

# MANAGING DIVERSITY IN SOUTH AFRICA: DYNAMICS, CHALLENGES AND PROSPECTS

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## ABSTRACT

The purpose of this exploratory research study was to investigate the challenges involved in managing diversity in administrative environments. Inadequate understanding of the concept and its importance poses a threat to organisational success and even survival. The quantitative method was used for data collection. A structured questionnaire was designed as a measuring instrument to collect data. The target population comprised employees, middle managers and top managers in the private sector as well as local government. A total of 409 respondents participated in the survey. Descriptive statistics were used in this research study. It was found that organisations at the forefront of their industries have failed to manage diversity amongst their employees. The findings indicate that the manner in which diversity management is approached, has a great impact on aspects such as developing the competencies of employees. If diversity is managed effectively, it will add essential value to organisations.

**Keywords:** Diversity management, dynamics, challenges, prospects

## INTRODUCTION

Managing diversity is a global business imperative and many organisations have included diversity management in their strategic objectives (De Anca, Vega, 2016:80). However, it is frequently unclear what “diversity management” entails, why it is included as an organisational objective, and how it is measured (Guillaume, Dawson, Priola, Sacramento, Woods & Higson, 2014:783). Managers and employees consider the frequently grandiose statements of corporate leaders with scepticism. Some of them avoid diversity management because of personal feelings of inadequacy and insecurity, whilst others are confused about what is expected of them (Kalinowski, Steele-Johnson, Peyton, Leas, Steinke & Bowling, 2013:1076). Discussions about increasing the focus on diversity fill them with contempt so that few are willing to rise to the challenge. The entire diversity issue is consequently treated with increasing apathy and cynicism. It might be overreacting to claim that diversity management is one of the most controversial but least implemented corporate objectives (O’Leary, Sandberg, 2016:1099). A proactive approach to diversity training in organisations should be to help both employees and employers to realise the organisation’s mission and its performance objectives. Diversity training has to recognise different skills and should incorporate training methods that promote self-discovery and hands-on experiential learning (Ehrke, Berthold & Steffens, 2014:193). However, the fact remains that, as a strategic objective, diversity often ranks low on managers’ lists of priorities.

This study is considered timely and relevant because little attention is being paid to the challenges encountered in managing diversity in South Africa. Since little research had been done in South Africa in this field, the researcher believed that the study's findings would substantiate greater attention to diversity management in the corporate world and valuable new knowledge would become available in the subject field. This study was the first of its kind in South Africa and will add value to the business sector. The objective of the study was to investigate factors relevant to managing diversity in administrative environments, both in the private and local government sectors.

### **MANAGING DIVERSITY**

Human (2005:1) writes that the reasons for corporate mismanagement of diversity are fivefold. These reasons include: managers not understanding what the diversity concept means, managers are not convinced that valuing diversity makes sound business sense, skills in managing diversity that are transferable to other contexts are rarely taught, diversity is seldom fully integrated into the strategic agenda and people management systems, and diversity is seldom performance-managed in the same way as other strategic matters. As organisations seek to make diversity management a mainstream business issue in order to gain a competitive advantage and comply with legal obligations, there is a growing demand for ways to evidence the derived business benefits. Labour market statistics show that the workforce in the twenty-first century is becoming more and more diverse in terms of racial and ethnic origin, gender, age, political and religious beliefs, people with disabilities, and different skills and attitudes (Tatli, Ozbilgin, Worman & Mulholland, 2005:2). One reality that is increasingly imposing itself on socio-politico-economic management as globalisation becomes dominant, is the need to manage diversity. The world's social composition is becoming reconfigured to such an extent that even nations that previously considered themselves homogeneous have become multi-ethnic or multi-racial (Kauzya, 2002:1). People commonly use the attributes of others to develop categories that can simplify their experience of the world. One consequence of this categorisation is people's perceptions of diversity. Diversity may be recognised as the attributes used to acknowledge differences between individuals. Researchers found in the 1970s that people with similar demographic backgrounds (age, gender and education) could have similar perceptions of work satisfaction and work environments. Over the past decade, demographic diversity has become one of the topics at the forefront of management and organisational research (Miller, Dastmalchian & Blyton, 2004:2). Diversity is not an independent factor; it stands in the centre of an organisation's employee development strategy. Diversity cannot be understood or coped with in the course of a one-day training event. It is a complex and multi-faceted subject, and every approach to addressing it must be similar in its extent. Strategic planning, assessment, longitudinal measurement, relation to other initiatives, policy and practice reviews, training and mentoring must all be used to create and maintain an effective diversity management programme. Diversity is an important business objective that has to be dealt with as such. It should not be treated as an awareness exercise or "the right thing to do". Organisations should operationalise their diversity-related strategies by understanding a broad definition of diversity, providing the infrastructure to build a diversity initiative, and carefully formulating a company-specific diversity objective to ensure their business success (Hyter, 2004:6). Human (2005:47) states that all effective organisations are contextually driven. Diversity is a context-derived characteristic, and as such it underpins both effective strategic planning and leadership

competence. Effective diversity management therefore requires of both individuals and organisations to be adaptable to different situations in order to meet stakeholder requirements. From an internal perspective, this means judging and managing individuals on the basis of clearly specified job and performance-related criteria in a business culture that rejects irrelevant communication patterns and behaviour. Such a business culture would make provision and create opportunities for individuals to express themselves as reasonably as possible. From an external perspective, however, this means working with a diverse group of stakeholders to ensure optimal organisational performance and synergy. The impact of diversity should therefore be viewed as an inclusive concept. In dealing with diversity, one has to focus on the mind-set and corporate culture as well as the different perspectives human resources introduce into an organisation because of their ethnicity, social background, professional values, styles, disabilities or other differences (Clements & Jones, 2002:13).

### **DIVERSITY DYNAMICS**

Diversity may be considered a matrix of dynamic and interrelated identity groups that operate in terms of multiple dimensions, including primary and secondary personal characteristics and organisational contexts. These dimensions are continuously interacting as they unite to represent a person in his or her entirety. Primary dimensions – those that most profoundly define us – include gender, race and national origin, age, religion and spirituality, sexual orientation, and disabilities. Secondary dimensions – often just as significant as the primary dimensions but more likely to change – include military experience, parental status, educational background, social position/economic status, and geographic origin and location. Organisational contexts – which are specifically related to the workplace – include work content, formal and informal status, division/department, work location, and union affiliation (Canas & Sondak, 2008:1). Although people share important dimensions of humanness with all members of the species, there are biological and environmental differences that separate and distinguish people from one another. The primary dimensions of diversity are interlocking segments of a sphere that represents the core of an individual's identity. Secondary dimensions are more mutable, less visible to others around us, and more variable. Secondary dimensions are more dynamic, their power is less constant and more individualised than the primary or core dimensions. In effect, the primary and secondary dimensions give definition to people's lives by contributing to a synergistic integrated whole – the diverse person (Pretorius, 2003:24). Rowe and Gardenswartz (Canas & Sondak, 2008:8) adds two additional dimensions personality and organisational membership.

### **CHALLENGES IN MANAGING DIVERSITY**

Since the 1990's, diversity and the added complexities it brought to the workplace have become a fact of life in South Africa (De Beer, 2011:2). The realisation has dawned that difference in the workplace leads to either crises or opportunities. Crises occur when differences cause conflict and block synergy, whereas opportunity abounds when differences are dealt with constructively to create synergy (Pretorius, 2003:32). The case for workplace diversity as a business imperative is increasingly gaining recognition among leaders in the business world. Diversity programmes help to ensure the creation, management, valuing and leveraging of a diverse workforce to promote organisational effectiveness and sustained competitiveness (Lockwood, 2005:1). Managing diversity is not a short-term strategy to correct imbalances in the workplace. Managing diversity is a long-term process that demands top management identification and commitment to

introduce mechanisms that would access the potential of all employee (Human, 2005:48). Organisations often encounter significant barriers in trying to move forward in managing diversity. The following are barriers that may obstruct the implementation of diversity programmes; inaccurate stereotypes and prejudice, ethnocentrism, poor career planning, unsupportive and hostile working environment, lack of political savvy, balancing career and family, reverse discrimination, diversity as an organisational priority, performance appraisals and reward systems, resistance to change. Managers have to overcome these challenges by consulting and managing change among groups who believe they are being threatened (Tjale, 2005:43).

### **PROSPECTS IN MANAGING DIVERSITY**

Understanding diversity management is very important for both employees and managers in an administrative environment. (Steyn, 2011:00). Although very few organisations are committed to managing diversity, doing so has many benefits. Diversity should be regarded as a progressive process or initiative with no specific end in mind (De Beer, 2011:169). Management should understand the dynamics of cross-cultural and inclusion-related conflicts, tensions, misunderstandings or opportunities and should be committed to continuous learning and improving the organisation's diversity inclusion and cultural competence (Ngambi, 2011:765). If management adhered to the organisation's strong and positive core values, productivity and employee morale would surely rise (Sue, 2001:101). Specific, measurable, and realistic objectives should be based on business needs and selected key areas where sound diversity management can move the organisation forward (Hyde, 2008:20). Leaders should be encouraged to assess their behaviour periodically, and modify their management and leadership practices to ascertain whether they are acting appropriately in the midst of a diverse workforce (Ngambi, 2011:764). The diversity training process should stimulate significant changes in the organisation and thus affect the organisation's culture positive (Buckley & Caple, 2009:124). Management should discuss the specific behaviours they want to encourage in order to foster a climate that is supportive of diversity (Hackett, 2007:119). The continuous process of change allows management and employees to utilise their skills and abilities to achieve their full potential in pursuing diversity (Cox, 2001:129).

### **RESEARCH METHODOLOGY**

A quantitative research design was used to identify how employees perceived diversity management in their places of work. Exploratory research involving descriptive statistics was used in this study. A self-structured questionnaire was developed to ascertain potential problems related to diversity management in the South African private sector and metropolitan municipalities. The questionnaire consisted of closed questions. Questions were based on a five-point Likert scale, with the variations Strongly agree, Agree, Not sure, Disagree, Strongly disagree. A covering letter accompanied the questionnaire, explaining the need for and the purpose of the research. The target population comprised three unquantifiable groups that represented employees, middle managers and top managers in both the private sector and in metropolitan municipalities (local authorities) in South Africa. In this research the private sector included all companies, organisations and institutions whose primary goal was to produce goods or services to be sold to the general public at an economically significant price (Grobelaar 2006). A metropolitan municipality (the public sector) in South Africa renders all the functions of local government to a city or metropolis. South Africa has

eight such metropolitan municipalities: Buffalo City, City of Cape Town, City of Johannesburg, City of Tshwane, Ekurhuleni, eThekweni, Mangaung and Nelson Mandela Bay. Purposive sampling was used to collect data. The questionnaire was distributed via organisation's intranet. A total of 409 completed questionnaires were received. Participation in the survey was voluntary and the respondents were assured of the confidentiality and anonymity of their responses. Descriptive and inferential statistics were used to analyse the data. The data were validated by statistical software and descriptive statistics, and Chronbach's alpha was used to test for internal consistency. Pearson's chi-square test was used to test for associations between two categorical variables. The probability value (p-value) measured statistical significance which automatically incorporated the chi-square values. The results were considered significant if the p-value was below 0.05 as this value is acceptable at a 95% confidence interval ( $p < 0.05$ ).

## RESULTS

The findings of this study are discussed against the background from the literature and information gathered in the course of the empirical investigation. Pertinent questions from the questionnaire are repeated. It is significant in that 60% of the respondents indicated that their organisations did not offer training in diversity management. Another significant 70% of the respondents had never participated in diversity management training.

It is evident from Table 1 that a significant 94,35% of the respondents understood the meaning and concept of diversity management much better if their organisations had offered a diversity training programme ( $p\text{-value}=0,004$ ). These results confirm the importance of attending diversity management training.

**Table 1**

**Diversity training versus understanding of diversity management**

Variable		Concept Yes	Concept No	Total
Programme	Frequency	117,00	7,00	124,00
Yes	Percentage	94,35	5,65	100,00
Programme	Frequency	155,00	31,00	186,00
No	Percentage	83,33	16,67	100,00
<b>Total</b>		<b>272,00</b>	<b>38,00</b>	<b>310,00</b>
		<b>87,74</b>	<b>12,26</b>	<b>100,00</b>

Results in Table 2 indicate whether managers understood the different dimensions of diversity. A total of 122 (39,35%) respondents selected "Agree" and 105 (33,87%) respondents selected "Not sure". It is significant that there is not much difference between the percentages for "Agree" and "Not sure". Only 45 respondents (14,52%) chose "Strongly agree". It is therefore evident from the low percentages that the respondents did not believe strongly or positively that their managers understood the dimensions of diversity.

**Table 2**  
**Dimensions of diversity**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly agree	45	14,52
Agree	122	39,35
Not sure	105	33,87
Disagree	26	8,39
Strongly disagree	12	3,87
<b>Total</b>	<b>310</b>	<b>100,00</b>

The results in Table 3 show that 189 (60,97%) respondents (n=310) “Agreed” that valuing diversity made sound business sense. Another 85 respondents (27,42%) said they “Strongly agreed” with the statement. This is a clear indication that the majority of 88,39% of these respondents believed that valuing diversity made sound business sense and should be central to an organisation’s employee development strategies.

**Table 3**  
**Diversity training makes business sense**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Cumulative frequency</b>	<b>Cumulative percentage</b>
Strongly agree	85	27,42	85	27,42
Agree	189	60,97	274	88,39
Not sure	33	10,65	307	99,04
Disagree	2	0,65	309	99,69
Strongly disagree	1	0,32	310	100,00
<b>Total</b>	<b>310</b>	<b>100,00</b>	<b>310</b>	<b>100</b>

It is evident from the results in Table 4 that respondents in the private sector (47,59%) and those in local government (52,41%) “Agreed” that diversity is not managed in the same way as other strategic dimensions in their organisations (p-value=0,023).

