruling says that the law concerning the Chinese residing in Myanmar is Chinese Customary Law.²³ It was confused during 40 years and it found that correct thought came out only when the case “Ma Yin Mya vs Tan Yauk Pu”²⁴ appeared up in 1927. In that ruling, it said that the marriage between Chinese Buddhist Male and Myanmar Buddhist Female must generally be based only on Myanmar Customary Law. The one who did not want to concern must be responsible to visibly show the following (3) facts,

- (1) That his/her customary law was existing like a law in Myanmar.
- (2) That the said customary law was against Myanmar Customary Law,
- (3) That the said customary law made no affect to Myanmar Buddhist woman.²⁵

¹⁸ Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-16.

¹⁹ Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-16.

²⁰ Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-17.

²¹ Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-18.

²² Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-19.

²³ Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-19.

²⁴ Ma Yin Mya Vs. Tan Yauk Pu, 5 Ran 4066.

²⁵ Ba Maw, U, The Marriage Law Of Myanmar, Win Sar Pay, 1st edition, 1992, p-7.

If a Chinese Buddhist concerns Myanmar Customary Law, there are more reasons for Chinese-Myanmar half-breed Buddhists to concern Myanmar Customary Law. Chinese-Myanmar half-breed are Myanmar national race since their birth and their action and manner are totally the same to Myanmar Buddhists. Thus, Chinese-Myanmar half-breed Buddhists concern Myanmar Customary Law only, if it is unable to visible show that his/her customary law is existing like a law in Myanmar and that the said customary law is against Myanmar Customary Law.²⁶

Foreigner Buddhists

The Buddhists staying in Myanmar concern Myanmar Customary Law even they are foreigner.²⁷ A foreigner Tamil-Hindu was born in Myanmar and permanently resided in Myanmar and died in Myanmar only. Even his both parents were Tamil-Hindu, they themselves paid worship to Buddha and Sangha, offered food, listened to sermons, constructed pagodas, stood as layman and laywoman and ordained themselves into monkhood and their succession case must be decided under Myanmar Customary Law.²⁸

National races

If the national races such as Kachin, Kayin, Kayah, Chin, Mon, Myanmar, Rakhine and Shan are Buddhists, they concern Myanmar Customary Law. If anyone wants nothing to concern, he/she must show (3) facts laid down in the judgement of “Ma Yin Mya vs Tan Yauk Pu.” If he/she is unable to show these (3) facts clearly, he/she concerns Myanmar Customary Law as unitedly decided in rulings.²⁹

So, following races concern Myanmar Customary Law if there is no any traditional customs existing like a law, against Myanmar Customary Law –

1. Myanmar national race Buddhist
2. The Buddhists who come from abroad and permanently settle in Myanmar.³⁰

Kayin race

If Kayin races are Buddhists, they concern Myanmar Customary Law as found in the judgement of “Maung Saw Tu vs Ma Sar Ma.”³¹

²⁶ Daw Theik Vs. Si Yong Ah Lin, 1951, M.L.R, (H.C), p-133.

²⁷ Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-23.

²⁸ U Mg Myint (a) Sivar Ligon Saray Vs. Ko Ko (a) Chinnayavary and 13, 1976, M.L.R, p-12.

²⁹ Ba Maw, U, The Marriage Law Of Myanmar, 1st edition, 1992, p-8.

³⁰ Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-24.

³¹ Maung Saw Tu Vs. Ma Sar Ma, 25 I.C. 342.

Chin race

If Chin races are Buddhists, they concern Myanmar Customary Law. If refused as not concerned, that one who make refusal is responsible to show enough evidence.³²

Shan race

If Shan races are Buddhists, they concern Myanmar Customary Law as found in the judgement of “Ma Shwe Yin vs Maung Ba Tin.”³³

Rakhine race

If Rakhine races are Buddhists, they concern Myanmar Customary Law.³⁴

Matrimonial affairs of high landers

Some high lander races who settle in hilly area in Myanmar are Buddhists, but some are Christians and Nat worshippers. There was no exact judgement done by any law during those days for matrimonial affairs of the said high lander races. They were satisfactory only under the verdict of administrative officers.³⁵ So, the law concerning matrimonial affairs high landers was unsure. Supreme Court got a right to make outright decision for these cases only in 1969.³⁶

It was judged in the plenary tribunal for the case “Nacitie vs Afusi”³⁷ that any foreign law should not be reviewed for the matrimonial affairs of high landers and that it should be decided only under the traditional customs of the clients concerned.

In that case, “Nacitie vs Afusi” were a couple of high landers (Lesu). Although they were got married by pastor as they were Christians, they said that they celebrated wedding reception under Lesu traditional customs, gifted and paid gift. In case of matrimonial problems, they did not go to court, they did not observe Divorce Act concerning Christian, but they went to the elder in their village to have decision. It was correct they lived in plain, but it was at the foot of mountain and not very far from hilly area. It was not exclusive in Kachin State and they resided only in the state. They married in Lesu village and they were familiar to Lesu traditional customs. So, Afusi shows a reason that he refused to pay matrimonial gift under Lesu traditional customs when Nacitie prosecuted for divorce. In

³² Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-29.

³³ Ma Shwe Yin Vs. Maung Ba Tin, 1 Yan 143.

³⁴ Ba Maw, U, The Marriage Law Of Myanmar, Win Sar Pay, 1st edition, 1992, p-8.

³⁵ Win Kyi, U, Myanmar Custom, 1st edition, 1980, 2004, p-11.

³⁶ Mya Sein, U, Myanmar Customary Law, Tauk Tauk Win Sar Pay, 10th edition, 2004, p-24.

³⁷ 1969, M.L.R, p-155.

setting case, Afusi said nothing about the words concerning Act, she said she would agree to divorce if paid back matrimonial gift. Their thought and their words were not the word of Act, or not thought of Act. It was a traditional word kept in their mind. It was a habit of traditional customs. Divorce was a type of civil case and it could be finished by mutual consent generally.

Matrimony is a social affair and all matrimonial affairs should be decided only under the traditional customs observed by most local people. So that it would be fair and understood in local.

“Thus, Traditional Law of Lesu is a judicial law in the matrimonial affairs of the said Lesu couple.” It was decided that Hilly Commissioner should take action under the said traditional law in that case.³⁸

That judgement became guideline ruling for matrimonial affairs of high landers. As matrimony is a social affairs, it should be decided only under the traditional law observed by the people in that country/ area. Worship and religion of the clients concerned are important nothing. Any foreign law is needed nothing to be reviewed in such case.³⁹

But, in deciding a case under the tradition or customs of high landers, it needs to visibly show that the said tradition or customs is existing tight like a law.⁴⁰

The men of different religion who married Buddhist women, or considered as married became couple of husband and wife under Special Act of Marriage and Succession for Buddhist Women 1954 and that was why their divorce, succession, dividing inheritance, guardianship for children and ownership concerned Myanmar Customary Law only.

³⁸ Nacitie Vs. Afusi, 1969, M.L.R, 155.

³⁹ Ba Maw,U, The Marriage Law Of Myanmar, Win Sar Pay, 1st edition,1992, p-10.

⁴⁰ U San Thein Vs. Maung Khaing, 1965, M.L.R, p-554.

3. The Nature of Marriage

The Myanmar word for marriage, eindaung-pyu means set up house.⁴¹

The Myanmar marriage is purely a civil and consensual contract even at the present day.⁴²

Myanmar Customary Law contains no prohibition forbidding marriage between a Myanmar Buddhist and a person of another race or religion.⁴³

The forms of marriage and the incidents of the status of husband and wife may vary in different countries.⁴⁴

Myanmar Buddhist marriage may be contracted in several ways. Manugye refers to three modes of becoming man and wife namely:-

- (a) a man and woman given in marriage by their parents, who live and eat together;
- (b) a man and woman brought together by the intervention of a go – between, who live and eat together; and
- (c) a man and woman who come together by mutual consent and live and eat together.⁴⁵

It has been judicially interpreted that living and eating together is not an essential condition to marriage but merely a proof of marriage.⁴⁶

3.1 Essentials of a valid marriage

There are six essential facts needed to constitute a valid marriage when a Buddhist man marries a Buddhist woman. They are (1) age of boy (2) age of girl (3) consent to the marriage (4) whether both parties are insane or not (5) whether the woman has subsisting marriage tie (6) consummation. If a Myanmar Buddhist man and woman, who are otherwise competent to marry, cohabit with the intention of becoming husband and wife presently, then

⁴¹ Maung Maung, Dr, Law and Custom in Myanmar and the Myanmar Family, Netherlands, 1963, p-54.