**Table 4**  
**Private sector versus local government, and diversity management compared to strategic management**

<b>Variable</b>		<b>Private sector</b>	<b>Local government</b>	<b>Total</b>
Strongly agree	Frequency	20,00	34,00	54,00
	Percentage	37,04	62,96	100,00
Agree	Frequency	89,00	98,00	187,00
	Percentage	47,59	52,41	100,00
Not sure	Frequency	22,00	30,00	52,00
	Percentage	42,31	57,69	100,00
Disagree	Frequency	13,00	3,00	16,00
	Percentage	82,25	18,75	100,00
Strongly disagree	Frequency	1,00	0,00	1,00
	Percentage	100,00	0,00	100,00
<b>Total</b>		<b>145,00</b>	<b>165,00</b>	<b>310,00</b>
		<b>46,77</b>	<b>53,23</b>	<b>100,00</b>

The respondents had to identify barriers and challenges to diversity management in their organisations. The results in Table 5 indicate that a significant number (30,14%) of the respondents believed that other employees’ cultural rules and norms were deemed superior or more acceptable than those of another culture. Another response (22,20%) respondents indicated that there were insufficient opportunities for some employees to complete assignments that would qualify them for senior management positions. Another

response from respondents (21,12%) indicated that differences between employees were equated with weakness in their organisations. Variable 4 (that diverse employees were frequently excluded from social events, 10,29%) and Variable 5 (that female employees were more likely than male employees to balance a career and family responsibilities, 16,25%) did not receive as much recognition as Variables 1 to 3. However, it is evident from the results that organisations have to address a number of policies and procedures if their diversity management is aimed at making a full and positive impact on their business successes.

**Table 5**  
**Barriers and challenges to diversity management**

Variable	Frequency	Percentage	Cumulative frequency	Cumulative percentage
Differences between employees are equated with weaknesses	117	21,12	117	21,12
Different employees' cultural rules and norms are deemed superior or more acceptable than those of another culture	167	30,14	284	51,26
Insufficient opportunities for some employees to execute assignments that would qualify them for senior management positions	123	22,20	407	73,46
Some employees are frequently excluded from social events	57	10,29	464	83,75
Female employees are more likely to balance a career and family responsibilities than male employees	90	16,25	554	100
<b>Total</b>	<b>554</b>	<b>100</b>	<b>554</b>	<b>100,00</b>

Table 6 distinguish significant differences between respondents' and their opinion that their organisations cared about their wellbeing. A significant 59,09% of the respondents from the private sector "Agreed" that their organisations cared about their wellbeing compared to 81,82% from local government who "Disagreed". There is evidently a significant difference (p-value=0,001) between the opinion of respondents in the private sector and the opinion of respondents in local government that their organisations cared about their wellbeing.

**Table 6**  
**Private sector versus local government, and the wellbeing of employees**

Variable		Private sector	Local government	Total
Strongly agree	Frequency	31,00	8,00	39,00
	Percentage	79,49	20,51	100,00
Agree	Frequency	78,00	54,00	132,00
	Percentage	59,09	40,91	100,00
Not sure	Frequency	17,00	41,00	58,00
	Percentage	29,31	70,69	100,00
Disagree	Frequency	10,00	45,00	55,00
	Percentage	18,18	81,82	100,00
Strongly Disagree	Frequency	9,00	17,00	26,00
	Percentage	34,62	65,18	100,00
<b>Total</b>		<b>145,00</b>	<b>165,00</b>	<b>310,00</b>
		<b>46,77</b>	<b>53,23</b>	<b>100,00</b>

The aim of this question was to establish the mind-sets of organisations when it comes to diversity management. Note in Table 7 that the respondents were fairly equally distributed on the four mind-sets in diversity management (25,55%, 23,75%, 27,54%, and 23,15%). It is significant that each mind-set was selected by a very small percentage of respondents, and the results in Table 7 give cause for concern in terms of fully competent managers in administrative environments. Organisations should apply different mind-sets to give meaning to diversity management. The different cultural perspectives and work styles of its employees promote a widening and reframing of issues around the organisation's work and how it performs that work.

**Table 7**  
**Mind-sets as points of departure in diversity management**

Variable	Frequency	Percentage	Cumulative frequency	Cumulative percentage
Consider individual employees and encourage employees to appreciate and accommodate each other	128	25,55	128	25,55
Treat all employees fairly and value a diverse workforce	119	23,75	247	49,3
Provide opportunities for development and career advancement	138	27,54	385	76,84
Create a work culture that accommodates all employees	116	23,15	501	100,00
<b>Total</b>	<b>501</b>	<b>100</b>	<b>501</b>	<b>100,00</b>

Table 8 below reflects the results from a list of indicators which had an impact on diversity management. The results indicate that the respondents were relatively equally divided in terms of the indicators where diversity management had an impact, representing employee morale as 14,41%, job satisfaction 11,07%, employee productivity 14,64%, effectiveness of the organisation 12,18%, effective communication 13,52%, employee motivation 12,63%, management styles 11,58%, and client satisfaction 9,96%. Managing diversity today means considering individual people, and working out how to ensure that they are treated fairly, are valued and afforded opportunities for development and progression.

**Table 8**  
**Aspects influenced by diversity management**

Variable	Frequency	Percentage of responses	Percentage of cases
Employee morale	194	14,41	65,10
Job satisfaction	149	11,07	50,00
Employee productivity	197	14,64	66,11
Effectiveness of organisation	164	12,18	55,03
Effective communication	182	13,52	61,07
Employee motivation	170	12,63	57,05
Management styles	156	11,58	52,35
Customer satisfaction	134	9,96	44,97
<b>Total</b>	<b>1 346</b>	<b>100</b>	<b>451,68</b>



## **CONCLUSIONS**

This study concluded that managing diversity in both the private sector and metropolitan municipalities poses a challenge to South African managers that cannot be ignored. It is clear from the findings, that the majority of respondents did not understand the meaning of the diversity management concept. However, others who had attended diversity training programmes had a much clearer understanding of the concept. It is also evident from the findings that the respondents did not really believe that their managers understood the dimensions of diversity. Diversity should be viewed from a more positive and even proactive perspective. Organisations should consider introspectively how diversity aids their success and inclusively move their focus from merely management and control to opportunity and possibility. The major aim of understanding the diversity management concept should be to examine each individual and to accept all his/her dimensions of diversity as a point of departure. The diversity management concept and the different dimensions of diversity should be initiated to the managerial corps and employees, irrespective of their positions in organisations. Diversity management was not fully integrated into the strategic agenda and the people management systems of their organisations. Management has to performance-manage diversity similarly as other strategic matters: Although the value of diversity management in organisations is recognised, it is often viewed only in terms of legal compliance and human rights protection. However, diversity management is much more challenging. It has to create conditions that minimise its potential to form performance barriers but maximise its potential to enhance organisational performance. Valuing and managing diversity training represents a crucial first step in the direction of organisational change. Diversity management has far-reaching consequences since it affects the success of an organisation and has an impact on employees in the organisation. If diversity is managed effectively, it will not only add essential value to organisations, but ultimately also enhance human capital and industry in South Africa. Operating in the modern global economy means that employers have to learn how to deal most effectively with a plethora of differences. This compels managers to align their attitudes and work strategies concurrent with their human capital whose values, mannerisms and perspectives not only differ from their own, but also differ from one another. The new paradigm focuses on perceiving every individual in the organisation as important, worthy of respect, fair treatment, an opportunity to develop, and maximising contribution to organisational success.

## **RECOMMENDATIONS**

Diversity training programmes should be designed to emphasise open and honest discussion of diversity-related incidents and should focus on positive outcomes for the organisation as well as the employee, and should be available to all individuals in an organisation. Diversity management programmes should be comprehensive and measurable and should be aligned with the organisation's vision and objectives in order to create meaningful change. Recognition of diversity-related training requires a link between diversity-related objectives, performance and the reward system. Workshops on diversity management should be conducted for managers. These workshops could establish the accountability of managers and embed diversity planning into the organisation's strategies and business processes. Managers should begin with self-assessment when they relate to employees, how they manage their time, and where they place their energy and focus. If necessary, managers should modify their management and leadership styles to ensure that they are in line with diversity management policies of the organisation. Diversity training should surpass

a single event. Training sessions should be offered on a continuous basis as part of an ongoing process. Training in diversity management should be offered to new appointees, and regular follow-up training programmes should be available to existing employees. Ideas should be developed to move in a more proactive and positive direction. Organisations should strive to create a climate that encompasses diversity and inclusiveness to promote individual, group and organisational success. Mechanisms should be developed to capture, save and share gains in the diversity management process. Human core elements should be taken into account when diversity principles are implemented (respect, dignity, and the value of each individual). Diversity should be performance-managed in the same way as other strategic performance activities in the organisation.

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# THE EFFECTIVENESS OF LEARNING CRISIS RESPONSE STRATEGIE THROUGH MOVIES

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## ABSTRACT

Since media have both positive and negative influences on their audiences, the educator should identify the way to use media to benefit the audiences, especially the students. The current study used movies as the source for the students to learn and classify crisis response strategies. The participants were 47 students from a large university in Bangkok. The researcher assigned them to watch 4 movies and look for the circumstance that movie characters use crisis response strategies. The findings revealed that the students' understanding regarding crisis response strategies were continuously improved all along the process. There were the significant difference among their scores based on the first, second, and third movies, but there was no difference found between third and fourth movies. This implies watching only three movies was sufficient to develop students' understanding about crisis response strategies. Future studies should test this learning strategy in other classes or other lessons, and the researchers in this field should suggest ways to improve media content and improve media literacy skills in their students.

**Keyword**—learning, effectiveness, through movies

## INTRODUCTION

Recently, many researchers have identified the impact of media, including positive, negative, and also neutral outcomes. These outcomes could be physical behavior (Higgs & Woodward, 2009; Bevelander, Meiselman, Anschütz & Engels, 2013), personal belief (Popa & Gavrilu, 2015), and psychological traits (Krahé, Busching & Möller, 2012; Carpenter, 2012). These researchers worried about negative outcomes, especially in young children or adolescents. The current study sought to test the strategy of using media in the classroom to see if media containing crisis and violent content could improve students' knowledge.

Earlier previous research studies regarding media-based learning were likely to be about educational media, such as astronomy applications, chemistry interactive slide shows, and other web-based learning (Rieber, 1990; Kehoe, Stasko & Taylor, 2001). It could be true that educational media could entertain the students better than traditional lecture (Arunrangsiewed, 2014a), but if the instructors use the media that the students initially prefer, the students should find it more enjoyable. This enjoyment can results in students' class involvement, excitement, pride, and satisfaction (Ainley & Hidi, 2014; Dewaele & MacIntyre, 2014). Moreover, class performance could be predicted by enjoyment, self-regulated learning, and motivation (Mega, Ronconi, & De Beni, 2014). After the academic years, in-class enjoyment could also benefit students since it brings about their positive attitude toward learning. This attitude will help them develop their lifelong learning (Hagenauer & Hascher, 2014), which is also one of 21<sup>th</sup> century skills.

### Overview of Media Effect

Media have both direct and indirect effect on their audiences. Audiences may imitate the behaviors of fictional media characters or actual people they see in the news, for example, people mimic murdering strategies from films (Helfgott, 2015) or active fans wear the similar cloth as their favorite cartoon characters in a cosplay event (Lamerichs, 2013; Chen, 2007). Other impact of media on their audiences includes the belief in rape myth, gender stereotype (Garland, Branch, & Grimes, 2015; Gökçearslan, 2010; Kittredge,

2014; Sramova, 2014; Durham, 2012), body image, and stereotype regarding goodness and attractiveness (Bazzini, Curtin, Joslin, Regan & Martz, 2010; Avery-Natale, 2013). Several researchers have worried about how people with these beliefs may act improperly to other people near them (Garofalo, 2013; Arunrangsiwed & Pasomsat, 2016).

Psychological trait and behavioral script can also be influenced by media, and the script related to violent video games has been confirmed in research with experimental, cross-sectional, longitudinal design, and also meta-analysis (Anderson & Warburton, 2012). Video games are not only things that results in physical violence, there is also the physical aggressiveness of cartoon audiences (Chraif & Anitei, 2011; Kirsh, 2006). Narcissism is another trait influenced from the media and also influence behavior in media use (Arunrangsiwed, 2015a; Alloway, Runac, Qureshi & Kemp, 2014), for instance, self-marketing behaviors (Carpenter, 2012; Arunrangsiwed & Komolsevin, 2013; Mehdizadeh, 2010) and disembodiment (Kim et al., 2012). However, media do not always send a negative influence to their audiences. Media can be used to educate people both inside and outside classroom. Parents and teachers should help young children to learn from media by either suggestion or conducting a workshop (Ivrendi & Ozdemir, 2010; Hoffmann, 2014)

### **Media-Based Learning**

As mentioned earlier regarding educational media, general educational media require skillful application developers or media artists to create them and also requires an organization who would provide funding support. Although these applications are useful, teachers or university instructors should not wait for this type of media to be produced, they should use available sources in the meantime (Arunrangsiwed & Meenan, 2016). Fan scholars with media literacy knowledge have tried to use fan activities to enhance students' class performance, since fan activities allows the students to write, draw, and discuss topics that they are interested (Black, 2006; Black 2009). Bahoric and Swaggerty (2015) suggested teachers to use fan fiction writing activities as a method for students to rewrite the plot from original media and remove stereotype and minority identity discrimination content. Moreover, the links among fan activities, fan identity, and self-esteem have been explored in various fields in the area of fandom, for example, sport fans (Stavros, Meng, Westberg & Farrelly, 2014;), music fans (Herrmann, 2008; Larsson, 2013), fans of animated films (Chen, 2007) and also game players (Davies & Hemingway, 2014). This could imply that fan activities used in classroom may heighten students' self-esteem, which has a positive relationship with academic motivation (Supple, Su, Plunkett, Peterson, & Bush, 2013).

### **Crisis Response Strategies**

The present study sought to use movies that students were familiar with as the source to study crisis response strategies, which was first established by Coombs (2007). Students in communication arts or media arts majors should have an opportunity to learn this theory and learn to be aware of misleading media content, because they will grow up to be media producers, who will produce movies, publish news, or advertising for people to consume. One small mistake in media could bring about a negative impact in large number of audiences, especially young people, who have little real world experience (Aker, 1973; Sramova, 2014).

Previous studies regarding situational crisis communication theory and crisis response strategies (Coombs, 2007) were mostly done with textual analysis based on actual news, such as the suicide case at Foxconn (Xu & Li, 2013; Chan, 2013), SARS disease (Zhang & Benoit, 2009), school library burning (Arunrangsiwed, 2014b), face protection of a Taiwanese basketball player (Wen, Yu, & Benoit, 2009), mad cow disease discourses between the Taiwanese and United States governments (Wen, Yu, & Benoit, 2012). It was known that media content can educate their audiences, but none of previous papers identified crisis response strategies found in movies. None have provided the students with a workshop to learn and analyze

crisis response strategies from the media they prefer. The researcher of the current study also hopes that during workshops, students' media literacy skills would also be increased. Media literacy skills do not only benefit an individual personally, but for communication arts and media arts students, they would learn how to produce prosocial media, which will benefit the society as a whole in the future.

## METHODOLOGY

### Participants

The participants in this study were 47 undergraduate students enrolled in a communication arts or media arts major at a large university in Bangkok, Thailand. Twenty five of them were female, and 22 were male. They would receive 5 raw scores out of 100 every time they analyzed crisis response strategies in a movie.

### Procedure

After the research proposal was approved by ethics committee of Institute for Research and Development at Suan Sunandha Rajabhat University, the participants were provided with a list of movies contained crisis content, and they were asked to vote for 4 movies that they wanted to watch in class. Before watching the movies, everyone had a coding sheet and was also instructed by the researcher. The participants finished their coding and description while watching movies. After that, the researcher led them into a class discussion about what they learned from movies. All their coding sheets were collected and coded again by using content analysis. Two blind coders rated the three variables, as follows: (1) crisis response strategies (ethical strategy= 1; unethical strategy= 0), (2) ethical or unethical role fictional characters who used the strategies (hero=1; villain=0), and (3) dominant role of characters who use the strategies (major character=1; minor character=0).

### Analysis

ANOVA and Tukey Post Hoc Test were used to compare the amount of right answers provided by the participants. Independent-sample t-test was used to compare the number of ethical and unethical crisis response strategies, ethical and unethical fictional characters, and dominant or minor role of characters. Because the same group of students watched 4 movies, the researchers needed to use Bonferroni correction to increase p-value 4 times to prevent Type I errors.

## RESULTS

After the data collection process, the results were analyzed in a statistical package. The total number of cases was 780, and 547 cases were with the correct answers. ANOVA was used to test if the students developed their understanding regarding crisis response strategies found in movies, and the findings revealed that the numbers of right answers were continuously increasing every week ( $F=98.687$ ;  $p=.001$ ;  $p_{adjusted}=.004$ ). This implied that this teaching method was suitable with this group of students. In Tukey Post Hoc test, there was a statistically significant difference found between the numbers of correct answers from the first and second movies (Statistic=.231;  $p=.001$ ;  $p_{adjusted}=.004$ ), the second and third movies (Statistic=.278;  $p=.001$ ;  $p_{adjusted}=.004$ ), but there was no significant difference between the correct answers from third and fourth movies (Statistic=.074;  $p=.229$ ;  $p_{adjusted}=.916$ ). This implied that students may only need to watch 3 movies to understand crisis response strategies, and they did not need to watch the fourth movies. These findings help to make a suggestion to the teachers who want to use this teaching method to save their class hours to provide the students with other learning topic.

The results from independent-sample t-test showed that heroes were more likely to use ethical crisis response strategies, and villains were more likely to use unethical ones ( $t=4.670$ ;  $p=.001$ ;  $p_{adjusted}=.004$ ). For

example, a hero would try to correct their past mistake by helping other people who face the crisis he had made, but a villain would deny and be irresponsible about what he had done. Another part of mean comparison revealed that major characters were more likely to use ethical crisis response strategies than minor characters, but it failed to reject the null hypothesis after adjusting p-value by the Bonferroni correction ( $t = 2.156$ ;  $p = .032$ ;  $p_{\text{adjusted}} = .128$ ).

**Table 1**  
**Result from Tukey Post Hoc Test and Descriptive Statistic**

Movie #	Correct answer	Stat. diff. from Movie #1	Adjusted p-value	Reason of Incorrect Answer		
				Misconcept about the crisis	Incorrected identify the strategy	Unreadable hand writing
1	36%	-	-	121(51.9%)	2(9%)	11(4.7%)
2	60%	.231	.004	42(42.4%)	5(5.1%)	18(18.2%)
3	87%	.509	.004	11(50%)	1(4.5%)	10(45.5%)
4	95%	.584	.004	3(25%)	9(75%)	0(0%)
total	70.13%			177(76%)	17(7.3%)	39(16.7%)

## DISCUSSION

This teaching method could be considered as an effective strategy that could gain students' attention and increase their knowledge and understanding. The findings suggested that to provide the students with three movies to watch and analyze was enough for learning crisis response strategies. To save class hours, teachers may assign their students to analyze the movie by using several theories or topics. For example, the students may list down gender and racial stereotypes, parent-role diminishing, and violence against minorities at the same time when they watch a particular movie. Based on the findings, this teaching method was effective for this group of students, but it may not be able to generalize in other schools or other countries.

One thing that had surprised the researcher during the workshop was how a participant raised a new crisis response strategy that had never been in the list of Coombs (2007). She told the researcher that a fictional character diminished his own mistake by talking about the prior reputation of another who was in the same position as him. Generally, when people face crisis, they may mention their own past reputation, but in this case, this participants' suggestion could contribute to both the knowledge regarding crisis management and also how identification theory could be used during crisis.

Future research in media studies may try to use skillful raters to conduct content analysis or thematic analysis directly from the movie. Although students gain literacy skills from movie analysis, their results may not be precise enough for the researcher to identify media violence or misleading content. If misleading contents were found, researchers and educator should be able to suggest the way to solve such the problems. However, the findings of the current study showed that most students perceived proper media content, such as heroes and major characters acting ethically, and villains and minor characters acting inappropriately. Based on early studies regarding identification theory, media audiences were likely to imitate the characters who they identified with, such as their point-of-view, attractiveness, heroism, and place as major characters

(Pairoa & Arunrangsiwed, 2016; Mongkolprasit & Arunrangsiwed, 2016), and also the character that they perceive similarity towards (Arunrangsiwed, 2015b). As a result of this, it could imply that the movies used in the workshop of the current study had safe content, because the participants perceived ethical crisis response strategies used by hero and major characters.

As mentioned earlier, the major limitation of this study was that the participants were from similar majors in a university, so it may not be able to generalize for all students. Another limitation that prevents the finding to be generalized was that only 4 movies were used as the cases and the genre of all these movies were the same. This genre was action with a rating of PG-13. Future studies should select various movie genres and other themes of knowledge used to discuss movies.

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# **A CORRESPOND TO EFFICIENT MANAGEMENT MODELS FOR AGRITOURISM BUSINESS IN EASTERN REGION OF THAILAND**

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## **ABSTRACT**

In the Eastern part of Thailand there are lots of tourism businesses in operation with lots of tourist attractions in places like Chonburi, Pattaya, Rayong and agritourism has increasingly been developed in this region especially the activities related to agricultural products. However, it appears that agritourism business there still lack of efficient management, i.e., most farmers and planters tend to manage as best their abilities provide. This study aims to learn to any efficient models for the management of agritourism business in the eastern region of Thailand so as to construct efficient management models suitable for agritourism business by interviewing entrepreneurs having been awarded with Thailand Tourism Award in Agritourism and relevant local governments.

**Keywords** - Correspond, Efficient Management, Agritourism Business

## **INTRODUCTION**

In the Eastern part of Thailand there are lots of tourism businesses in operation with lots of tourist attractions in places like Chonburi, Pattaya, Rayong and agritourism has increasingly been developed in this region especially the activities related to agricultural products. However, it appears that agritourism business there still lack of efficient management. Therefore the researcher has had an intention to learn of any efficient management catch up to the agritourism business in the eastern region of Thailand to be used as guidelines for improvement in management and potentiality of the agritourism businesses. The outcome of this research would prove beneficial to planning and management of those who have any ongoing, impending or opportunity to extend business in agritourism as well as to public and private organization related to tourism of Thailand and tourism business entrepreneurs in term of strategic marketing planning to bring fourth popularity and successes in the time yet to come.

## **OBJECTIVES**

This research intends to learn of progress to manage agritourism businesses in the eastern region of Thailand.

## **RELATED THEORIES AND CONCEPTS**

### **Concepts of Agritourism**

Agritourism-related concepts are initiatives in tourism partly originated from the process of agritourism studies of the students and teachers who enjoyed the pleasurable lifestyle of home-stay agritourism, conducting agricultural activities and trying out different lifestyles and learning different cultures, gaining agricultural experiences and also be able to learn and have uncommon experiences. It's considered a tourism which can create in impression with Green Tourism. Now, Thailand had several agritourism promotion campaigns in aspects of agricultural farm, (Jim Thomson Farm, Takhop Subdistrict, Pakthongchai, and Silverlake Vineyard, Pattaya, etc.) and horticulture (orchards, flower gardens, orchid gardens, etc.) which will expand to green tourism of other categories, fisheries, animal husbandry, garden plant, and so on. Agritourism/Agrotourism is a form of tourism focuses on learning farmers agricultural lifestyles, emphasizing on participation of tourists in activities that will inspire knowledge which in turn would be beneficial and profitable for communities and farmers. Agritourism is thus a mixture of conservation and tourism, so as to avoid any adverse impact to communities and the environment.

Department of Agriculture Extension (2006) has stated that agritourism is a touring and traveling to agricultural communities of gardens, agroforestry, herb gardens, animal and pet farms and aquaculture, and government buildings, as well as institutions that conduct researches and develop technologies on modern agricultural production, to sightsee the successes and enjoyment of agricultural activities in different aspects and gain knowledge and new experiences on a basis of responsibilities and being conscious of preserving the environment of such places. Agritourism is a tourism emphasized on agriculture for the learning of nature of agricultural products, agrarians and farmer's way of life.

In brief, agritourism means touring and traveling to agricultural area of gardens, agroforestry, herb gardens, animal and pet farms, which aim to engage tourists in agricultural activities and tours, so as to inspire new knowledge and experiences on a basis of responsibilities and conscious of preserving the environment that educates on natures of agricultural products, agrarians and farmer's way of life, leading to the acquisition of agricultural knowledge and way of life, cultures, traditions and is a means to utilize existing resources to create learning processes beneficial to and profitable for communities and farmers.

### **Strategic Management**

Strategic management is a form of organizational management with capabilities and resources to attain strategic aims by developing and utilizing budgets to acquire a tremendous amount of resources to feed into the process of analyzing value chain activities to achieve successes in strategies and guidelines in policy making and processes that support the strategies to realize the best possible performance and encourage constant improvement by means of value chain, as well as usage of information, communication and operational systems, allowing for successful demonstration of strategic roles of organization personal, motivation to achieve performance objectives and establish good strategic management and enabling work environment that supports the organization's strategies, cultures and the use of strategic leadership to implement such strategies. (Robert, 2003)

### **Definition of Strategic Management**

Strategic management generally means any acts of specifying the organization's mission, vision, objectives and goals in short and long term and then develop plans to achieve these objectives, leading to the fulfillment of such objectives and goals.

How strategic management could lead to an increase in chance of success and failure of an organization has certain principles as follows:

- 1) Strategic management entails acts of specifying vision, orientation, mission and objectives of business organization systemically. So, strategic management is something that defines the orientation of the organization and help its administrations adapt to environmental trends. The awareness of such trends would substantially help the administrators in the definitions of objectives and performance orientations in accordance with the trends.
- 2) Strategic management also lead to better change management, as preparation for changes has already been made, making the organization seek for the best possible solutions in the face of the changes of relevant factors, because strategic management is an act of defining methods or guidelines to operations and activities of the organization to attain the specified goals or objectives of the organization.
- 3) Strategic management helps establishing harmony in operations, as there are clear definitions of strategies, applications and monitoring, resulting in a mutual understanding and cooperation, especially the understanding in regards to the organization's objectives and also aids resource allocations to proceed effectively in accordance with organizational management of various parts.

### **Knowledge Management**

The concept of knowledge management is a concept that reinforces management systems, involving forms of knowledge management in critical knowledge utilization, strategies to develop existing knowledge and in processes of knowledge gathering and further exchanges of knowledge. (Nanoka & Takeuchi, 2000/Wijarn Phanit et al., 2012)

Knowledge management is an act of collecting bodies of knowledge scattered among people or documents within a government unit, in order to develop onto system which everybody in the organization can access to the knowledge and improve themselves be knowledgeable and competent on work performance, which in turn will maximize the organization's competitiveness. There are two categories of knowledge:

- 1) Tacit Knowledge is the kind of knowledge derived from an individual's experiences, talents or instinct when attempting to understand things, difficult to transfer to another person by means of writing it down or verbalizing it, e.g., work skills, crafting skills, critical thinking skills, sometimes called abstract knowledge.
- 2) Explicit Knowledge is knowledge that is collectible and transferable via various methods, e.g., records, theories and manuals, sometimes called concrete knowledge.

### **Innovation Management**

The discipline of innovation has been studied and talked about for quite a long while, but the definitions or meanings of innovation, including understandings thereof, still vary from academic to academic depending in their backgrounds and perspectives, thus a universally agreed definition is yet to be determined (Gopalakrishnan & Bierly, 1997). The root of the word innovation derived from a Latin word "innavare" which means "to do something new" (National Innovation Agency, 2007).

### **Innovativeness**

By reviewing Somnuk Aujirapongpan et al. (2010) a literature on types of innovation, it has been revealed that, in the present time, type of innovations have been referred to differently depending on the objectives of usage and education, e.g., product innovation, process innovation, radical innovation, incremental innovation, technology innovation and management innovation (Utterback, 1994; Cooper, 1998; Smith, 2006; Schilling, 2008).

Studying on entrepreneur's innovativeness is another subject that has been talked about and applied in the study of business competencies of entrepreneurs, which has been found studying in two dimensions, organization's innovativeness and individual's innovativeness (Rutherford & Holt, 2007). Hence, the definitions of innovativeness would have different focuses, for example, Schumpeter (1993) highlights innovativeness in the aspect of new product and service development and new production processes as well as new marketing approaches, corresponding to the innovation.

### **Marketing**

The concept of marketing is another concept that is no less significant than management principle in establishing agritourism business in the eastern region of Thailand and running them sustainably with efficient and effective management processes. The entrepreneurs may use marketing approaches systemically and innovatively in the integration of tourism service provision and agricultural product distribution as an alternative to the management of their agricultural business to generate additional values and be able to expand business service further in accordance to modern marketing concepts (Kotler, 2003).