⁴² Moothan, O. H, Burmese Buddhist Law, Oxford University Press, 1939, p-13.

⁴³ Moothan, O. H, Burmese Buddhist Law, Oxford University Press, 1939, p-13.

⁴⁴ Chan-Htoon, U, Principles of Buddhist Law, 1894, p-13.

⁴⁵ Lahiri, S.E, Principles of Modern Myanmar Buddhist Law, Calcutta, sixth edition, 1957, p-7.

⁴⁶ Ibid

they are a married couple in the eye of law irrespective of what other people may think of them.

3.1.1 Marriageable age of a boy

The Dhammathats prescribe age limits for a girl to marry a man of her choice without the consent of her parents or guardian but do not fix a limit of age below which a young man cannot marry a girl of his choice without his parent's consent.⁴⁷

In 1918 it was held in a case that there was nothing in Myanmar Customary Law to prevent a youth from contracting a valid marriage without his parents' consent at any time he was physically competent for marriage.⁴⁸ In 1925, the Rangoon High Court decided that a Myanmar Buddhist youth above 16 years of age could contract a valid marriage. But in *Maung Thein Maung Vs Ma Saw* case⁴⁹, it was held that a Myanmar Buddhist youth of any age can enter into a valid marriage without the consent of his parents or guardian when he attains puberty.

3.1.2 Marriageable age of a girl

The Dhammathats as were extracted at Digest II, 33 exhorted parents to give their children in marriage when they are 15 or 16⁵⁰ and Manugye permits an unmarried woman above the age of 20 years to marry a man of her choice where the parents or guardians have not already given her in marriage.⁵¹

In *Ma E Sein Vs Maung Hla Min*⁵² case, the Rangoon High Court which has declared that, except in the case of widows or divorcees, a girl under 20 years of age cannot contract a valid marriage without the consent, either express or implied, of her parents or guardian.

The laws from Majority Act is not concerned with marriage and it is explicitly enacted in Majority Law. It is needed to decide whether marriage becomes bafflement or not in accordance with Myanmar Customary Law, not with Contract Act. According to the law, a spinster can get married legally with the consent of her parents before she turns into 20 years old. In the case of *Mg Tin Ohn and Ma Aye San*'s parents approve of their marriage occur, they are legal husband and wife since they get married.⁵³

⁴⁷ Lahiri, S.E, Principles of Modern Myanmar Buddhist Law, Culcutta, sixth edition, 1957, P-13.

⁴⁸ *Maung Nyein Vs Ma Myin*, 3 UBR 75.

⁴⁹ 6 Ran 340.

⁵⁰ E Maung, Dr, Myanmar Buddhist Law, Rangoon, 1970, p-33.

⁵¹ Lahiri, S.E, Principles of Modern Myanmar Buddhist Law, Culcutta, sixth edition, 1957, P-13.

⁵² 3 Ran 455 (F.B).

⁵³ *Ma Hla Me Vs. Maung Hla Baw*, 8 Ran 425 (433).

Therefore a spinster under 20 years of age cannot do so except with the consent of her parents or guardian.

3.1.3 Consent to the Marriage

A marriage between two Myanmar Buddhist created by cohabitation coupled with intent to become husband and wife presently and not in future.⁵⁴ The parties must give their mutual and free consent to become husband and wife presently.⁵⁵

Where a bridegroom's parents negotiate a marriage with the bride's parents and give them certain parents and this is followed by a ceremony at which according to the custom of the locality neither the bride nor the bridegroom is present, and the bride never receives the bridegroom and repudiates the marriage the same day; such a marriage is not valid in spite of the ceremony as there is no consent on the part of the bride.⁵⁶

Without the free consent of the bride and bridegroom there cannot be a valid marriage.⁵⁷ Though parental consent is essential for the validity of the marriage, still a minor cannot be forced into a marriage against his or her will.⁵⁸

Now, parents are not entitled to give daughters, minors or majors, in marriage against such daughters' will.

Hence, an agreement to marry is an essential step in the creation of marriage status. The consent to become husband and wife must be free consent and mutual consent in accordance with the section 14 of the Contract Act. According to section 14, consent is said to be free when it is not caused by;

- (1) Coercion
- (2) Undue influence
- (3) Fraud
- (4) Misrepresentation
- (5) Mistake.⁵⁹

3.1.4 Consummation

One element of a valid marriage over which some doubt has been cast is consummation.⁶⁰

⁵⁴ Ma Hla Me Vs. Maung Hla Baw, 8 Ran 425 (433).

⁵⁵ Maung Tun Aung Vs. Ma E Kyi, Ran 215 (F.B).

⁵⁶ Ma Thein Tin Vs Maung P_o Than, AIR 1930 Ran 210.

⁵⁷ Maung Thein Vs Ma Thet Hnin 8 LBR 347.

⁵⁸ Nga Ku Vs Q.E 1 UBR (97-01) P-330.

⁵⁹ Section 14 of the Contract Act, 1872.

In Ma Hla Me Vs Maung Hla Baw case,⁶¹ there was some ceremony as was customary to persons in the station of life of the couple but that immediately after the ceremony a dispute arose between the parents of the couple with that the ceremony was not followed the breach. It was held that consummation is essential to perfect the relation of husband and wife.

But in Maung San Aung Vs. Ma Kyi Kyi Way⁶², the validity of the rule requiring consummation to perfect Myanmar Buddhist marriage was reconsidered. Saw Ba thein, J., after an examination of the authorities came to the conclusion that consummation is not an essential element in constituting the relation of husband and wife. This conclusion was accepted by Dr Maung Maung, J. (as he than was) in Ma Tin Thein Vs. Maung Win Khaing.⁶³

Also Daw Khin Mya Mar (alis) Mar Mar V. U Nyunt Hlaing case,⁶⁴ Daw Khin Mya Mar did not dispute that there was an engagement between the parties; that there was a marriage ceremony whichin relatives and friends of both parties were invited and treated to meals; and that before the ceremony the parties took an oath of marriage and signed a certificate of marriage before a magistrate. The bridegroom claimed that he and the bride slept together. The bride disputed this claim, stating that though there was a marriage ceremony she went and slept with her great-aunt and that there was not a single night (instance) of consummation. Moreover, to prove that she was at the time of the suit still a virgin, she submitted herself to a medical examination and also proffered two doctors as witnesses. The Chief Court was decided that a couple can be legally considered to be husband and wife under Myanmar Customary Law if the bridegroom and bride after having been married with mutual consent and the consent of parents from both sides.

Now, the question of consummation did not arise.

3.1.5 The Woman must not have a Subsisting Marriage tie

A subsisting marriage is a bar to another marriage of the woman. But as polygamy is legal, a subsisting marriage is no bar to a subsequent marriage of the man.⁶⁵

Now, Monogamy Law is enacted on 31th, August, 2015 by the Pyidaungsu Hluttaw Law No. 54/2015. Monogamy Law is stated as follows;

⁶⁰ Maung Maung, Dr, Law and Custom in Myanmar and the Myanmar Family, Netherlands, 1963, P-59.

⁶¹ 8. Ran 425.

⁶² 1963 C.C. 995.

⁶³ 1965 C.C 199.

⁶⁴ 1972 Civil Appeal No38.

⁶⁵ E Maung, Dr, Myanmar Buddhist Law, Rangoon, 1970, P-35.

On the date this law enters into force, any man or woman who is already married with one spouse or more than one spouse in accordance with a law or a religion or a custom, shall not enter, while the original union is still legally recognized, into another marriage with another person or conduct an illegal extramarital affair.⁶⁶

On, or after, the date this law enters into force, any man or woman who is already married in accordance with a law or a religion or a custom, shall not enter, while the original union is still legally recognized, into another marriage with another person or conduct an illegal extramarital affair.⁶⁷

Whoever violates the provisions of section 10 or section 12 of this law, he or she shall be punished with imprisonment of either description for a term which may not exceed to seven years and shall be liable to fine.⁶⁸

Any man or woman, if he or she was previously married, can enter into another marriage with another person, only after declaring the previous marriage and showing evidence of legal divorce with his or her previous spouse.⁶⁹

Whoever violates the provisions of section 11, he or she shall be punished with imprisonment of either description for a term which may not exceed to ten years and shall be liable to fine.⁷⁰

Despite whatever contradictories with an existing law or religion or custom, if any husband or wife, while an original union is still legally recognized, marries another person, he or she is deemed to commit a matrimonial crime, and he or she spouse has the right to dissolve the marriage tie.⁷¹

In a divorce according to section 14, the person who commits a matrimonial crime shall forfeit the right of his or her joint property.⁷²

If a husband who is married according to a law or a religion or a custom, enters into another marriage with another woman while the original union is still legally recognized, such marriage is not legal and thus the second wife shall not be entitled to inheritance. The husband who marries and lives together with another spouse shall also not be entitled to inheritance of the first wife and second wife.⁷³

⁶⁶ Section10 of Monogamy Law, 2015

⁶⁷ Section 12 of Monogamy Law, 2015.

⁶⁸ Section 13 of Monogamy Law, 2015.

⁶⁹ Section 11 of Monogamy Law, 2015.

⁷⁰ Section 17 of Monogamy Law, 2015.

⁷¹ Section 14 of Monogamy Law, 2015.

⁷² Section 15 of Monogamy Law, 2015.

⁷³ Section 16 of Monogamy Law, 2015.

So, Buddhist woman, having a husband living, marries again shall be punished under Monogamy Law, 2016. If the man marries that woman although he knows she has legal husband, it is adultery, he shall be punished under the section (497) of the Penal Code.

3.2 Proof of Marriage

Many cases often arise in which it is necessary for the Court to decide whether an alleged union of a man and woman constitutes a legal marriage or not. Where there has been a formal ceremony or where public announcement has been made by the contracting parties or their parents, there is no difficulty but where no such formality or announcement can be put forward and the fact of marriage is denied by the opposite party, other matters must be enquired into.⁷⁴

When proof of marriage depends wholly or mainly on reputation that circumstances of the case must be scrutinized with some caution.⁷⁵

In Buddhist law by U May Oung states the following in accordance with the conduct and repute,

- (1) Did the man or woman or both ever admit their status?
- (2) Did they live together?
- (3) Did the two behave towards each other and towards others in a way usual to married couples?
- (4) Did they visit relatives and friends in each other's company?
- (5) Did they go together to places of worship?
- (6) How was the man treated by the relatives of the woman, or the woman by those of the man?
- (7) What is the character and position of the woman and her parents?
- (8) Is there anything to show that the relationship between the parties was regarded as illicit by their friends and relatives?
- (9) Is there acting jointly in making or taking conveyance of property?
- (10) If one of the parties has died, what was the other's conduct at the funeral?

But, these, and other indications, though not necessarily all of them, must be considered in deciding whether the full status of husband and wife had been established between the parties.⁷⁶

⁷⁴ Ba Maw, U, *The Marriage Law of Myanmar*, Win Sar Pay, first edition, 1992, P-34.

⁷⁵ *Mie Me Vs. Mi She Ma* 1 UBR (10-13) P- 1 (PC).

⁷⁶ May Oung, U, *Leading Cases on Buddhist Law*, Rangoon, 1914, P-20.

Where there is a dispute, and proof of marital status has to depend only on habit and repute, then the facts have to be carefully examined, and a bare statement by a witness that the husband and wife is held insufficient.⁷⁷ There must be some body of neighbors, many or few, or some out of public, large or small, before repute can arise.⁷⁸

Where there is no regular cohabitation under the same roof and the couple who resort to each other for purposes of intimacy are thought by some to be engaged and by others to be mere friends and cousins. Such acts to be not establish marriage by reputation.⁷⁹

But where a man and a woman here openly lived together as husband and they have regarded as such by their friends and relations who have seen them so, a presumption arises that the couple intended a valid union.⁸⁰

And in *Maung Maung Vs Ma Sein Kyi* case,⁸¹ it was held that a bare statement by a witness that a certain couple are man and wife is not evidence of repute. Where the status has to be determined from habit and repute, the conduct of the parties themselves, and the conduct of the neighbors and friends who treated them as though they were man and wife, can be admissible as evidence from which the status is to be inferred.

In order to prove marriage there must be evidence not merely of a desire by one person to be considered as having married another but of the consent that other, express or implied, to the joint assumption of a status consistent with marriage bond.⁸²

At the present day the life has changed. It has become popular and fashionable with the young people these days to go to a judge or magistrate and sign, affidavits, in the present of a few friends and elders, stating their competence and intention to marry. The affidavit is then kept by the parties, the young man keeping the young woman's and vice versa, as certificate of marriage and proof. This procedure saves the expense of big ceremonies and receptions, is quicker, and looks more legal in that there are documents to keep which bear stamps and seals and signatures.

Now the value of stamp for affidavits is 150 Kyats by Pyidaungsu Hluttaw law 14/2014 in 2014.

3.3 Marriage with non-Buddhists

⁷⁷ *U Tin yin Vs Maung Ba Han* 1949 BLR 443 (H.C).

⁷⁸ *Ma Wun Di Vs Ma Kin*, 4 L.B.R 175 (179) P.C.

⁷⁹ *U Tun Sein Vs Ma San Myint* A.I.R 1938 Ran 115.

⁸⁰ *S.A Anamalay Pillary Vs Po Lan*, 3 L.B.R 228.

⁸¹ 1940 Ran 562.

⁸² *U Tun Sein Vs Ma San Myint*, AIR 1938 Ran 115.

There are not provision that a Buddhist cannot marry any religious in the Dhammathats and Myanmar Custom. So, mixed marriages between Myanmar Buddhist and non-Buddhist gave rise to problems Buddhist women and non- Buddhist men relating to maintenance, divorce or inheritance. All matters of divorce, inheritance, partition and guardianship of children were mostly decided by the foreign judge. It was unequitable and injustice to Buddhist women. In order to protect the Buddhist woman from those matters, Buddhist Women's Special Marriage and Succession Act, 1954 was passed in 1954. Now, Buddhist Women's Special Marriage and succession Act, 1954 was revoked by Buddhist Women's Special Mariage law, 2015 (Pyidaungsu Hluttaw law No 50 of 2015) in 2015.

3.3.1 Marriage with Mahomedons

No marriage is possible between a Mahomedon man and a Buddhist woman.⁸³ As Myanmar Buddhists are not Kitabis, of so no marriage is valid between a Mohomedan and a Myanmar Buddhist unless the latter embraces the Mohamedan faith or any other revealed religion believing in one God and the marriage is celebrated according to the rites of the Mahomedon.⁸⁴

The reason is that a personal disability attaches to Mahomedans in respect of marriage with persons who do not believe in a heavenly or revealed religion and are therefore not Kitabis. But if there is a conversion to Mahomedanism and a ceremony is performed according to Mahomedan rites, a legal marriage can be contracted. This is what takes place generally in Myanmar when the women of the country take Mohomedan husbands. They thereupon lose all rights which they had as Myanmar women such as joint ownership of the property, a perferen right to inherit, and so on. If one sues for a divorce, the Mahomedan law forms the rule of decision, and she is estopped from denying her profession of the husband's faith.⁸⁵

If the converted Myanmar apostatizes from the Mahomedan faith the marriage tie is immediately dissolved without a talak or decree of the Court.⁸⁶ Uttering of words against the Mohomedan faith or any oral act of faith in any religion other than Mahomedanism constitutes apostacy.⁸⁷

Myanmar Customary law contains no prohibition forbidding marriage between a Myanmar Buddhist and a person of another race or religion, and hence in the case of

⁸³ Queen Empress Vs Nga Pale, P.J 607.

⁸⁴ Ma Le Vs Maung Kye, 2 UBR (97-01) P-497.

⁸⁵ Kusnal Sheriff Vs Ma Shwe Ywet, S.J 491.

⁸⁶ Ma Saing Vs Kaidar Moidin, 8 B.L.R 16.

⁸⁷ Hussain Unwar Vs Fatima Bee, S.J 368.

marriages contracted in Myanmar the validity thereof, provided the provisions of the Myanmar Buddhist law of marriage have been observed, depends upon the capacity of the other party to enter into the marriage.⁸⁸

3.3.2 Marriage with Hindus

A Hindu cannot contract a legal marriage with any woman unless she belongs to his own caste, hence a Hindu of the Brahmin, Kshatriya, Visya, or Sudra caste cannot contract a valid marriage in the orthodox style with a Myanmar Buddhist.⁸⁹

The law is not so strict with those Hindus who belong to the fifth caste. Until the contrary is proved a Pariah or Panchama can contract a valid marriage with a Myanmar Buddhist.⁹⁰

3.3.3 Marriage with Christians

Ma Chain Vs Ma Nyein case was the first case of Myanmar Buddhist women who marry with Non-Buddhist men. In Thibaw regime, Myanmar Buddhist women and Christian man married. While these people were staying married, Myanmar was colonized by British. The Christian Marriage Act was published by British. The Christian husband died after the Christian Marriage Act, 1872 was published. And his sister filed a suit that the Buddhist woman was not unlawful wife according to the Christian Marriage Act, 1872 and she could not receive the right of ownership of the brother's property. But, the court decided that she was the legal wife because they married before the Christian Marriage Act, 1872 and she got the right of ownership of the husband's property.⁹¹

A Christian can contract a valid marriage with a Myanmar Buddhist provided the marriage is solemnized according to the provisions of section 5 of the Christian Marriage Act No (15 of 1872). A Buddhist marries with a Christian to be a Husband and wife but this marriage has not solemnized under this section, they are not legal husband and wife under law.⁹²

If a Myanmar embraces Christianity and married a Christian in a valid way and subsequently reverts to Buddhism, he or she is not thereby entitled to contract a second marriage remains intact,⁹³ for apostasy does not cancel a Christian marriage. The husband of

⁸⁸ Moothan, O. H, Burmese Buddhist Law, Oxford University Press, 1939, P-13.