The 7P's of service marketing mix, according to Philip Kotler, are comprised of: 1) Product 2) Price 3) Place 4) Promotion 5) People 6) Physical Evidence/Presentation and 7) Process

### **Networking**

The concept of networking is an approach to conduct tourism business by building tourism-related network and then develop to agritourism accordingly. The improvement of the nation's economy requires contributions from tourism industry, which is an industry that has a high rate of consumption and is related to the environment, both directly and indirectly. The circumstance where everybody in tourism industry turns towards environment preservation and helps the others in the same business area is deemed critical to the development of tourism toward sustainability. Tourism business nowadays have increasingly begun to change their business strategies toward a form of alliance, forming a network of business in the same area. If a business is community-based, it would be common objectives needed to be achieve such as to develop agri-tourist attractions that would strengthen the community and bring about jobs and revenues and pass on the value-

adding traditional wisdoms in a strong and sustainable fashion. Forming a network so as to exchange strengths and weaknesses to compensate each other, creating a synergistic effect that will yield better results by twofold, would always be better than doing things separately and bring together later.

As for the concept of community enterprise, which is derived from the initiation of the approach to build learning networks within a community, will depend on such networks that can be used as a stage for knowledge exchange because the exchange of new knowledge, experiences or lesson learnt from practice are of great values to stimulate the learning of network member, which will also lead to a close and consecutive coordination. (Inwang et al., 2003, 2007) Building a network to foster meeting will give members access to useful information that will benefit the performance of the network at the greatest extent. To drive a community enterprise toward a sustainable community's economy will require gatherings to reinforce the community further.

## LITERATURE REVIEWS

Kongkul Chatchai (2016) has conducted a research on "An Organizational Culture Management: A Case Study of Thai Airways International (Public) Company Limited Attaining a Highest Performance Service Satisfaction" and concluded that: The Culture Management of Thai Airways International (Public) Company Limited Attaining a Highest Performance Service Satisfaction are Organization Culture, Ideas Culture, Behavior Culture and Material Culture are effect to the Management of Thai Airways International (Public) Company Limited Attaining a Highest Performance Service Satisfaction and Sustainability the issue of Organization Culture can be further Development to improve the Quality of Service provide to the Airlines that have a Highest Performance Service Satisfaction. The Development features in term of Values beliefs of Flight Attendants of Thai Airways International (Public) Company Limited is a Characteristic of the Transition from the Older to the Young Generation both the Working Methods and Activities including Training which resulted in the Development of the Airline's Commitment to build a Highest Performance Service Satisfaction. There are in an Understanding in the Line of Duty to provide full Capacity to the Clients are satisfied the Impression of getting good Service. The key informants that a Culture that are all able to Express the Behavior of Service providers by the Service is fully and full capacity a Communication can talk at Understanding the Needs and Attentive Care of Passengers in order to get a Quality Service in a Global Level. The issues of Material Culture that are preparing them fully and a supply things according to the Requests of Passengers by Process and Procedures that are Universal based on the Charm of Thailand to Develop Service of Thai Airways International (Public) Company Limited Attaining a Highest Performance Service Satisfaction of Sustainable.

Kongkul Chatchai (2015) has conducted a research on "A Management Prototype of the Thai Airways International (Public) Company Limited to an In-Service High Performance Organization" and concluded that:

1) In terms of the High Performance Organization In-Service dimension, the organization should develop this dimension aspect under limited serviced resources with focusing on high performance of service capabilities, efficient utilization of resources, speedy and safety service.

2) In terms of Knowledge Management dimension, the vision on knowledge management should be not only vivid and substantial but also coherent with the organization's targets, objectives and policies together with the development of knowledge exchange and transfer especially the development of hardware and software.

3) In terms of Organizational Culture dimension, the organization should integrate culture of thought and action, combined with socializing service manner as country representatives, and

4) In terms of Human Resources Management dimension, the organization should give priority to the personnel's recruitment, employment, development and retention to align with the service core knowledge, capability and skills including the development of the virtues of providing a good governance, and supporting personnel participation to achieve a sustainable In-Service High Performance Organization.

## METHODOLOGY

The researcher has studied both internal and external environmental factors, reviewed literatures and examined relevant research papers and media to deduce a means to develop tourism business of the eastern region of Thailand.

## RESULTS AND CONCLUSION OF RESULTS

The results have revealed that, presently, there is a total of 172 attractions in the eastern region of Thailand that met the criteria and registered as agritourism attractions as shown in Table 1.

**Table 1**

Number of Agritourism Attractions in Eastern Region of Thailand.

Provinces	No. of Attractions
Chachoengsao	41
Chanthaburi	37
Chonburi	35
Prachinburi	6
Rayong	43
Trat	8
Sa Kaeo	2
<b>Total</b>	<b>172</b>

**Source:** Development and Promotion of Agritourism Workgroup, Bureau of Farmers Development, Department of Agricultural Extension (2014)

Therefore, regarding the quality standards in running a agritourism business, the Tourism Authority of Thailand has established criteria for the Thailand Tourism Awards in the area of agritourism as follow: 1) Orientation and Definition of Tourist Attraction Development Planning. 2) Management of Tourist Attractions towards Sustainable Tourism and Under Sufficiency Economy Approach. 3) Promotion and Participation in the Management of Tourist Attraction and Contribute to Global Warming Reduction. 4) Value Management of Tourist Attractions. 5) Appropriateness of Tourism Activities. 6) Management of Learning, Information and Communication of Tourism Definitions and 7) Appropriateness of Tourism Activities and Marketing Extension. And from Those criteria, the agritourism entrepreneurs in the eastern region of Thailand having been awarded with Thailand Tourism Awards in Agritourism by the Tourism Authority of Thailand are thus in a total of just 3, which are Suphattra Land, Maiked Homestay and Khao Hin Sorn Royal Development Study Center, Chachoengsao. From that information it is disclosed that the development of quality standard of agritourism business is still an important issue to the development of agritourism business in the eastern region of Thailand and together with the lack of study on problems and approaches as any suitable from of management, a study to obtain information that would benefit the development of farmers and strategic planning of the public sector in future in order to enable the agritourism business to cope with the growth of tourism business in the eastern region of Thailand is considered essential. So, the researcher has constructed a research domain framework as a means to derive an efficient approach to the management of agritourism business in eastern region of Thailand by analyzing the 3 agritourism entrepreneurs in the eastern region of Thailand who have awarded with the Thailand Tourism Awards in agritourism from the Tourism Authority of Thailand, Suphattra Land, Maiked Homestay and Khao Hin Sorn Royal Development Study Center, Chachoengsao, so as to lay a guideline to promote entrepreneurs abilities in management of agritourism in the eastern region of Thailand and reinforce the potentials in running agritourism business which would be of benefit to the planning and management of entrepreneurs who have any ongoing, impending or opportunity to extend business in agritourism as well as to public and private organizations related to Tourism of Thailand and tourism business entrepreneurs in term of strategic marketing planning to bring fourth popularity and successes in the time yet to come as shown in figure 1.



## RESEARCH/DOMAIN FRAMEWORK

**Entrepreneurs** (Suphattra Land, Maiked Homestay and Khao Hin Sorn Royal Development Study Center):  
**Marketing Mix 7P's** (Product, Price, Place, Promotion, People, Physical Evidence/Presentation, Process)  
**Management** (Strategic Management, Networking, Knowledge Management, Innovation Management, Participation)

**Figure 1.** Research Framework **Source:** Researcher

**Public Sector (Regional and Local):** Policy and guidelines for the support, promotion, problem and challenges of development of agritourism business.

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# THE PATTERN OF DAILY EXERCISE FOR THAI COMMUNITY DM. AT PREMRUTHAI PRAVATE COMMUNITY BANGKOK

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## ABSTRACT

**Aims:** To change the ability of self-efficacy, self regulation and self-care health behavior about exercise health behavior for prevention and control of diabetes complication. with Pattern Of Daily Exercise.

**Methods:** The sample of subjects at risk and patients with diabetes and high blood pressure. A total of 28 people from the Premruthi community 20 at Pravate Bangkok. Most are female have lower education. Entitled to healthcare Gold in Bangkok. The Vulnerable groups and groups with diabetes and high blood pressure 51.3 percent. Accounted for 10.6 per cent of the risk factors is important. Obese / BMI was 24.7 percent higher risk behavior is eating spicy food (sweet, sour, salty) 40.7 percent. Lack of exercise, stress, 12.7 percent to 28 percent, Genetic risk is 23.3 percent and 12.7 percent were smokers. By the method of participatory learning with Pattern Of Daily Exercise. Research design 4 times meeting each time consisted of 4 steps (planning, action, observe and reflect). The main activities in health education Pattern Of Daily Exercise program behavior were motivate compliance by ice breaker to know each other, education and practice, care and share about experience and information, empowerment, story telling, two-way communication, reflective thinking, team-based learning, flipped class, active learning about self care in the prevention and control of diabetes complication among participants in group.

**Results:** Most members were satisfied with the high level of 97.3 per cent suggested in the project next time. After receiving behavior modification ago have efficacy in their health behavior (self-efficacy), self-regulation and self-care in exercise behaviors better than before the event: 92.3 percent, 90.0 and 96.6 of the participants, respectively. It is a change in a better direction.

**Conclusion:** This research focused on the development of activities that encourage participants have the skills and knowledge through practical action. Make sustainable approach is organized in accordance with activities that blend into community everyday life. Obtaining social support to encourage volunteerism, , some extra incentive to participate. These factors resulting trust and cooperation from members and communities of practice to foster healthy.

**Keywords**--Exercise participatory action research, Health education

## INTRODUCTION

Diabetes is one of the largest global health emergencies of the 21<sup>st</sup> century. Each year more and more people live with this condition, which can result in life-changing complications. In addition to the 415 million adults who are estimated to currently have diabetes, there are 318 million adults with impaired glucose tolerance, which puts them at high risk of developing the disease in the future death<sup>1</sup>. Of complications to the eyes, kidneys, nervous system, heart and stroke.

In Thailand are facing diabetes Data from the Bureau of Policy and Strategy Ministry of Public Health Meet people died from diabetes in the year 2009, about 7,019 people, or about 19 people per day, and a survey of the health status of people aged 15 years and over Thailand 2<sup>nd</sup> Year 1996-1997 compared to the three years from 2546 to 2547, prevalence increased from 4.4 percent to 6.9 percent for the fourth time as last time. Year 2551-2552 Found the same prevalence of diabetes is 6.9 percent. And a survey of the health status of Thailand found that one in three times, four of those with diabetes do not know they have diabetes before. For those who have been diagnosed by a physician as diabetes, 3.3 percent were not treated. And those who were treated with only 28.5 percent of the control of blood sugar levels in the less than 126 milligrams per deciliter had<sup>2</sup>. So for those who are at risk from diabetes and asymptomatic. Reducing risk factors and treatment of early stage as well as encouraging people with diabetes to take care of themselves properly, so it is a measure that will reduce and slow down the disease and the effects. Diabetes is caused by several common factors that can be prevented complications by behavior modification, eating diminish the fat diet and exercise can prevent cardiovascular disease in diabetes mellitus e<sup>13</sup>. By helping vulnerable groups and people with diabetes understand and realize the threat of disease. Knowing the causes of disease know the early warning signs of diabetes. Knowing how to prevent delay diabetes. Learn self-care on diabetes control and prevent complications that arise as a consequence. The health benefits of regular exercise, establishing and maintaining regular physical activity, the cultural and environmental barriers to physical activity in community is particularly important to promote physical activity in people with diabetes.

**Health benefits of physical activity in type 2 diabetes:** Improved insulin sensitivity and therefore better blood glucose control, increased glucose utilization, decreased glucose production from the liver, decrease in circulating insulin levels during exercise<sup>16</sup>. Several recently reported trials show that type 2 diabetes can be prevented and delayed, at least in the short term<sup>11</sup>. The Da Qing study in China followed people for 6 years. Subjects were randomized to three groups: Diet intervention, exercise intervention, combined diet and exercise. After 6 years, the 'diet' group showed a risk reduction of 31%. The 'exercise' group showed a greater risk reduction (46%). There was no additive effect of diet and exercise, with the 'diet and exercise' group showing a similar risk reduction (41%) to that of the 'exercise' group alone. In the Finnish study, 522 subjects with impaired glucose tolerance (IGT) were randomized to a control group or a group who had a diet and exercise intervention. They were followed for 3.2 years. There was a 58% reduction in the incidence of type 2 diabetes in the 'diet and exercise' group<sup>3</sup>. Finnish Diabetes Prevention Study (Finland) 2001 522 persons, 40-64 years BMI >25 Random selection by persons 3.2 years follow-up Diet + exercise 58% decreased incidence in the 'diet + exercise' group<sup>4</sup>. Diabetes Prevention Programme (USA) 2002 3234 persons =>25 years, BMI =>22 (Asian people), =>24 (other groups), random selection 2.8 years follow-up 3234 persons =>25 years, BMI =>22 (Asian people), =>24 (other groups), random selection 2.8 years follow-up 31% decreased incidence of diabetes in the metformin group 58% decreased incidence in the 'diet + exercise' group. The Diabetes Prevention Program also studied people with impaired glucose tolerance (IGT). In this study, people were randomized to one of three groups: Placebo Metformin Diet and exercise.<sup>5,6</sup> Most guidelines recommend exercise (including aerobic and/or resistance training) several times a week. Recommendations about the amount and kind of exercise differ throughout the world. The recommendations in this slide are from the Canadian Diabetes Association Clinical Practice Guidelines<sup>6</sup>. The IDF Guideline for Type 2 Diabetes recommend 30-45 minutes a day, 3-5 days a week Brisk walking is probably the most common form of aerobic exercise<sup>7</sup>. Resistance training does not necessarily require expensive equipment. Weights used can be as simple as a can of soup or a packet of grain. Progressive resistance training has shown benefits when people progress to three sets of approximately eight resistance type exercises at moderately high intensity (eight repetitions at the maximum weight that can be lifted eight times)<sup>11</sup>.

**Tips to help start physical activity** Identify an activity that will be enjoyed slowly, perhaps 5-10 minutes at a time Increase duration and intensity slowly. Consider doing exercise in a group or with a partner.