⁸⁹ Maung Man vs Doramo, 3 L.B.R 244

⁹⁰ S.A. namalay Pillary Vs Po Lan 3 L.B.R 228.

⁹¹ Wikivisually.com/wiki/History-of-Myanmar.

⁹² U Aye Hlaing Vs Daw Nar Ta Hlar (alin) Bu Thee, Civil first Appeal No 28 H.C; (Mandalay), 1977.

⁹³ Maung Kyaik Vs Ma Gy, 11 UBR (97-01) P-488.

a Myanmar Buddhist couple by embracing Christianity cannot automatically dissolve his former marriage, for change of religion does not dissolve the Myanmar Buddhist marriage tie.⁹⁴

3.3.4 Marriage with Chinamen

A valid marriage can be contracted between a Chinaman, whether Buddhist or Confucian.⁹⁵ At first the law required that the marriage should be celebrated not only according to Myanmar Custom but also according to Chinese Custom.⁹⁶

Later Rangoon High Court has decided in a Full Bench case in *Ma Yin Mya Vs Tan Yauk Pu*,⁹⁷ that the Myanmar Buddhist law regarding marriage is *prima facie* applicable to Chinese Buddhists as *Lex Loci Contractus*, and to escape from the application of Myanmar Buddhist law regarding marriage a Chinese Buddhist and prove that

- (1) he is subject to a custom having the force of law in Myanmar,
- (2) that custom is opposed to the provisions of the Myanmar Buddhist law applicable to that case, and
- (3) he must show that the application of that custom having the force for law will not work injustice to the Myanmar Buddhist women.

And in the case of marriage in Myanmar between a Chinese Confucian and a Myanmar Buddhist woman the Myanmar Buddhist law regarding marriage is *prima facie* applicable as *lex loci contractus* which requires nothing more than mutual agreement to become husband and wife followed by consummation⁹⁸ and Chinese ceremonies were declared to be unnecessary.⁹⁹

The Buddhist Women's Special Marriage and Succession Act 1954 determined to govern the marriage between Myanmar Buddhist woman and non-Buddhist man to the rights of Buddhist women entitled under Myanmar Customary Law in the case of a marriage.

The Buddhist Women's Special Marriage and Succession Act (Burma Act No.24 for 1939 in English) came into force from the 1st April 1940. Before the passing of the Buddhist Women's Special Marriage and Succession Act, the position of Myanmar Buddhist wife who married non-Buddhist man was very unfavourable.¹⁰⁰

⁹⁴ *Ma E Than Vs Ma Thein Khin*, A.I.R. 1935 Ran 37 (39).

⁹⁵ Lahiri, S.E, *Principles of Modern Myanmar Buddhist law*, Calcutta, sixth edition, 1957, P-26.

⁹⁶ *T Wain Shein Vs Ma Hnin Hlaing*, 4 B.L.T 124.

⁹⁷ *Ma Yin Mya Vs Tan Yauk Pu*, 5 Ran 406 (F.B).

⁹⁸ *Ma Kyin Mya Vs Maung Sit Han*, 1937 R.L.R 103.

⁹⁹ *Ma Shein Vs Kim Sein*, 9 B.L.T. 81

¹⁰⁰ Lahiri, S.E, *Principles of Modern Myanmar Buddhist law*, Calcutta, 1957, p-29.

A new Act was drafted and passed in Myanmar language by parliament in 1954. Certain improvements were also introduced into the Act to provided for the better interest of the Buddhist women.¹⁰¹

Now, Buddhist Women's Special Marriage and Succession Act, 1954 was revoked by Buddhist Women's Special Marriage Law, 2015 (Pyidaungsu Hluttaw Law No 50 of 2015) in 2015.

This law protects the Buddhist women who marry with non- Buddhist as follows,

Whenever a non- Buddhist man and a Buddhist woman intend to contract a marriage, one of them shall apply in writing in prescribed form to the Registrar within the jurisdiction where one of them is residing.¹⁰²

The non- Buddhist man shall sign in the presence of the Registrar and two witnesses that the facts stated in the application are true.¹⁰³

Fourteen days after notice of an intended marriage has been given under section 9, such marriage may be solemnized by the Registrar unless it has been previously objected to under section 11 and section 13.¹⁰⁴

If a non-Buddhist man and a Buddhist woman live together in such manners as would raise the presumption that they are man and wife by Myanmar custom – had they both been Buddhists- the new law establishes the presumption that they are lawfully married from the time they started to live together.¹⁰⁵

If the marriage is contracted, or deemed to be contracted under this law, the children who are born of those parties shall be deemed to be legitimate children.¹⁰⁶

All issues concerning the right to property ownership and inheritance relating to persons who have contracted, or deemed to have contracted, a marriage under this law, and their lawful husbands, lawful wives and all lawful children, shall be decided according to Myanmar Customary law as if they and their families were Buddhist.¹⁰⁷

If a husband, whose law and religious custom prohibits a legal marriage with a Buddhist woman, divorces the woman, or forsakes or behaves cruelly and causes mental harm whether or not it amounts physical violence, he must leave his share of the joint

¹⁰¹ Maung Maung, Dr, Law and Custom in Myanmar and the Burmese Family, Netherlands, 1963, p-71.

¹⁰² Section 6 of the Buddhist Women's Special Marriage Law, 2015.

¹⁰³ Section 8 of the Buddhist Women's Special Marriage Law, 2015.

¹⁰⁴ Section 10 of the Buddhist Women's Special Marriage Law, 2015.

¹⁰⁵ Section 22 (a) of the Buddhist Women's Special Marriage Law, 2015.

¹⁰⁶ Section 31 of the Buddhist Women's Special Marriage Law, 2015.

¹⁰⁷ Section 24 of the Buddhist Women's Special Marriage Law, 2015.

property to her, and custody of all the children and the man shall pay maintenance for children who are minors.¹⁰⁸

However, when the woman converted to the Buddhist religion, due to the reason that any religious custom that has legal effect, or to any law that has effect on custom, that does not allow the marriage between a non- Buddhist man and a Buddhist woman, if there is wish to divorce, the man or the woman can divorce within an appropriate period with effect from the date that the woman converted to the Buddhist religion. Due to that reason,

- (a) If the man would divorce the woman-
 - (i) The man shall pay monthly maintenance that is sufficient to continue a standard of living not lower than the standard of the woman prior to the conversion of the religion, until the woman contracts another marriage.
 - (ii) The woman shall be entitled to all properties that the woman owned solely prior to the conversion of religion by the woman. However, the woman shall not be entitled to any property owned solely by the man prior to conversion of the religion.
 - (iii) The woman shall hold the right of guardianship on all the children who are minors.
 - (iv) The man shall pay maintenance to all the children who are minors.¹⁰⁹
- (b) If the woman would divorce the man-
 - (i) The woman shall not be entitled to any property solely owned by the man prior to conversion of religion to Buddhism by the woman except the property solely owned by the man prior to conversion of religion to Buddhism by the woman except the property solely owned by the woman.
 - (ii) The woman shall hold the right of guardianship on all the children who are minors.
 - (iii) The man shall pay maintenance to all the children who are minors.¹¹⁰

If the husband was a Hindu, Sikh or Jain and belonged to an undivided family his rights in that family devolved on the wife and children if he died before partition of property in that family.¹¹¹

¹⁰⁸ Section 27 of the Buddhist Women's Special Marriage Law, 2015.

¹⁰⁹ Section 29 (a) of the Buddhist Women's Special Marriage Law, 2015.

¹¹⁰ Section 29 (b) of the Buddhist Women's Special Marriage Law, 2015.

¹¹¹ Section 26 of the Buddhist Women's Special Marriage Law, 2015.