Prevent boredom by varying the activities. Set realistic goals. Encourage people to reward themselves when goals are met. People who have not been recently physically active and are intending to start exercising should see a physician in order to identify the risks associated with exercise and how to manage these risks. As healthcare providers we need to ensure that people who undertake physical activity are aware of safety precautions. They should be reminded to drink adequate water to avoid becoming dehydrated, especially if exercising in a hot climate. If blood glucose is  $>14\text{mmol/L}$  ( $252\text{mg/dl}$ ), strenuous exercise is not recommended as it may cause the blood glucose to increase. If there is not enough insulin in circulation, the liver will respond to exercise by releasing more glucose. In type 1 diabetes, it may also lead to accelerate fat catabolism and ketone formation<sup>11</sup>

**Precautions – type 2 diabetes** The risk of hypoglycaemia is reduced in type 2 diabetes. However, some people on insulin secretagogues or insulin therapy may need to adjust their medication prior to prolonged and excessive exercise.

**Summary** Physical activity should be encouraged in all people with diabetes. People need to be educated about prevention and treatment of hypoglycaemia. People should be taught to plan for periods of physical activity.

We know that living with diabetes is not easy; people with diabetes must assimilate a great deal of information and complete a series of daily tasks in order to effectively self-manage their condition. Lifestyle and behavioural changes regarding exercise, therefore, should be required from people who are DM or at high risk. This needs to be taken into consideration when providing exercise education programmes. The first step is to educate in order to facilitate informed decision making. Although many people with type 2 diabetes do not view their condition as serious, it needs to be acknowledged and understood that complications occur with all types of diabetes. Diabetes is largely managed by the person with the condition on a day-to-day basis. Thus, caring for diabetes is a personal responsibility.

We can think of education as the body of information, skills and technologies that a person with diabetes needs to learn. As discussed in the teaching and learning module, how they learn will have an impact on whether or not behavioural changes follow. In this module we will discuss how to help people take the steps to behavioural change once they have the necessary knowledge.

However, by a skilled multidisciplinary healthcare team in diabetes education, ‘teaching and practicing can be perceived as offering people with diabetes the opportunity to learn.

A person cannot be forced to learn something; effective teaching creates an interest in a subject so that students will want to grasp the opportunity to learn. There are many risk factors for type 2 diabetes. Some are preventable and a great deal of work has been done to try to develop programmes to prevent diabetes. To maintain good health habits as a way of life of each individual, consisted as the follow<sup>12</sup>:

1. Positive reinforcement
2. Result based management
3. Optimism
4. Motivation
5. Individual or client center
6. Self-esteems

The efficacy of a behavioral change, therefore, the implementation of the project was to maintain good health habits as a way of life of each individual promote learning how to prevent diabetes complications.

Thus **The Pattern Of Daily Exercise For Thai County DM . at Premruthai Pravate Community Bangkok** This results in reducing complication, morbidity and mortality rates from diabetes complications, and maintain good health habits as a way of life of each individual promote learning how to prevent diabetes complications in Premruthai Pravate Community Bangkok

## OBJECTIVES

The members who attended this program is maintain good health habits exercise as a way of life of each individual promote learning to prevent diabetes complications.

## RESEARCH DESIGN AND SAMPLES

The research design by using Participatory Action Research (PRA) with 28 purposive sampling at Premruthai Pravate Community Bangkok, who at risk for diabetes or high blood pressure. They enroll in the participatory activity with **The Pattern Of Daily Exercise** Health during January 2013 – may 2013, for creating 3 S (self awareness, self regulation and self care) as in the step figure 2.

Figure 1

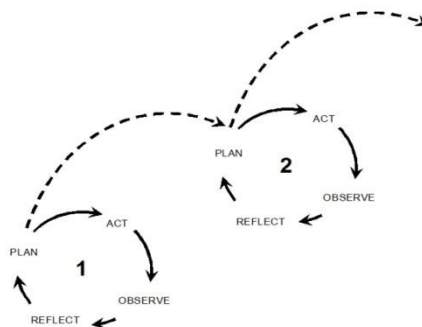


Fig. 1 shows a spin around the operating part for prevention and control of Diabetic complication

## METHODOLOGY

The duration of the operation in January 6, 2558 - July 31, 2558. By the method of participatory learning with **The Pattern Of Daily Exercise** program. Research design 4 times meeting each time consisted of 4 steps (planning, action, observe and reflect. The main activities in **The Pattern Of Daily Exercise** program behavior were motivate compliance by ice breaker to know each other, teaching and practicing, care and share about experience and information, empowerment, story telling, two-way communication, reflective thinking, active learning about self care in exercise among participants in group. The plan of activities for promoting health and behavioral modification in each time were in the following

### *1.1 The first meeting activity*

- Icebreaker
- Initial health assessment activities
- Teaching demonstration and practice.
- Participation for creating self awareness and participation in changing their behavior.
- Group discussion, participation in solving problems of the participants.

### *1.2 The second meeting activity*

- Icebreaker
- To Improve understanding of health behavior modification
- Training activities to educate about exercise health behavior modification .
- Group discussion participation in solving problems of the participants, demonstration, practicing and the empowerment of the self to the self-regulatory.

### ***1.3 The third meeting activity***

- Icebreaker
- Promoting knowledge to use in exercise group practice activity
- Activity for modification health behavioral
- Evaluation activities individually by test phone and home visits by nurse.
- Group discussion participation in solving problems of the participants, demonstration, practicing and the empowerment of the self to the self-regulatory of exercise .

### ***1.4 The fourth meeting activity***

- Icebreaker
- Assessment activity after participating. and posttest.
- Summary of the activities and the benefits of participating.
- Group discussion and observation participation in solving problems of the participants, demonstration, practicing and the empowerment of the self to the self-regulatory. , Awards and souvenirs.
- Evaluate program
- Closed the program

## **ETHICS**

The research takes into account the right of the sample. The objectives of the research process, research. And a period of research The clarification of the right to accept or refuse to participate in this research. Without affecting in any way the lesson. In addition, during the research If the samples do not wish to participate in the research completed on schedule. Can be terminated Without affecting the learning of information obtained from this research are confidential. Presentation of data will be presented in an overview. There is no disclosure of the name and surname When samples are willing participants. The research sample Sign a consent form to participate in the study (informed consent form).

## **RESULTS**

From the risk group with diabetes and high blood pressure 51.3 percent. Accounted for 10.6 per cent of the risk factors is important. Obese / BMI was 24.7 percent higher risk behavior is eating spicy food (sweet, sour, salty) 40.7 percent. Lack of exercise, stress, 12.7 percent to 28 percent, Genetic risk is 23.3 percent and 12.7 percent were smokers. The results showed that after receiving **The Pattern Of Daily Exercise** Program Have efficacy in their exercise health behavior (Self-efficacy), Self-regulation and Self-care better than before the event: 92.3 percent, 90.0 and 96.6 of the participants , respectively. It is a change in a better direction. And blood pressure drop 86 percent to 36 percent weight loss and BMI decrease of 20.7 percent. That health status has changed to the better . Most members were satisfied with the high level of 97.3 per cent

The behavior change after **The Pattern Of Daily Exercise** were changed as following.

1. That the efficacy of behavioral change their health than before, increasing participation of 26 people, representing 92.8 percent of the total.

2. Directing the behavior of people at increased over the first 25 participants, representing 89.2 percent of the total.

3. Has the self-care behaviors. The increase over the first 26 people to attend the event 92.8 percent of the total.

### ***Satisfaction of the Program***

The satisfaction of participants in this program at the high level of 89.2 percent.

### Data Analysis from Qualitative Data

By analyze qualitative data about **The Pattern Of Daily Exercise** in the prevention and control of diabetes complication on a daily basis that involves behavior modification& health promotion. The study concluded by telling the members about controlling diabetes complication risk by teaching and practicing about exercise. The result concluded that most control blood sugar, daily exercise.

**Table 1**  
**Numbers and percentages of the sample (n = 28 patients)**

Data	n	%		Data	n	%
<b>Age (yrs)</b>				<b>Sex</b>		
40-49	8	28.6		Female	20	71.4
50-59	8	28.6		Male	8	28.6
>60	12	42.8		<b>After the Program</b>		
<b>Education</b>				<b>Weight change</b>		
High school,Vocational	15	53.6		Diminish	18	50.0
Bachelor.	13	46.4		unchanged	7	25.0
<b>Right of Medical Care</b>				Increase	3	10.7
Gold Card	12	42.8		<b>Blood pressure change</b>		
Social Security	14	50.0		Diminish	18	64.2
Government	2	7.2		unchanged	7	25.0
				Increase	3	10.7
<b>Data</b>	<b>n</b>	<b>%</b>		<b>Data</b>	<b>n</b>	<b>%</b>
<b>The risk for diseases (more than one risk)</b>				<b>Blood Glucose Level</b>		
Diabetes Mellitus	25	89.2		Diminish	24	85.7
Hypertension	15	53.0		unchanged	4	14.2
Cerebovascular	8	28.5		Increase	no	0.0
Obesity	20	71.4		<b>Satisfaction of Program</b>		
<b>Sample with disease</b>				Moderate	3	10.7
Diabetes Mellitus	20	71.4		High	25	89.2
Hypertension	14	50.0				
Cerebovascular	8	12.5				
Obesity	8	28.6				

### DISCUSSION

The result from this research shows that the biodata of samples mostly 71.4 % is female and 28,6 is male. This results is according to the study of Intharakamhang, A. et.al (2010) <sup>5</sup> -Study of Administration and Evaluation to Health Adaptation of Health Center in Bangkok 21 projects in 2009 found that DM person is female 67.68% and male is 32.32 % compare with World population (2015) DM person is female 199.5 million and male is 215.2 million, contrast with this study and finding of Intharakamhang, A. et.al study<sup>8</sup>. It may be the different from race context in many areas include economic, life style, nutrition, exercise, sleep and rest, working.

The sampling's BMI decreased 50% , BP decreased 85.7% .. This results is according to the study of Intharakamhang, A. et.al (2010)<sup>8</sup> "Study of administration and evaluation to The health adaptation of Health Center in Bangkok 21 projects in 2009 found that participation group decrease BMI 65.36%, BP 61.45%, BS (DTX) 59.49% , mean that they can modified behavior must good self awareness so they can got self regulation at last they can self management to prevent complication both acute and chronic complication mean that they got self efficacy.

This results is also according to the study of Sumnuk, N. "Study of effective program modification behavior people health risk group to hypertension in community, Pakpanung district, Nakornsrihamaraj" and Boonsri Kittichottipanich et.al<sup>17</sup> (2013) The Nutritional Health Behavior Modification for Controlling Hypertension at Ruampattana Community Bangkok found that participation got more knowledge, activities, exercises, means of self management behavior about eating exercise increase after the study significant. The satisfaction of participants in this program at the high level of 89.2 percent. Robert Scales, PhD\* and Joseph H. Miller, MSW<sup>10</sup> Motivational Techniques for Improving Compliance with an Exercise Program. Skills for Primary Care Clinicians Found that it is one of several useful approaches that can be used by a primary care clinician to improve patient compliance.

Thus in this program, the most participant increase knowledge&self regulation behavior. That is the one guideline for controlling and prevention diabetes complication.

### CONCLUSION AND RECOMMENDATIONS

This research using participatory action research make sustainable approach is organized in accordance with activities that blend into everyday life. Obtaining family friend and social support to encourage remind control and avoid participant for good in exercise health care personals, some extra incentive to participate. These factors resulting trust and cooperation from members and communities of healthy community to promotion and modification health behaviors which focused on the development of activities that encourage participants have the skills and knowledge through practical action.

### ACKNOWLEDGMENTS

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# HOUSEHOLD SAVING POTENTIAL SUPPORTING TO FINANCIAL STABILITY IN SAMUT SONGKRAM

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## ABSTRACT

The purposes of this research household saving potential for our country economic stability were to study the potential of household saving in usual lifestyle and to educate the suitable saving knowledge and create the useful handout for the Thai savers monetary future planning in Samut Songkram. Methodologies we used for this study were 2 techniques. For quantitative research technique we used questionnaires, the results from 450 sampling savers revealed that they were well-educated, having upper medium to high revenue and had average saving rate between 35 – 40 % of their income. Their main purpose of saving was for spending in the end of life period. As for the pattern of savings / investment they tended to deposit in commercial bank, purchase the Government Saving Bank Lottery and invest in life insurance policies more than invest in financial assets in The Stock Exchange of Thailand (SET) because of the household savers understood the lump sum risk from SET and they did not want to face with fluctuation movement. For qualitative research technique we used an in-depth interview with 18 savers showed the result of their vision that “SAVING” was essential for everyone. The highest proportion of savings was distributed to deposit in commercial bank, deposit in their office saving co-operation and invest in life insurance policies. As for the high income household or the new family was allocated to the investment in real estate and sometimes in jewelry and the bullion.

**Keywords**—Financial Stability, Household Saving Potential, Samut Songkram

## INTRODUCTION

World Class Financial System, Household Savings have become increasingly important for the economic growth and stability for a decade. Huge savings, especially from the citizen, in sufficient quantities to businesses can be reinvested to grow the economy leading the Household Savings Sector to become the cornerstone of the country growth direction. The significant source of funding of the local household sector also does not rely on lending from abroad since it has higher risks from several factors. Finally, as Thailand is preparing to be one of the ASEAN members in 2016, we need to have a considerably good economic position, especially the financing that needs to be strengthened by starting from the most basic level, the household sector in particular. According to the forecast by the International Monetary Fund (IMF), GDP of Thailand economic rate would increase from 4.4 to 4.9 percent [13].

When comparing the proportion of savings as gross domestic products (GDP) percentage among Asian countries with similar economic status, we found that in 2013, the savings rate of Thailand, Indonesia, Vietnam and the Philippines were 34.36, 28.90, 24.59 and 13.41 respectively; all of which except the Philippines increased from 2012. Although Thailand has a high domestic savings ratio which makes the country seemingly able to grow and meet the targets; however, we found that savings in the household sector actually decreased when compared with both business and public sector. In 2014, the average growth of the

total savings of Thailand was at 4.5 percent per year while it could expand the investment average at 9.5 percent per year [15], indicating that the savings were much lower. This trend reveals that savings amount is not enough to invest in the future which might as well possibly result in deficit savings. These important and interesting points indicate that, even if Thailand's savings ratio is close to Singapore, Malaysia, Vietnam, and Indonesia, the capital market was still very low developed compared to Singapore and Malaysia [17].