The provision of Myanmar Customary law relating to matters of divorce, partition, guardianship of children, shall have effect on persons who contracted marriages under this law or persons who are deemed to have contracted a marriage under this law, as if they all were Myanmar Buddhists.¹¹²

So, not only the life of Buddhist Women who marry non-Buddhist man but also questions of divorce, inheritance and succession, and custody of children, and ownership of properties were covered by this law.

4. The Incidents of Marriage

There are many cases relating to marriage. They are damages for breach of promise to marry, damages for seduction, claims for maintenance by wife and restitution of conjugal rights. They are the followings.

4.1 Damages for breach of promise to marry

The Lower Myanmar view in the beginning was that a suit for damages for breach of promise of marriage out to be decided according to the contract Act.¹¹³ The Upper Myanmar view on the point was that such suits out to be decided according to Myanmar Customary Law.¹¹⁴

And Full Bench of the Chief Court of Lower Myanmar held that as every marriage must be preceded by an offer and its acceptance, the prior agreement to marry formed an integral part of every marriage and any question arising from the promise must be deemed as one regarding marriage, and within the ambit of Myanmar Customary law.¹¹⁵

But a Full Bench of the High Court later drew a distinction between an agreement *in presenti*, contemporaneous with cohabitation and forming an integral part of the marriage, which would be governed by the customary law, and an agreement to marry *in futuro* which would neither affect the status of the parties nor form an integral part of the proposed marriage, to which the Contract Act and general law of the land would apply. The case one which a young Myanmar boy of 15 had an affair with a Myanmar girl of about the age, and when she was with child refused to marry her. The Lower Court to which a suit for damages

¹¹² Section 25 of the Buddhist Women's Special Marriage Law, 2015.

¹¹³ Maung Tun Kyin Vs Ma Mai Tin, 10 LBR 28.

¹¹⁴ Kan Gaung Vs Mi Hla Chok, 11 U.B.R (07-09) Contra p-5.

¹¹⁵ Maung Gale Vs Ma Hla Yin, 11 L.B.R 99 F.B

for breach of promise was brought award a decree on the ground that the suit was governed by Myanmar Customary Law in the eyes of which a boy of is was competent to marry – physical competent being the test – and therefore his promise, to marry could from a cause of action. If, however, as the Appellate Court thought, the subject matter was not one relative to marriage, but that of contract, to be governed by the Contract Act which then would test competence by the Majority Act, then the boy being used 18 would not be competent to contract without the support of his parents’ consent, and a suit for breach of contract would not therefore lie. It was on a reference from the Appellate Court that the High Court gave its Full Bench decision distinguishing between matters of marriage, to which the customary law applies, and contracts which stand apart from marriage though they may be its prelude.¹¹⁶

A man can sue a woman for damages for breach of promise of marriage.¹¹⁷

In Maung Ko Gyi Vs Daw On Khin case,¹¹⁸ where the mother of a minor girl successfully claimed damages for breach of promise of marriage against the man, turned on special facts and the Learned Chief Judge made it clear that the decision was on the special facts of the case. There the agreement was tri-partite. The minor daughter and the man promised to marry each other and in consideration of the man’s promise to marry the daughter the mother promised to consent to her daughter contracting marriage. Since at Myanmar Buddhist Law, a minor girl cannot contract a valid union without her parents’ consent, the agreement between the man and mother of the girl was a valid contract.

Where a man undertook to pay damages to his wife if he failed to live in her house and to work and support her but ultimately broke his promise, he was held liable to pay damages.¹¹⁹

So, it may be said that a suit for damages for breach of promise of marriage amongst Myanmar Buddhists is to be decided not according to Myanmar Buddhist law but according to the provisions of the Contract Act.¹²⁰

4.2 Damages for Seduction

A man can sue a woman or a woman can sue a man for breach of promise of marriage but a woman cannot sue a man for damages for seduction.¹²¹

¹¹⁶ Maung Tun Aung Vs Ma Aye Kyi, 14 Ran 215 FB.

¹¹⁷ Ma Ngwe Yin Vs Maung Po Taw, 7 B.L.T 14.

¹¹⁸ 1965 C.C 913.

¹¹⁹ Nga Po Gyi Vs Mi On, 1 UB.R (10-13) p-108.

¹²⁰ Maung Tun Aung Vs Ma E Kyi, 14 Ran 215 F.B.

¹²¹ Ma Yon Vs Maung Po Lu, 11 U.B.R (97-01) p-499

Where a Myanmar Buddhist woman with her own consent cohabits with a Myanmar Buddhist man and becomes pregnant and then claims damages, no question of marriage arises and consequently Myanmar Buddhist law is not applicable. According to justice, equity and good conscience no damages ought to be awarded as that encourages immorality.¹²²

When there has been no promise to marry, a Myanmar woman cannot recover damages for seduction resulting in pregnancy.¹²³

And in *Maung Than Htay Vs Ma Pu* case,¹²⁴ the Trial Court and the Lower Appellate Court found promise of marriage not proved but courts awarded the plaintiff damages. On the appeal to the Chief Count, it was decided that the decree of the lower Court awarding damages to the woman were set aside.

But in *Maung Myo Chit Vs. Ma Hla Pu*¹²⁵ case, it was held that a Myanmar woman can claim compensation for the woman becoming pregnant as a result of seduction, where there is no promise to marry.

It seems that the parents or guardian of a girl can sue the seducer for damages for the seduction of the girl.¹²⁶

The man took the sex of a woman by giving promise that he would marry her and later broke the promise. He is liable to prosecute under section 417 of the Penal Code.¹²⁷

4.3 Maintenance of Wife

There is positive duty cast on the husband to maintain his wife or wives.¹²⁸ If the husband fails to maintain his wife, a wife has two remedies available for securing maintenance. The first is civil suit according to the Myanmar Customary law¹²⁹ and the other is criminal suit under section 488 of the Code of Criminal Procedure.¹³⁰

A Myanmar Buddhist wife can bring a suit in the Civil Court for maintenance against her husband from whom she has separated.¹³¹

If the husband fails to maintain his wife he is liable to pay debts contracted by her for necessities.¹³²

¹²² *Ma Kin Vs Maung Myin Gyi*, S.J 114.

¹²³ *Maung Po Taik Vs Ma Hnin Zan*, S.J 235.

¹²⁴ 1966 C.C 1021.

¹²⁵ 1987, B.L.R 108.

¹²⁶ *Ram Lal Vs Tula Ram*, 4 All 97.

¹²⁷ *Maung Kyaw Win Vs The Union of Myanmar*, 1976 B.L.R C.C 9.

¹²⁸ *Ma Saw Nwe Vs U Aye Soe*, AIR 1939 Ran 223.

¹²⁹ *Dr Tha Mya Vs Daw Khin Pu*, AIR 1941 Ran 81.

¹³⁰ *Maung San Vs Ma Thet Nu*, 10 BLR166.

¹³¹ *Ma Saw Nwe Vs U Aung Soe*, AIR 1939 Ran 223.

¹³² *Maung Hmu Taw Vs Ma Phwa*, SJ 258(259) P.C.

In Myanmar Customary Law, the general rule is that the wife is entitled by way of maintenance to an amount which is one-third of the income acquired by the exertions of her monogamous husband. But when the husband takes a second wife the amount of the maintenance to which the first wife is one-sixth of his income.¹³³

Where a wife has maintained herself she cannot sue her husband for maintenance for the period during which she has maintained herself.¹³⁴

Wife's suit for arrears of maintenance for the period before the filing of the suit is not sustainable.¹³⁵

Under section 488 of the Code of Criminal Procedure, Myanmar Buddhist wife can always claim maintenance from her husband, when she is justified in living apart from her husband, whether she be rich or poor.¹³⁶

But under section 488 sub-section (4), no wife shall be entitled to receive an allowance from her husband,

- (1) if she is living in adultery, or
- (2) if without any sufficient reason, she refuses to live with her husband, or
- (3) if they are living separately by mutual consent.¹³⁷

If a wife applies for maintenance and the husband offers to live with her again, the Court must inquire into the reasonableness of her refusal – if she refuses to return to the husband-before it may dismiss her application.¹³⁸

The refusal of a wife to live with her husband does not forfeit her of the right to maintenance if she has reasonable grounds for her refusal, e.g. when the husband takes a second wife without her consent and expects the two wives to live under the same roof.¹³⁹

To successfully defend himself against an application for maintenance on the ground that the wife has been 'living in adultery' the husband must prove 'a continuous course of guilty conduct and not isolated.'¹⁴⁰

Where, however, a husband puts on the yellow robes for four years, not merely to be a Dunlaba Rohan or priest for a brief period, but with the intent the intention to 'renounce

¹³³ Dr Tha Mya Vs Daw Khin Pu, AIR 1941 Ran 81.