Savings in the economic system were not only limited to those in commercial banks and other financial institutions, but also in the form of investment in the private sector or in the bond market. Before the economic crisis in 1997, Thailand mainly relied on commercial banks for a long time. Such banks had the ability to mobilize savings in a high degree; also the government had policies which protected the deposits thoroughly made by the people with financial institutions. In addition, the savings habits of most people were conservative, that is, they would rather choose to deposit with banks. However, because of the effects from economic crisis that year, the Thai Government came to realize that the financial structure of Thailand was not balanced; therefore, they put more effort into developing capital markets, new financial instruments, and innovations to increase funding alternatives as well as new investment alternatives. For the savers, there had been more diverse and complex forms of savings with the purpose of raising funds through stock market and bond markets in the same amount as the lending from financial institutions. New forms of savings include common stocks, debentures, unit trusts, and etc. In addition, long-term savings through life insurance policies had an increasingly important role as an intermediary to move money from the household to the corporate sector which demands for more money. At this time, savings in the life insurance business in Thailand is still low compared to Singapore and Malaysia, both of which there are holders of insurance policies of 80 and 43 percent respectively, whereas in Thailand, the life insurance policies holders are only 14.1 percent of the whole population or only 1.1 percent per gross national product. There is definitely a chance for this number to grow rapidly by the government having various policies which encourage people to have life insurance, lawfully enforce individuals with income, and reduce the personal income tax from the insurance premium. There is also a form of savings which are tangible assets such as the purchase of real estate, gold bullion, amulets of which the value are not affected by inflation. Mostly, the households use savings and investment tool as the rights of owning the assets and receiving benefits in the form of interest, dividends, rents, and profits from financial instruments which eventually results in the wealth for the family and the country. The behavior of individual or potential household savings to create financial stability in the ASEAN Economic Community; thus, was an interesting research topic. Moreover, this study focused on savings of the household sector in order to explore the phenomenon of accessing the financial markets, contribute to the determination of measures to promote and increase the level of savings and to promote the development of financial markets to be ready for ASEAN Economic Community. The conclusion drawn from our study would be to suggest economically beneficial policies for Thailand Government. The map of Thailand, Bank Notes, Gold Bullion, life Insurance and Stock Exchange of Thailand Index were shown in Figure 1, Figure 2, Figure 3, Figure 4 and Figure 5 respectively.



Fig 1. Map of Samut Songkram



Fig 2. Bank Notes at Bank of Thailand



Fig 3. Gold Bullion as a Monetary Reserve



Fig 4. Life Insurance Investment



Fig 5. Stock Exchange of Thailand Index

### LITERATURE & THEORY

Main theories consist of 1) Liquidity Preference Theory (Keynesian Economics) in 1936 [1] which believes that aggregate demand is influenced by a host of economic decisions—both public and private—and sometimes behaves erratically. The public decisions include, most prominently, those on monetary and fiscal (spending and tax policies). According to Keynesian theory, changes in aggregate demand whether anticipated or unanticipated come from transaction demand, precautionary demand and speculative demand 2) Monetary Policies (Milton Friedman, one of the most colorful and controversial characters in the history of American economics) in 1962 which trusts that private would collect financial assets from their work for the retirement period and the government should stay out of matters that do not need and should only involve itself when absolutely necessary for the survival of its people and the country and recounts how the best of a country's abilities come from its free markets while its failures come from government intervention.

## RELATED WORKS

Numerous affiliate studies are shining up both in the Western and Asia such as Ann Foster, 2001 [2] declared that Keynesian Hypothesis: KH, Life-cycle Hypothesis: LCH, Premium-income Hypothesis: PIH and Ricardian-equivalence Hypothesis: REH; all 4 hypothesizes concluded that income and the proportion of savings are positively correlated. Hefferan Carl, 2002 [3] stated that almost savers collect monetary items from their work for the last period; preparing for Children tuition fee, daily expense, healthcare and travel but they cannot add asset in the retirement period. Michael Marquardt & Skipton Leonard, 2009 [4] revealed that the borrowing is the channel to escape liquidity constraint at the present but its affects the decreasing future consumption. Woo Jung, 2009 [5] classified household income from low to high and explained that the small revenue they get, the tiny saving they have. Moreover, Michael Marquardt, 2010 [6], Richard Thaler & Shefrin Hersh, 2010 [7] and World health Organization, 2014 [16] indicated that household income positively cause to saving for wealth and Mazzocco, 2014 [14] announced that the household which accept low risk from investment tend to thrifty more than the household which accept higher risk.

## METHODOLOGY

The targets of the empirical analysis came from random sampling population lived in 5 provinces that sized 23% of total GDP of our country which represented the economic situation and located in the central region of Thailand as shown in Table 1.

**Table 1**  
**Number of Sample Size for each Technique**

<b>District</b>	<b>Sample Size For questionnaires</b>	<b>Sample Size for interview</b>
<b>Mae Klong</b>	150	6
<b>Ampawa</b>	150	6
<b>Bangkhonthi</b>	150	6
<b>Total</b>	450	18

First was the content which the researcher defined to evaluate the potential of household savings in normal lifestyle and to educate the suitable saving knowledge for the Thai savers to use for monetary future planning in this province. For the next step, our team used a quantitative method by 450 questionnaires and confirmed the results with a qualitative method by using an in-depth interview with 6 samplings from each district. Second, the time frame of this research was from October 2016 to September 2017.

## RESULTS

We found that the level of income affected the savings rate in this study area. The higher income persons were more likely to save money or invest for the future higher benefits than those with low revenue; this result presented among overall savers as well as when divided individuals into groups according to range of ages. Main aims were to find savings to spend in their retirement, to fund education for their children, and to plan for housing respectively. The desired benefits from savings or investments for the retirement period shows that each individual has to rely on 1) his/her own revenue gained during the working time and 2) an interest or dividend from the principal. This is consistent with the changing of age structure of the Thai population which the average tends to be higher, or so called aging society [8], [11]. Evidences from the findings announce the savings or investments form in 12 patterns that every household has savings through 1) Deposit in commercial banks because they are aware of its being low-risk and the service is convenient to access; yet, it gives a low return. 2) The Government Saving Bank Lottery, 3) Real estate, 4) Life Insurance

Policy of which the benefit also reduces tax in time savings, 5) Investment in gold bullion and jewelry. The interesting points for this topic are, lower than 50 percent of the investors managed their saving by 6) Investment in Common Stock in The Stock Exchange of Thailand, 7) Deposit with the Cooperative, 8) Government bonds, 9) Equity Fund, 10) Mutual Fund, 11) Bill of Exchange from Commercial Bank and 12) Corporate bonds. The savings or investment in the latter group provided higher returns (may even be higher than the inflation rate) than the first group but it requires that those savings must be knowledgeable as presented in Figure 6.

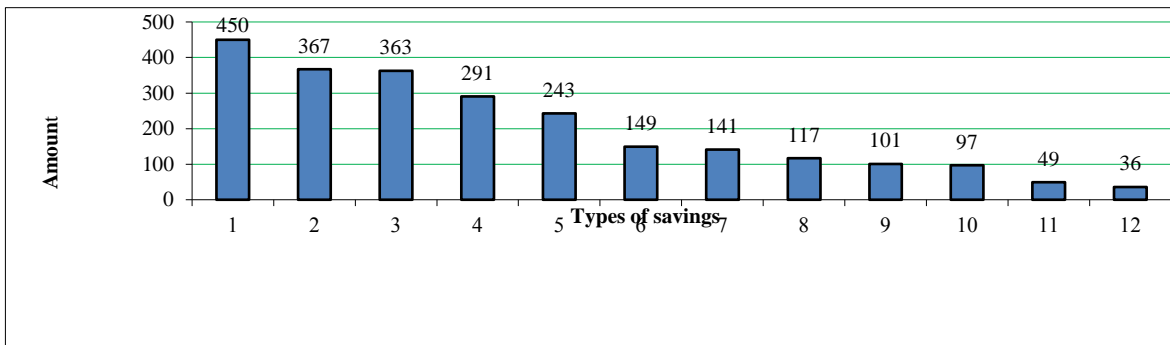


Fig 6. Samut Songkram Household Saving Patterns

For qualitative research technique by an in-depth interview with 18 savers showed their vision that “SAVINGS” was essential for everyone. The highest proportion of savings was distributed to deposit in commercial bank, invest in life insurance policies and deposit in their office saving co-operation. As for the high revenue household or the new family, they allocated the investment in the property or real estate and sometimes in jewelry or the bullion.

The savers or investors realized that savings is necessary for a better quality of life both at the present time and in the retirement period. They planned and created a strategy for their savings and expenses. For those who received pension, they would have confidence for their life in the different way than the private employer or the business owner who would invest their income conservatively in order to receive the benefit over the inflation rate [12]. Even better, some behaviors needed changing such as gambling, having an improper diet, drinking alcohol, frequently eating out, along with overly spending for non-essential goods and services. The important sources of information preparing for smart saving in the AEC period came from family, public agencies and internet [9], [10], [18]. The main goal is to let everybody involve in and thoroughly have them experience the most out of the development. Hence, it can be said that, living in accordance with the philosophy of sustainable economy is one approach leading to a real strong community as people are always reminded of a cautious life: our home our country, stronger together as presented in Figure 7.



Fig 7. Thailand Motto

According to these results, the approach to saving in Samut Songkram, applying the concept of sustainable economy found that once the community has developed up to indicate where people were given an opportunity to work and get enough revenue to make a living, the people themselves should emotionally be mature, become forward-thinking or vision, and have a responsibility towards the society. In addition, they must share a common value, a tradition, and an identity, in order to make them feel belong to the community. The people will have an awareness of preserving such manners inherited from prior generations and prior period. Moreover, they will organize a network to share ideas, create a funding plan, and solve problems when necessary, all of which help to strengthen the community. Eventually, a unity will be achieved leading to an ideal peacefulness. It can be said that, a strong economic community is highly capable of dealing with difficulties by itself applying a local knowledge and its social network as major resources. Finally, this type of community tends to be self-reliant in most aspects, depending on others only for a compliment.

## CONCLUSION

Saving Potential for Thailand Economic Stability was studied and major conclusions as follows:

1. Stock Exchange of Thailand Board must improve the capital market system rapidly to give the higher yield and control the lower risk from investing in financial assets at the same time. Ministry of Finance, Bank of Thailand and commercial bank must also work together in the theme of strong information. Convenient channels must provide for the investors. Finally, in the AEC 2016, everyone should save or invest for higher benefits than every year inflation rate.

2. Government should encourage savers to save their revenue in order to flow saving cash to the financial market both money market and capital market; this helps decrease the fluctuation from the foreign fund by giving knowledge and information to increase the volume of Thai baht currency circulation in Thailand economic.

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# Problems of Transferring Arabic Homonymous lexical verbs

**into** English: A Semantic Study

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## ABSTRACT

Homonymy is usually viewed as a term used in semantic analysis to refer to lexical items which have the same form but differ in meaning. i. e, the un-relatedness of sense of a word that have the same phonological shape. There are many sources of English homonymy such as sound change, semantic change, coincidence, foreign influence, euphemism and ellipsis Homonymy could be absolute or partial. There are many differences between English and Arabic analysis in dealing with homonymy. This study will tackle the problems of transferring all aspects as a comparative study when comparing two or more languages. This study will deal also with the problems of lexical and inflectional relatedness. All these difficulties may create a problem in political register.

**Keywords:** Transferring Arabic Homonymous, Homonymy

## INTRODUCTION

### 1. Homonymy:

#### 1.1 The concept of homonymy:

Homonymy is usually viewed as a counterpart of polysemy various dictionaries and scholars offer different definitions.

"Theoretically a word has an infinite number of meanings since the number of the referents is infinite .the reference; however falls into semantic classes.if meaning are extended beyond the class, while retaining the same reference or name, homonymy results. This definition is in fact a quiet vague; it doesn't tell how different the classes are, nor does it define these classes

Crystal (1985:105) says:"[ A homonymy is] A term used in semantic analysis to refer to lexical items which have the same form but differ in meaning" . Similarly, palmer (1981:67) defines it as follows:"there are several words with the same shape". Lyons (1981:146) puts a similar definition when he says:"different words (i.e. Lexemes) with the same form".Moor (2000:9) also defines it in terms of difference "homonyms are different lexemes without the same form"

It is noticeable in these four definitions that they do not specify whether the form is oral or written, nor do they tell how different the meanings are.

Here scholars differ in specifying the form Hartmann and Stork (1972:75) restrict the form and say that:

" A Homonym is One of two or more words which are identical in sound , but different in meaning e.g. flour, flower .if they are also identical in spelling they may be called homographs e.g. rest 'reminder' and rest 'relax'."

Others like (Leech 1974:228 -30) however, extend the form to spelling as well and define homonymy as: roughly two or more words having the same punctuation and /or spelling"

The other remark goes to the degree of difference in meaning: the borderline between polysemy and homonymy is whether the various meanings are related or not. This is a clear from his statement when he says:

"The distinction between Homonymy and Polysemy is unrelatedness vs. relatedness of meaning"(Leech, 1974:228:30).

Saeed (1997:63)points out that:

(Homonyms are unrelated senses of the same phonological word."

Similarly, Pustejovsky as (1995 29) talks about unrelatedness of meaning, defining homonymy as a situation "where a lexical item accidentally carries two distinct and unrelated meanings."

All in all, homonym may be defined in this thesis as unrelated ness of senses of a word that has the same phonological shape. Grammatically, it may or may not have the same spelling.

The problem with this definition is that the borderline between polysemy and homonymy is not always as definite as it may seem at first polysemy sight: Hence Sigar(1999:24) claims that" ..an operational distinction between homonymy and polysemy is lacking...

Accordingly, this distinction sometimes suffers from haphazardness and subjectivity.

After this brief account of the term homonymy, we may define it as two or more lexemes which have the same form and or pronunciation, but different unrelated meanings and different dictionary entries

## 1.2. Sources of Homonym

Sigar (1999:20-3) lists eight probable sources of English homonymy:

### 1.2.1 Sound Change

As Bloomfield (1933), potter (1960) and Ullmann (1962) say, sound change may accidentally lead to homonymy. The old English words mete and metan changed in modern English into meat and meet respectively, having the same pronunciation, thus becoming homonyms nowadays.

### 1.2.2 Semantic Change

As a rule of thumb, the various meanings of a word begin as polysemy that is they are related to each other in one-way or another. Once this relatedness is lost and one of these meanings splits from the others, it changes into homonymy through divergent sense -development' (Ullmann, 1977:130). For example, the noun flour splits in modern English into two unrelated meanings and this split was magnified by two different spellings: the original spelling, flour was reserved to "finely ground seed of a cereal" and a second form of spelling, flower appeared for the other meaning "bloom". (For further details see Waldron (1967:56), Shunnaq (1993:95) and Younis (2003:57).

### 1.2.3. Coincidence:

Two words may become homonyms by coincidence through mere sound change. The two words yearn "to desire" and yearn "to mourn" happened to be identical in pronunciation in spite of the unrelated ness in their meanings.

It seems that Sigar has unnecessarily put coincidence as a special factor. He could have embedded it within the first factor i. e., sound change.

### 1.2.4. Foreign Influence:

A loan word may happen to have the same phonological shape or the same spelling as a native one:

Gate entrance' (from Old English geut)

gate road street' (from Old Norse gata)

Ullmann (1962: 180) gives another example mail, male. He exemplifies how this foreign influence takes place as follows:

When a loan- word becomes firmly established in its new surrounding it will be adapted to the local phonetic system and will henceforth take part in the normal sound change; it may thus come to coincide with other words in the receiving language.

### 1.2.5. Partial Differences:

Various dialects may result in establishing homonyms in the language: "corn" means a plant grain in British English and "maize" in American English.

Register differences play their role as well in resulting in homonymy: morphology in geography and linguistics has two unrelated meanings.

### 1.2.6. Zero derivation:

A word may be derived from another as a different part of speech. The noun 'catch' has been derived from the verb 'catches' by a zero morpheme.

Among other things, the verb means 'to hold'. The derived noun means a hidden difficulty or disadvantage', which is not related to the verb in any sense.

### 1.2.7. Euphemism:

A certain word may be used to refer to another thing in a metaphorical way. The word bull can refer to the animal, and can refer as well to an official order from the Pope (For further details, see (Ali, 1996:23 and Al-Huraithi 2002:4)

### 1.2.8. Ellipsis:

Ellipsis may give rise to homonymy in English Allan (1986:152) claims that ellipsis of the end rhymes in rhyming slang often results in homonyms. For example, China "crocker" and China mate from China plate.

## 1.3. Kinds of Homonymy:

### 1.3.1. Absolute Homonymy:

Lyons (1977:560) sets three conditions for absolute homonymy:

Lexemic Distinctness, syntactic Equivalence and Formal Identity.

It is natural for every lexeme to have its own uniqueness and in this way to distinguish itself from all other lexemes in the language.

Syntactic equivalence means that two forms belong to the same part of speech: "no two lexemes can be absolutely homonymous if they are members of different parts of speech.

The criterion of parts of speech is not a final one: the same part of speech can have various stylistic shades. The example, which Lyons (1977:560) gives here, is the nouns port 1 (harbour) and port 2 (a kind of wine).

The fact that port 1 is countable and that port 2 is a mass noun may question the validity of the conclusion that they belong to absolute homonymy simply because they belong to the same part of speech.

The third condition, formal identity, has its own dimensions. Two forms may be identical in sound and/or in writing. An example of homography is read, read read in which these three tokens are spelt identically.

The verbs sow and sew exemplify homophony.

On the other hand, the tokens can 1 (be able) and can 2 (put into a can) are homonyms both homophonically and homographically.

From this, one may conclude that homophony and homography are just relations between lexemes which are of course distinct by themselves.

### 1.3.2. Partial Homonymy:

Homonymy results when one or more of these three conditions are not satisfied. Formal identity can be partial if there are minor formal variations. Example:

The auxiliary can 1 is associated with the paradigm (can, could), can 2 with (can, cans) and can 3 with (can, cans, canning, canned), Lyons (1977: 561)

Homonymy can also be partial from the syntactic point of view. found as the past form of find and found as an infinitive. Partial homonymy includes, however, two types: homophony and homography.

## 2. Homophony:

It simply means that two or more homonyms have the same pronunciation like: night and knight can and sun Ullmann (1957: 133)

Homophony is partial if pronunciation is not exactly the same. Example read, read, read. One may notice that homophones belong either to the same part of speech piece and peace or to different parts of speech sea and see.

Homophony is in fact a type of homonymy because of its phonetic homophones as "two forms, which are identical in sound, but different in origin and meaning". He does not clarify; however, what is meant by

origin'. To avoid this vagueness, Fromkin and Rodman (1983:169), Pyles (1971:4) and Crystal (1985:149) restrict the difference to meaning only.

### 3. Homography:

Homonymy is homographic if the two lexemes are identical in writing. Homography is absolute if both lexemes are spelt exactly in the same way: lead, and lead, and wind, and winds. Homography is partial if the two lexemes are spelt almost in the same way: put and putt.

Moreover, homographs can be distinguished either by stress or by voicing. The two lexemes subject as a noun and subject as a verb are distinguished by stress only. Similarly, house as a noun and house as a verb are distinguished by voicing only (Sisar, 1999: 20). As he did in homophony, Potter (1960: 59) defines homophony as words that are identical in spelling, but different in sound, origin and meaning. As a matter of fact each other (For further detail, see Su, 1994:75).

### 4. Polysemy vs. Homonymy:

Polysemy and Homonymy are considered as two types of multiplicity of meaning. The distinction between them is not always feasible. This is what made some linguists pessimistic about drawing a clear cut line between them. Hurford and Heasley (24) claim that "in practice it is impossible to draw a clear line between homonymy and polysemy. Other scholars have been more optimistic about it: "The difference between homonymy and polysemy is easier to explain in general terms than it is to define in terms of objective and operationally satisfactory criteria." (Lyons 1977:550)

This optimism encouraged some scholars to look for concrete distinctions between them and with this search started disagreements among them

Etymology has been chosen as a criterion. (Lyons, 1977: 551) for example, holds the view that two lexemes are homonyms if they "have developed from what were formally distinct lexemes in some earlier stage of the language.

The example he sets is ear1 (organ of hearing) and ear2 (part of a plant) are considered homonyms only because these two words were formally distinct in old English. However, Lyons immediately criticized this criterion because it is not always decisive: the written words are not always exact. Moreover, many people are not familiar with the etymological forms of modern words Leech (1981:228). Similarly, Leech takes history as a probable criterion. He says, "two meanings are historically related if they can be traced back to the same source, or if the one meaning is derived from the other".

This criterion suffers in fact from the same disease: many people are not familiar with the linguistic change throughout history.

Another possible criterion is sound change: two words are homonyms if they are phonologically identical as a result of a certain sound change but still not identical in spelling. Earlier, the example of meat and meet was mentioned. Again, this criterion is not always clear because of the unfamiliarity of many people with sound and spelling throughout history.

A third criterion is a comparative one which compares two or more languages. If a language has two words which counterpart a single word in another, this word in the second language is homonymically treated. The example here is the German word *fraw* which counterparts woman and wife in English. So, the two meanings of *fraw* are homonymous.

Weinreich (1964) suggests a further criterion i.e. the componential analysis (C.A) "We have polysemy' if two identical lexical items share at least one semantic feature, and homonymy, if they do not have any semantic feature in common" (Al-Hadithi, 2002, 44) This criterion is not very popular probably because of the haphazardness of its analysis as to the number of the semantic feature it stipulates: Why one feature only? Besides, a semantic feature is sometimes common for one analyst and, but not by another.

Lyons (1963, cited in Lehrer, 1974:8) depends on the classification of the words into parts of speech as a criterion for this distinction: if two suspected words belong to the same part of speech, they are polysemous otherwise, they are homonyms. Thus, book in (1) occurs as a noun and in (2) as a verb

1-This is my book.

2- I may book a seat today.

So they are homonyms. Contrariwise, *em* means: 'with no people or things inside' and *unhappy* are polysemous because both of them are adjectives. This criterion does not seem to be quite convincing because

the difference, between two lexemes belonging to the same part of speech is sometimes sharper than the difference between two lexemes belonging to two different parts of speech.

Lastly, relatedness of meaning is perhaps the most reliable criterion, which is a relevant and important consideration" (Lyons, 1977: 551) Hurford and Heasley (1983:123) depend on the closeness of meaning: "in the case of homonymy, the different senses are far apart from each other, in any way, whereas in the case of polysemy the different senses are closely related to each other."

For Lyons, (1977) this criterion "seems to correlate with the native speakers feeling that certain meaning are connected that others are not". He sets 'mouth as a suitable example of a word with various related meanings

3. The mouth of the river

4. The mouth of the bottle

However, Lyons finds some problems even in this convincing distinction. This relatedness of meaning for him is sometimes a matter of degree only because there is no universal distinction here. The relationship between an ear of corn and the human ear is viewed polysemy by some people who see a certain type of connection between them. Others do not find any connection between them. Our judgment, therefore, is sometimes intuitively determined.

Lyons (1977) then suggests two ways of circumventing the issue of the distinction between polysemy and homonymy. One can maximize homonymy by considering all the meanings of a certain lexeme as separate ones. In this way we can increase the cases of homonymy in the language. The drawback of this maximizing is the duplication of the phonological and grammatical information in the dictionaries. So, if we consider the four main meanings of bachelor we will say it four times in the dictionary that this lexeme is a countable noun which is morphologically regular, hence, this is considerable redundancy in the dictionary. Moreover, this tendency of maximization would lead us sometimes to indefinite multiplicity. Lyons's example here is "the mouth of the river" and "the mouth of the jar shall we call them two homonyms if we stick to this maximization principle.

To solve the problem of inflectional relatedness like write, Lyons identifies two types: lexical and inflectional. Lexical identity is realized between two words. "if they share the same lexical component" Lyons, 1977: 556). Similarly, two words are inflectionally identical if they are inflectionally the same: "development" and "government", for example, are only inflectionally identical.

The other way is to maximize polysemy. The advantage of this way is minimizing the dictionary entries. It assumes that homonymy is usually partial as long as the two lexemes are formally and syntactically equivalent; however, this technique will specify the lexical difference in the dictionary.

Some linguists are however sensitive about maximizing polysemy because according to them the formalization of the notion of relatedness of meaning is not easily grasped as the decision whether two words are lexically identical or they are a matter of intuitive judgments.

For all these reasons and because of the absence of clear borderlines between polysemy and homonymy some people would rather talk about multiplicity of meaning as the comprehensive area, which combines both polysemy and homonymy. They think that distinction between them is somehow quantitative rather than qualitative.

##### 5. The Role of Polysemy and Homonymy in Language:

The role of both polysemy and homonymy is natural and indispensable in all languages. Without polysemy, a language would be too mathematically formalized and it would lose its natural flavor. Polysemy in fact expands the expressiveness of language and enables the speakers to speak both literally and metaphorically.

Homonymy, on the other hand, is more needed for puns and rhymes. Many scholars including Ullmann (1957) claim that polysemy is more familiar than homonymy in languages in general. The explanation is that whenever there is a semantic clash between two words, one word, which carries the literal meaning, should be chosen.

With respect to literary translation, both polysemy and homonymy can create special difficulties. They cause some problem in political register in particular, where there is a mistake in translating a certain text it may come up with political misunderstanding. Hence, the translator has the right to select the right sense among others.

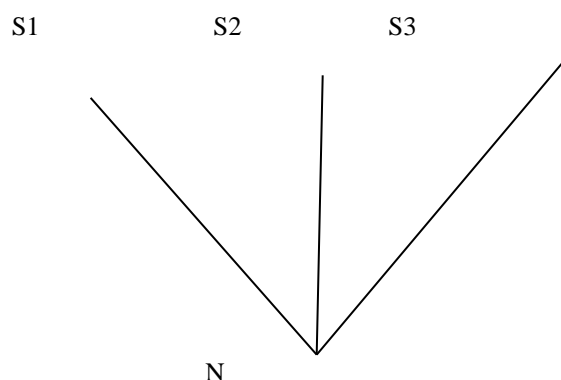
## 6. Meaning and Multiplicity of Meaning:

### 6.1. Lexemes of Multiple Meaning:

Theoretically, a word is supposed to be referring to one thing only. A thing outside language is supposed to be referred to by one word only. This is what happens in the traffic system, for example: the red colour refers to the notion of stopping. Stop is referred to by the red colour. This is what Ullmann (1962) called "one name- one sense." But this is not what happens in actual languages. A human language is natural and develops by itself without the interference of its user.

This naturalness results in having one word in the previous example of batchler. More than one word, on the other hand, can refer to the same concept: quick, rapid, swift,

The result is that no human language appears without these two features: polysemy and homonymy Ullmann (1962) illustrates this through this figure:



"N" refers to the number of multiple meanings a word has and 's' to its various senses. To use the Saussurian term, multiplicity of meaning results from the discrepancy between significant (signifier) and signifie (signified). It is normal in language that this discrepancy replaces the general idealistic principle that every signifier denotes one sense only and that every signified is referred to by one signifier only. So, the phenomenon of multiplicity of meaning is essential for producing and comprehending the language. A native speaker of any language can easily handle this multiplicity in the actual use of language. However, he may not always handle it properly, as he may confuse them by interpreting a word or a sentence incorrectly:

All normal humans can produce and understand any number of new words and sentences. Human beings use the multiple option of language often without thinking. But blindly, they sometimes fall into its trap. They are like spiders who exploit their webs, but themselves get caught in the sticky strands. (Aitcheson, 1996: 94, cited in Kearns, 2000)

This confusion is perhaps doubled for the translator, as he is responsible for both recognition and production. He should grasp the correct meaning in the Source Text, depending mainly on the context, which generally enables him to understand the statement correctly in spite of the presence of the two features polysemy and homonymy in it. On the other hand, he should be efficient enough to carry over these two features to the Target Text. He should also avoid creating homonymy unnecessarily by attempting to be as clear and as transparent as possible in rendering the source text into the target language.

Like English, Arabic is also rich in polysemy and homonymy. Arab scholars however, focus on the phenomenon of multiplicity of meaning in genera which includes in addition to polysemy and homonymy a sub-set, which is almost absent in English:(the bi-opposite-meaning lexeme) i e., a word having two opposite meanings such as:

الصرير (night-day)  
البصير (blind-endowed with eyesight)  
السليم (safe- stung by a scorpion)

Concerning polysemy and homonymy they have got the same distinction in Arabic as they have in English. The borderline in Arabic is as vague as it is in English. Among the Arab linguists who tackled this dichotomy are Al-Asyoti(1958),shaheen (1980).

The major difference between English and Arabic analysis is that Arabs do not maximize the distinction between polysemy and homonymy as the English scholars do. Instead, they generally talk about polysemy as a phenomenon of single lexemes, i.e., a word having more than one meaning.