¹³⁴ Maung Hmu Taw Vs Ma Phwa, SJ 258 P.C.

¹³⁵ Ma Saw Nwe Vs U Aung Soe, 1939 Ran 527.

¹³⁶ Maung Son Vs Ma Thet Nu, 10 B.L.R 166.

¹³⁷ Section 488 (4) of the Criminal Procedure Code, 1898.

¹³⁸ U Khin Yone Vs Ma Than, 1954 B.L.R 365 H.C.

¹³⁹ Ma Khin U Vs Po Saw, 4 L.B.R 340 F.B.

¹⁴⁰ Maung Tin Hla Vs Ma Ngwe Sein, 1954 B.L.R 24, H.C.

the world' it is ruled that there is a severance of the marriage tie and no proceedings for maintenance may be taken, even on his return to the lay life.¹⁴¹

If the husband neglects or refuses to maintain his wife, he is liable to pay allowance that not exceeding fifty thousands kyats at such monthly.¹⁴²

4.4 Restitution of Conjugal Rights

In the days of the Recorder's Court it was held that as one of a Myanmar Buddhist couple might divorce the order on mere caprice, so no suit for restitution of conjugal rights would lie amongst Myanmar Buddhist. The Special Court however dissented from that view and came to the conclusion that as there was no right of divorce on mere caprice in a Myanmar Buddhist husband or wife, so a suit between a Myanmar Buddhist married couple for restitution of conjugal rights would lie.¹⁴³

The Judicial Commissioner's Court also held that there is nothing in Myanmar Buddhist Law either to support a divorce at will of one party, on surrender of the joint property and payment of joint debts, in the absence of fault in the other party which is inconsistent with the observance of the conjugal duties in a subsisting marriage, or to bar a suit for restitution of conjugal rights.¹⁴⁴

The Rangoon High Court has set the controversy at rest by holding that a suit for restitution of conjugal rights lies under the Myanmar Buddhist Law.¹⁴⁵

A suit must be founded on a subsisting marriage, and either the wife, or the husband, may file it. The plaintiff must prove absence of fault on his or her part, and that the defendant has withdrawn from cohabitation without justifiable cause."¹⁴⁶

Husband, after torture his wife, deserts his wife for one year and seven months. And then the husband sues his wife for restitution of conjugal rights. If that case, the wife win decided that the wife is reject the judge decide her to win this case.¹⁴⁷

Ill-treatment or desertion by the plaintiff is a good defense to the suit. The minority of the wife is not a good defense, however, for marriage has emancipated her from parental control and given her the status of wife.¹⁴⁸

¹⁴¹ Maung Nyunt Tin Vs Ma Pu 1954 BLR 76 H.C.

¹⁴² Under Section 488 (1) of the Criminal Procedure Code, 2016.

¹⁴³ Ma Nwe Vs. Mi Su Ma, S.J, 391.

¹⁴⁴ Nga Chit Dat Vs. Mi Khin Pu, 11 U.B.R (07-09) mar.1.

¹⁴⁵ Ma Thein New Vs. Maung Kha, 7 Ran 451.

¹⁴⁶ Maung Sein Vs. Khin The t Gyi, 2 U.B.R (1904-06),5.

¹⁴⁷ Maung Sein Vs. Khin The t Gyi, 2 U.B.R (1904-06),5.

¹⁴⁸ Maung Myat Tha Vs. Ma Thon, 2 U.B.R (1892-96)200.

Husband and wife living together for 11 years and they have got three children. Husband married next wife his wife lives his youngest sister and then husband sues the wife to live again. Therefore husband cannot take her that the husband was fault.¹⁴⁹

A wife may not sue for divorce on the ground that her husband has committed adultery, but his constitutes a good defense against his suit for restitution of conjugal rights.¹⁵⁰

It is not sound cause that the wife deserts from her husband to lack of job and money.¹⁵¹

In San Kyaw's case, U San Kyaw excommunicated with his wife Daw Sein Sein for years and he cannot support his wife anymore. Therefore, it is not rejected without cause, to live U San Kyaw, who is fail in the responsibilities of husband. In Myanmar Customary Law, it is to show that proof of suits, for the accused person. In him case, U San Kyaw deserts his wife for a long time. Therefore Yangon Region Court is not false in rejecting that appellate.

A husband who is under a duty to maintain his wife may not evade the duty by the way of a decree for restitution. If he wins such a decree he must abide by its conditions sincerely. Where a wife had left her husband because he brought a "lesser wife" to the house, and he sued for restitution and received a decree on condition that he provided a separate residence for the wife, the High Court held that an order for maintenance could stand if he failed to comply with the condition.¹⁵²

Although the husband who receives a decree for restitution, the order of maintenance decided by the Criminal Court, is not automatically fade.¹⁵³

In Khon Maung Ngwe Case, the husband left the house by taking another wife. And then, there is appeared the case that the wife sued the husband for restitution.¹⁵⁴

Where the Court passed a decree against a wife for restitution of conjugal in the case of wife or husband may sue restitution of conjugal right, the judgment-debtor had been brought an action under Order 21, Rule 32(1) and (3) of Civil Procedure Code.¹⁵⁵

And if the Court passed a decree against a husband for restitution of conjugal rights, the Court may order that the judgment-debtor shall make to the decree-holder for periodical payments of money.¹⁵⁶

¹⁴⁹ Maung Kywe Vs Ma Kyin (8, Ran, 411).

¹⁵⁰ Ma Thein Nwe Vs Maung Kha, 7 Ran 451.

¹⁵¹ Ma Htar Vs Maung Aye Mg, AIR 1930 Ran 111.

¹⁵² U San Kyaw Vs Daw Sein Sein, 1981 B.L.R. 28.

¹⁵³ Maung Po Kwe Vs Ma Pwa Shein, 1939 R.L.R. 741.

¹⁵⁴ Ma Aye Yin Phyu Vs Maung Nyun Tun, 1970 B.L.R. 74.

¹⁵⁵ Khon Maung Ngwe Vs Daw Nan Saw, 1991, Civil first Appeal No.168 (Mandalay).

¹⁵⁶ Ba Kyaing, U, Myanmar Customary Law, Ye Ye Lwin Sar Pay, 1st edition, 2007, p-57.

5. Conclusion

By studying the above mentioned fact, according to Myanmar Law Act 13 (1), it has to decide only with the respective law. It is right that it is needed to decide with respective customary law. Only deciding with Religious Custom, the damages will be limited. Myanmar Customary Law appears by reforming and applying Myanmar's customary arbitrament in accordance with the era.

According to Myanmar Customary Law, although there is specified age for girls to marry, there is none for boys. As girl's age is specified, boy's age should also be specified.

In accordance with Myanmar Customary Law, as Myanmar Buddhists do not need to hold celebrations for marriage, it is difficult to resolve the marriage problems. Therefore, Myanmar Buddhists should be registered and legally married with witness before Judge in court.

In former times, as Myanmar Buddhist men were allowed to marry many wives, women had to face polygamous problems such as legally married wife and concubine, and their children had to encounter losing face in their society. As Monogamy Law is enacted now, (1) They can build a great marriage having a good faith on one another, (2) Women can be protected from becoming illegal wives, and (3) It will also be able to protect from marriage crimes.

In 1954, Buddhist Women Special Marriage and Succession Act is enacted. As that law is enacted, Myanmar Buddhists who get married with male foreigners who are not Myanmar Buddhists will get one-sided arbitrament in inheritance and protection of children. That 1954 Law specially protected Buddhist women. Up to now, as there are marriages with foreigners, the law of 1954 is still needed and useful. Nowadays, as the 1954 Law is not modernized and appropriate, Buddhist Women Special Marriage Law is newly enacted in 2015.

Though the fact that Monogamy Law and 2015 Buddhist Women Special Marriage Law is newly enacted is correct, as the rules relating to that laws are not enacted it can be said that the law is not perfect yet.

If a man marries with a woman, that man is responsible for perfection of woman and children not only physically but also psychologically. The man who breaks the promise should be punished emphatically according to the law. He should also pay allowance. In giving allowance, the fact that a woman cannot get her allowance if she has a job is unfair and allowance of 50000 Kyats is not sufficient today. Hence, the allowance should be increased.

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THE IMPACT OF AUTOCRATIC AND DEMOCRATIC LEADERSHIP STYLE ON JOB SATISFACTION IN PRIVATE BANKS

YAN NAING TUNⁱ

Abstract

This research investigates the impact of Autocratic and Democratic Leadership Style on Job Satisfaction in Private Banks (KBZ and AYA Bank). For this purpose a questionnaire was developed and validated. There were fifteen items in all. The items were based on five point scale (from strongly disagree to strongly agree). The data were collected from eightieth (80) staff of both KBZ and AYA Banks (55 of KBZ and 25 of AYA Bank). For statistical analysis Frequency distribution, Mean, Standard Deviation, ANOVA and Regression Analysis were used. It was found that Leadership style does not impact on job satisfaction.

Keywords: Autocratic, Democratic, Leadership, Bank, Job Satisfaction

1. Introduction

Today's banking industry sector is one of the growing economic sectors in Myanmar. Banking industry services loans, rent, insurance, foreign exchange and investment. The role of banking industry plays an important part in our country. So, banking industry sector needs to expand for the economic growth of the country. Banks are essential for any business within the country. It is impossible to keep abreast with other nations in business and economic sector without private banks.

The diversification of ownership of banking institutions has enabled private shareholding in public sector banks. The increasing presence of private sector domestic and foreign banks has led to an unprecedented increase in competition in the banking sector, offering tremendous opportunities of business expansion and diversification nationally as well as globally along with threats from the emergence of new players in the industry. Acute competition with the advent of new generation private sector banks and foreign banks bringing in latest technology has resulted in putting greater focus on product innovation backed by IT advancement and thrust on customization of products. The banks are on hiring spree recruiting younger persons with good educational background and IT skills to manage their expansion plans. Effective

ⁱ Tutor, Department of Commerce, Co-operative University, Thanlyin

leadership is viewed as a key factor in attracting, motivating, and maintaining employees in organizations undergoing change and transformation. (Sandhu and Kaur; Cropanzano, Rupp & Byrne 2003)

In today's competitive world, Banks play an important role in achieving the objective of economic development through financing every sector of the economy and help for the smooth operation. "A commercial institution that keeps money in accounts for individuals or organizations, makes loans, exchanges currencies, provides credit to businesses, and offers other financial services". (Macesich, 2000)

Nowadays, the government is strongly encouraged the private banks to do it. There have been many private banks in Myanmar. There are four private banks in Thanlyin. Among these private banks, two private banks are selected for this study. These are Kanbawza (KBZ) and Ayeyarwady (AYA) banks. Kanbawza (KBZ) and Ayeyarwad (AYA) banks have to competent each other banks than to get the most successful and then these have branches bank more than other bank in myanmar.

Leadership is a social influence process in which the leader seeks the voluntary participation of subordinates in an effort to reach organization goals, a process whereby one person exerts social influence over other members of the group, a process of influencing the activities of an individuals in an effort towards goal achievement in given situations, and a relational concept involving both the influencing agent and the person being influenced.

"A leader places the people around him or her in a position that sets them up for success. This is a difficult task because a leader must have an in-depth understanding of each individual, such as understanding their career goals and knowing what motivates them. By being committed to helping each person achieve their own personal goals, the leader sets the organization up for greatness. Leaders are [also] good listeners. They listen to verbal and nonverbal cues to understand [what is] occurring in the organization. This allows you to address problems before they become big issues." – Andor Kovacs

Behavioral theories focus on how leaders behave. For instance, do leaders dictate what needs to be done and expect cooperation? Or do they involve their teams in decision making to encourage acceptance and support? In the 1930s, Kurt Lewin developed a framework based on a leader's behavior. He argued that there are three types of leaders:

1) Autocratic leaders make decisions without consulting their teams. This style of leadership is considered appropriate when decisions need to be made quickly, when there's no need for input, and when team agreement isn't necessary for a successful outcome.

2) Democratic leaders allow the team to provide input before making a decision, although the degree of input can vary from leader to leader. This style is important when team agreement matters, but it can be difficult to manage when there are lots of different perspectives and ideas.

3) Laissez-faire leaders don't interfere; they allow people within the team to make many of the decisions. This works well when the team is highly capable, is motivated, and doesn't need close supervision. However, this behavior can arise because the leader is lazy or distracted and this is where this style of leadership can fail.

Organization is an entity which is set up for a purpose. Organization can be defined as the human co-ordination of a number of persons or individuals in the service of mutual help for the achievement of common goals through the division of labor and functions, and through hierarchy of authority.

1.2 Objectives of the Study

The objectives of this research that is to be carried out are as follows:

- To identify the leadership style in selected private banks.
- To measure the job satisfaction of employees in selected private banks.
- To investigate the relationship between style of leadership and perceived job satisfaction.

2. Literature Review

Smith (1998) asserts that if the task is highly structured and the leader has good relationship with the employees, effectiveness will be high on the part of the employees. His findings further revealed that democratic leaders take great care to involve all members of the team in discussion, and can work with a small but highly motivated team. Clearly, how leaders behave affects their performance. Researchers have realized, though, that many of these leadership behaviors are appropriate at different times. The best leaders are those who can use many different behavioral styles, and choose the right style for each situation. The ability of leaders consist one of the important role to improve the organizational performance. The two categories actually distinguished two different style of leadership namely autocratic and democratic. Lewin et al (1939) concluded that democratic style of leadership is the most effective, but Smith and Peterson (1988) pointed that the effectiveness of group leaders is dependent on the criterion which was being used to assess leadership. Thus, if leadership is assessed in terms of productivity, then autocratic style is effective. Absence of leadership

style brings about lack of direction from the leader resulting in low morale and lack of interest in the work. Hayers (2000) found that workers who fell under pressure reported autocratic supervision on the part of their leaders. The leaders rarely allowed them to participate in the decision making. It was also reported that workers who were under stress also reported harsh supervision and control on the part of their leaders. According to (Parish, Thomas S 1999) Leadership is high demand today, particularly since few understand exactly what's required in order to achieve it. This brief note will simply spell out what is necessary in order to attain effective leadership, and possibly dispel any incorrect ideas regarding how to achieve it, at least initially. Leadership is a process of social influence which maximizes the efforts of others toward the achievement of a greater good. The key elements of this definition are Leadership stems from social influence, not authority or power, Leadership requires others, and that implies they don't need to be "direct reports", No mention of personality traits, attributes, or even a title; there are many styles, many paths to effective leadership, It includes a greater good, not influence with no intended outcome. Leadership is a mindset in action. Therefore, don't wait for the title. Leadership isn't something that anyone can give you — you have to earn it and claim it for yourself.—(Dr. Travis Bradberry) Leadership style relates to a specific behavior and will be influenced by the leaders' aims and personality as well as their relationship and interactions with the teams. The effective leadership style certainly improves organizational productivity and employee motivation. Different leaders behave different ways depending on their individual differences as well as their employee needs and organizational situation. There are many factors that may enhance job satisfaction of employees like working conditions, work itself, supervision, policy and administration, advancement, compensation, interpersonal relationships, recognition and empowerment (Castillo and Cano, 2004) but leadership has a major relationship to enhance employees' job satisfaction (Wexley and Yukl, 1984). The quality of leader-employee relationship has a significant relatedness with employees' job satisfaction (DeCremer, 2003) and employees feel satisfied and comfortable with leaders who are supportive (Yukl, 1971). Employees feel stress when they have to work with a leader who is unsupportive and whose behavior is negative (Wilkinson & Wagner, 1993).

3. Research Method

This portion consists of method used for the research that is research population, sampling technique and research variables.

3.1 Research Population

The population of the study was the male and female employees of private banks both KBZ and AYA Bank. It was decided to include population of different ages and education.

3.2 Sampling Technique

Quantitative research method is used in this study. Sample random techniques helped to select representative units from which data could be gathered. The participants of 80 employees (55 from KBZ Bank and 25 from AYA Bank) in Thanlyin branch of Bank selected staff comprising of both male and female by using appropriate questionnaires because of the limited time and financial constraints to make the analysis on the whole private bank in Thanlyin. The data collected from KBZ and AYA Bank in Thanlyin. The participants of 5 employees are non-respondent from KBZ Bank.

3.3 Research Variables

Leadership styles (Autocratic and Democratic) are the independent variables while the dependent variable is job satisfaction.

4. Data Collection

This research used the primary and secondary data. The instrument used for the collection of the primary data was questionnaire containing questions to measure the effect of autocratic or democratic leadership on workers. Secondary data constituted relevant literature such as journals, reports internet and related books which contributed to the development of study.

4.1 Statistical Analysis

1. Frequency distribution
2. Mean
3. Standard deviation
4. ANOVA
5. Regression Analysis

4.2 Data Analysis

The study is conducted to investigate “The impact of autocratic and democratic leadership style on job satisfaction” with a sample of 80 employees both male and female of KBZ and

AYA Bank staffs. The data collected through questionnaire and the collected data is analyzed through computer software SPSS version 20.

4.3 Demographic information of respondents

Variables	Frequency	Percent
Branch of Bank		
KBZ	55	68.8
AYA	25	31.3
Gender		
Male	25	31.3
Female	55	68.8
Age		
18-29	69	86.3
30-40	10	12.5
41-50	1	1.3
51-60	-	-
Level of Education		
Non-Graduate	8	10
Bachelor	69	86.3
Master	3	3.8
Experience		
Under 1 year	18	22.5
1-3 years	38	47.5
4-6 years	19	23.8
above 6 years	5	6.3

The demographic information of the 80 respondents (55 from KBZ Bank and 25 from AYA Bank) in Thanlyin branch of Bank selected staff comprising 25 of Male and 55 of Female. They are classified into five age groups. The subject group aged 18-29 years accounted for 86.3%, 30-40 years accounted for 12.5%, 41-50 years accounted for 1.3% and 51-60 years haven't in the respondent staffs. In the level of education, 10% of staff were non-graduate, 86.3% of staff have bachelor and 3.8% of staff have master were both KBZ and AYA Bank. Further in the experience, 22.5% of staff have under 1 year, 47.5% of staff were up to 1-3 years, 23.8% of staff were 4-6 years and 6.3% of staff have above 6 years in respondents.

4.4 Distribution of Item Means of Leadership Style Factor

Table 1. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
1	Your leader considers his/her decision as final.	80	2.75	.666

Table 1 shows that for total 80 employees the mean score is 2.75 (SD= .666) that indicates that in democratic leader does not consider his/her decision as a final.

Table 2. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
2	Employees are threatened or punished if they do wrong or mistakes have done by them in order to achieve their goals.	80	2.74	.838

Table 2 shows that for total 80 employees the mean score is 2.74 (SD= .838). It shows that in autocratic leadership style employees are always threatened or punished if they make mistakes because the organization wants to achieve its goals.

Table 3. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
3	Leader considers the suggestions of the employees while making a decision.	80	2.05	.571

Table 3 shows that for total 80 employees the mean score is 2.05 (SD= .571). It shows that for decision of the organization, autocratic leader does not consider the suggestions of the employees.

Table 4. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
4	Your leader likes the power that he/she holds over his/her subordinates.	80	3.58	.965

Table 4 shows that for total 80 employees the mean score is 3.58 (SD= .965). It shows that autocratic leader like the powers that he/she holds over their employees.

Table 5. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
5	Your leader thinks that you know how to use your creativity and ingenuity to solve organization problems.	80	3.28	.616

Table 5 shows that for total 80 employees the mean score is 3.28 (SD= .616). It shows that democratic leader know how the employees use their creativity and ingenuity to solve organizational problems as the prosperity of the organization means the prosperity of the employees.

Table 6. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
6	Your leader allows you to determine what needs to be done and how to do it in your assignment.	80	3.71	.620

Table 6 shows that for total 80 employees the mean score is 3.71 (SD= .620). It shows that whenever assignments are given to employees, democratic leader leaves it to the employees to suggest by themselves what they would like to do and how they feel easy for its completion.

Table 7. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
7	Whenever you make a mistake your leader politely tell you and advise you not to do it again.	80	3.94	.752

Table 7 shows that for total 80 employees the mean score is 3.94 (SD= .752). It shows that employees are of the view that democratic leaders behaves politely and advice their employees for not doing mistakes again and they should be careful.

Table 8. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
8	Whenever there is difference in expectation your leader works with you to resolve it.	80	4.03	.656

Table 8 shows that for total 80 employees the mean score is 4.03 (SD= .656). It shows that democratic leadership environment, leader always tries to solve any kind of differences in expectation.

Table 9. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
9	Whenever something goes wrong you tell your leader fearlessly.	80	3.93	.708

Table 9 shows that for total 80 employees the mean score is 3.93 (SD= .708). It shows that democratic leadership style employees have courage to share their mistakes with their leaders so that they can have better opinion from their leaders.

Table 10. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
10	Employees always vote whenever a major decision has to be made.	80	3.04	1.119

Table 10 shows that for total 80 employees the mean score is 3.04 (SD= 1.119). It shows that voting is also done before taking any major decision for the organization.

Overall (Leadership Style)

Table 11. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
Total	Overall (Leadership Style)	80	3.30	0.245

Total shows that for total 80 employees the overall mean score is 3.30 (SD= 0.245) indicating that employees facing generally a democratic sort of leadership from their leaders.

4.5 Distribution of Item Means of Job Satisfaction Factor

Table 12. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
1	Do you think about the betterment of your organization and share your ideas?	80	3.85	.713

Table 12 shows that for total 80 employees the mean score is 3.85 (SD= .713). It shows that democratic leadership environment employees think about the betterment of their organization and for its betterment share their ideas with their leaders.

Table 13. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
2	Do you like to go to your job?	80	3.62	.769

Table 13 shows that for total 80 employees the mean score is 3.62 (SD= .769). It shows that employees are satisfied in democratic leadership style and they like to go to their jobs.

Table 14. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
3	Do you like to do extra time to your job so that your assignments can be finished early/ in time?	80	2.62	.986

Table 14 shows that for total 80 employees the mean score is 2.62 (SD= .986). It shows that democratic leadership style employees work freely and with peace of mind, they don't like to do extra time to your job.

Table 15. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
4	Do you want to change your job and have better than this job?	80	4.04	.625

Table 15 shows that for total 80 employees the mean score is 4.04 (SD= .625). It shows that while working with autocratic leader, employees are not satisfied and they want to change their jobs for better jobs.

Table 16. Distribution Mean and Std.deviation

No.	Variable	N	Mean	Std. Deviation
5	Do you think that you will never change this job?	80	2.31	1.014

Table 16 shows that for total 80 employees the mean score is 2.31 (SD= 1.014). It shows that as employees are satisfied with their democratic leader and working environment, they do not like to change their jobs.

Overall (Job Satisfaction)

Table 17. Distribution Mean and Std.deviation

No	Variable	N	Mean	Std. Deviation
Total	Overall (Job Satisfaction)	80	3.29	0.340

Total shows that for total 80 employees the overall mean score is 3.29 (SD= 0.334) indicating that the employees satisfied their job.

4.6 Relationship between Leadership Style and Job Satisfaction

Relationship between Leadership Style and Job Satisfaction were analyzed using liner regression model. However, it was found that there is no significant relationship between these two variables. Thus, in the context of selected private bank in Thanlyin, the variation of employees' job satisfaction cannot be predicted by leadership style. This result was contracted with some previous research for example Nadeem Bhatti, Ghulam Maurza Maitlo, Naveed Shaikh, Muhammad Aamir Hsahmi and Faiz. M. Shaikh (2012) found that Leadership Style on Job Satisfaction there is positive significant relationship between these two variables.

5. Conclusion and Recommendations

The study was aimed to find the relationship between leadership style and job satisfaction among the bank staff comprising of both male and female from KBZ and AYA Bank. The main objective of the study was to find out the relationship between leadership style and job satisfaction. For this purpose, the questionnaire was developed; there were 15 variables in all. All questions were close ended. It was administered to 80 bank staff both male and female of

KBZ and AYA Bank. The study will help us to find out the impact of leadership style on the working and output of employees and their job satisfaction. Leadership style does not impact on job satisfaction. People like to work in free atmosphere where they can share and exchange their view. Employees tell their leaders fearlessly in case of anything wrong. This creates a sense of ownership among the employees that gives them satisfaction.

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Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.027 ^a	.001	-.012	.34166	1.490

a. Predictors: (Constant), leadership

b. Dependent Variable: Job Satisfaction

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.007	1	.007	.057	.811 ^b
	Residual	9.105	78	.117		
	Total	9.112	79			

a. Dependent Variable: Job Satisfaction

b. Predictors: (Constant), leadership

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.414	.520		6.569	.000
	leadership	-.038	.157	-.027	-.239	.811

a. Dependent Variable: Job Satisfaction

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.2676	3.3164	3.2900	.00920	80
Residual	-.69009	.90991	.00000	.33950	80
Std. Predicted Value	-2.439	2.868	.000	1.000	80
Std. Residual	-2.020	2.663	.000	.994	80

a. Dependent Variable: Job Satisfaction