Homonymy for them means two words that are formally identical. Recently, however, the European influence pushed Arab linguists to pay more attention to the distinction between these two phenomena. Aziz (1997:44), for example, counterparts جناس with homonymy and تفرع المعنى for polysemy. It is here that تفرع does not convey the exact meaning of clear polysemy. The term تعدد may be nearer to the English concept. Apart from these details multiplicity of meaning is defined by different people in almost the same way. Al-Antaki (1969:388) for example, defines this multiplicity as a word with more than one meaning. It is evident here that Al-Antaki does not pay attention to whether this multiplicity results in polysemy or homonymy.

It is possible, of course, to find in Arabic many examples of these two dimensions of meaning. These are examples of polysemy:

باب (the entrance of a room, the abstract introduction to something like: وللحربة الحمراء باب)

قدم (human foot, the mountain base)

العبور (passing an exam, crossing a road)

سيارة (a motor car, people walking)

"قال قائل منهم لا تقتلوا يوسف والقوه في غيبت الجب ليلتقطه بعض السيارة ان كنتم فاعلين"

(يوسف 10)

"وجاءت سيارة فأرسلوا واردهم فأدلى بدلوه قال يا بشرى هذا غلام وأسروه بضعة والله عليم بما يعملون"

(يوسف 19)

Homonymy, on the other hand, may exemplified as follows:

الخال (uncle, beauty spot)

سنجق (province or district, flag banner)

سلوى (pitcher plant, consolation)

حناط (wheat seller, embalmer)

## 7. Ambiguity:

### 7.1. The concept of Ambiguity:

Ambiguity is a natural feature that exist in all languages .

Stylistically, it varies in degree from one domain to another . it simply means a state of having more than one possible meaning. This state can be due to the presence of a certain word in the sentence itself. In Moore's (2000:4) words "ambiguity occurs when a language element has more than one meaning ' similarly , Crystal (1985:23) says that ambiguity occurs

1.1 go for a run every morning.

2. The tail end batsmen added a single run before lunch.

3. The ball player hit a home run.

Saeed says these various meanings of run denote ambiguity if each expresses a different sense. If they share the same sense, "then run is merely vague between these different uses (Saeed, 1997: 61). Saeed; however, distinguishes between vagueness and ambiguity.

The context in the examples of vagueness "can add information that is not specified in the sense, but in the examples of ambiguity the context will cause one of the senses to be selected (Saeed, 1997:61)

Let us have other examples. The lexeme 'العصر' in the Qur'anic verse

"والعصر ان الانسان لفي خسر, إلا الذين امنوا وعملوا الصالحات وتواصوا بالحق وتواصوا بالصبر"  
(سورة العصر 1-3)

May denote the following senses:

- 1- Afternoon.
- 2- Time (in the general sense).
- 3- Age (or era).
- 4- The afternoon payers
- 5-

(Cited in Ilyas, 1981:174)

This lexeme poses problem for translators. Let us consider the following renderings by different translators from different cultures:

- 1-Sale (1877) (By the afternoon
- 2-Rodwell (1978) swear by the declining day).

Unjustifiable. Pitkthall's cultural translation seems to be in accordance with one of the interpretations suggested by Zamakhshari and/ or Tabari (cited in Ilyas, 1981:82).

One may come to the conclusion that because exegetes' expositions are different; therefore, different renderings have been given. Taking the relatedness criterion into consideration, one can say that this word is "a homonym but taking the dictionary entry, one can consider it as a polysemous word for the translator. As a result, different renderings have been given.

#### 8. The Role of Context in Resolving Ambiguity:

The role of context in resolving ambiguity has not received a unanimous agreement. Katz and Fodor (1963 cited in Palmer, 1981:47-51) do not stipulate contextualization as a prerequisite for determining meaning. According to them, meaning can be taken in its core structure by itself.

Context then steps forward to add its connotative flavour. Moreover, Lyons (1977:610) does not find context helpful in exploring the meaning of non-deictic terms. He claims that "it is not clear how non- deictic reference..... would be handled by means of the Firthian notion of function in context." Besides, denotation, according to Lyons, does not need context to specify its shades. Besides, Newmark (1988a:165) does not find context a permanent help in meaning specification. De Waard and function in context." Besides, denotation, according to Lyons, does not need context to specify its shades. Besides, Newmark (1988a:165) does not find context a permanent help in meaning specification. De Waard and Nida (1986:140) adopt a more moderate view concerning the importance of context to meaning specification: "the literal or unmarked meaning of a lexical unit should be assumed correct unless the context points to some other meaning.

Ullmann (1962:48-9) also argues that some words have their own inherent meanings, for which context can not offer any help. It seems that these linguists minimize the role of context and maximize the role of context.

Contrariwise the British linguist, Firth, following the well-known anthropologist Malinowski (Firth, 1957) stressed reliance on contextualization in determining meaning. His view has been quite influential till this moment: "every utterance occurs in a culturally determined context-of-situation." (Firth, cited in Lyons, 1977:225).

Firth, in fact, expands his functional concept of context from language to culture, holding that language is just part of culture, and that what is essential to language is finally essential to culture.

By 'contextualization' Firth means, what the linguist does in describing a language" (Lyons, 1977:615) and (Palmer, 1981:56). Lyons however, uses this term in two ways: how the layman uses the language and how



the linguist uses it. Hence, his statement: what the native speaker does in the use of language and what the linguist does in describing the underlying system of elements, rules and principles by virtue of which the native speaker is able to create (and interpret) what Halliday (1985) and others refer to as text".

An utterance meaning is analyzed only through a serial contextualization of our facts, context within context, each one being a function, an organ of the bigger context and all contexts finding a place in what might be called the context of culture." (Firth, 1957:32).

Following Firth, various scholars stressed the importance of context. Lyons (1977:410) takes the extreme sides and says "it is often impossible to give the meaning of a word without putting it in a context.

Others also find that determining meaning depends completely on context. West (1975:151), for example, says, "the meaning of a word or expression is very much a matter of context". Similarly, Beirwisch (1970:183) holds the view that the semantic interpretation of a given sentence depends on the particular linguistic or extra-linguistic context in which it occurs. Similarly, Verschueren (1998:142) finds context as the main factor that resolves ambiguity whether lexical, syntactic or cultural.

Context is usually classified into two types: "linguistic and non- linguistic". The linguistic context or co-text usually refers to sentential relations that help clarifying what is vague or ambiguous. It is defined by Yule (1985:98-9) as the "set of other words used in the same phrase or sentence." A familiar example is:

1. I went to the bank.

The meaning of bank can be clarified by adding a phrase like "to cash some money.

It seems that Yule is not quite exact in stipulating that such additions appear in the same sentence:

2. I went to the bank. I was in need of some money.

The other type is the non-linguistic context or context of situation which means "all aspects of the situation in which a language event takes place." (Palmer, 1981:54 and Kearns 2000:92).

Malinowski (1923 quoted in verschueren, 1998:93) defines this type of context as follows: "the utterance has no meaning except in the context of situation. "Similarly , Firth(1957:7) holds the view that " the complete meaning of a word is always contextual and no study of meaning apart from a complete context can be taken seriously".

If we go back to the word "bank' context of situation or the physical context as Yule (1985:89) and others call it appears when we find a word 'bank' as a building.

This non-linguistic context is in fact helpful in specifying the meaning and resolving ambiguity.

On the other hand, Kearns (2000:267) classifies contexts into external and internal ones. By internal context he means: "the hearer's current knowledge, beliefs, assumptions, hypotheses, cultural and social conventions, in the form of mental representations of propositions." The external context then is what is created by the speaker or writer to specify the meaning of the utterance.

Context in all its types has been used to disambiguate what is not clear to the reader or hearer and to determine specifically whether a certain sentence or phrase implies polysemy or homonymy. Mey(1993:38), for example, finds context quite useful in disambiguating such sentences.

'Duck', for example, has got various meanings which can be specified only by resorting to the context:

2. The duck is in my room.

This ambiguity is due to polysemy: it either means the "animal" or "the meat of this animal". This word may also appear in such sentences as

3. The duck annoyed her.

where the ambiguity is due to homonymy: it may mean "the animal itself or "the zero scored by someone".

Another example, is the word settle

4. He settled everything.

This ambiguity is polysemous as it means putting an end to a quarrel or arranging things finally. Meanwhile, it may be used homonymously:

5. They settled Bill.

Here, settle can either mean: make bill comfortable in a new position" or "hurt him because of his cheating".

Thus, disambiguation can be arrived at either by linguistic or non- linguistic context.

From what has been said so far, one can say that there are two types of context: (1) linguistic context (co-text) and (2) context of situation as a matter of fact, both of them contribute to resolving the ambiguity wherever it emerges whether it is lexical, syntactic or cultural. Thus, sensitive reader or hearer must resort to linguistic context (co-text) or physical context (context) in order to understand the expression in question so that communication would continue.

Otherwise, there will be no communication, and hence, a translator will be unable to convey the message from the SL to TL.

#### 9. Ambiguity, Polysemy, Homonymy and Pun:

Ambiguity results from having more than one meaning. This ambiguity is either intentional or unintentional. If it is not intentional, it is in need of a context that specifies what is meant by it. Ambiguity is intentional mainly in language of literature, such as jokes and puns.

In literature in particular, it is sometimes taken as a sign of creativity as it combines richness and economy. A pun is usually built on the uncertainty obtains from polysemy or homonymy. It has been defined by Redfren (1984:182) as "a figurative use of a word or a phrase". It is, in fact, the humorous use of words with more than one meaning. A familiar example is what the Mouse says to Alice:

1. Mine is a long and sad tale.  
Alice misunderstood the word tale as tail
2. But why do you call it sad  
as she was looking at that tail.

Another example is Pascal's famous maxim:

"Le Coeur a ses raisons que la raison ne connait point. (Ullmann, 1967: 128)

"Where the word 'raison' means both 'mind' and 'reason'. Another French example is the joke that was popular during the days of the French Revolution ma loi" (my law) was homonymous with the deputy's name "Malouet".

3. Malouet est tres juste.
4. Ma loi est tres juste.

Puns are either implicit or explicit (Ullmann, 1962, 190) It is implicit if the concerned word is mentioned once like the example of "tale" above. It is explicit if the concerned word is mentioned twice like the example of "raison" above.

Both types are homonymic: the context immediately suggests two or more unrelated meanings. The wording of pun intentionally tempts the says, "homonymy is a fertile source of puns. Similarly, Pyles (1971: 4) holds the view that "homonyms make up the very stuff and substance of much nursery humor".

From what has been said so far, one can say that these three phenomena (viz, polysemy, homonymy and pun) are ambiguous. They are interrelated, and there is no clear- cut borderline between them. A sensitive reader or hearer is needed in order to understand them.

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# THE DISCOURSE OF THAI IDENTITIES IN LOTTERY RITUALS

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## ABSTRACT

This paper will use the theoretical concepts of ‘intertextuality’, ‘interdiscursivity’ to analyze various media texts on lottery rituals written in Thai and English. The aims of the paper are, first, to analyze the role that intertextual references play in the construction of the identity of the community of lottery rituals. Second, the paper investigates the semiotic resources of the visual and linguistic mode by tracing how previous discourses and texts about lottery rituals move across discursive spaces (international and local communication). The findings suggest that interdiscursivity indicates that discourses can be linked to discourses on other topics; intertextuality refers to the link to other texts through invoking a topic of the lottery, an event or a main actor (e.g. believers and authors) that are cultural specifics and the speakers from various texts (different voices) invoke some specific intentions or genres, such as the informative or persuasive role. In addition, the lottery rituals link the discourses to the religious realm or belief system and to present the practice and narratives within Thai context to be widely discussed.

**KEYWORDS:** Thai identities. Discourse on lottery rituals. Intertextuality and interdiscursivity.

# REALISATION OF THE RIGHT TO WATER RURAL COMMUNITIES THROUGH AFFIRMATIVE ACTION ON WATER SERVICE DELIVERY IN SOUTH AFRICA

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## ABSTRACT

Historically, there were enormous differences and inequalities with regard to service delivery in South Africa. Traceable to the apartheid period, these inequalities included, inter alia, supply of inadequate and safe drinking water for black communities in particular those at rural areas. Yet, water is an essential necessity for human beings, regardless of race, disability and social status. As a legislative measure to redress the injustices of the apartheid regime, the right to water is entrenched in Section 27 of the South African Constitution of 1996. Also, several legal instruments such as the National Water Act of 1998 and the Water Service Act of 1997 were enacted to uphold the human right to water. The Constitution bestowed the responsibility of water supply and management to the national, provincial and the local government. Despite its inadequacy, the South African government is addressing the water needs of the most impoverished communities by guaranteeing each household a free minimum quantity of potable water of 25 litres per person per day or 6 kiloliters per household per month. Any person who needs more will come under privatisation model which key provisions on the existing law favors.

About 38.4% of the population of South Africa who reside in rural communities are poor and mostly affected by inadequate water service delivery in that they cannot afford payment for water in excess of the minimum for which no fees is charged. As a concept, affirmative action is generally used in the context of work places to ensure that qualified marginalized groups have equal opportunities to get a job, but it is not yet investigated in the context of water service delivery. This study aims at assessing laws governing water service delivery and exploring how affirmative action can be used as an instrument to ensure the delivery of potable water to rural population in South Africa.

**Key words:** Affirmative Action, Right to Water, Privatisation, Rural Communities, Water Service Delivery.

# ENGLISH AS A COMPULSORY SUBJECT AT THE ELEMENTARY LEVEL IN TAIWAN: EFL TEACHERS' REFLECTIONS

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## ABSTRACT

Due in large part to the trends toward economic globalization, English has become the most widely disseminated and ubiquitous international language. The purpose of this study was to investigate what Taiwan's EFL teachers at the elementary level believe about the policy of English as a compulsory subject and its positive and negative impacts on classroom instruction. Ten elementary English teachers in Tainan City and its surrounding suburbs agreed to participate in the study. Data were collected through teacher interviews, classroom observation, and document analysis. Results found that while they observed both positive and negative sides of the top-down policy, all ten teachers supported the government's policy and agreed that multiple factors contribute to the success of EFL teaching and learning. The teachers claimed that the major impact of the policy on instruction is the need to help grade-five students prepare for the proficiency test provided by Tainan's local educational bureau, which leads to teachers struggling with tension between their personal beliefs and the workplace reality.

**Keywords:** foreign language policy, teacher reflections, second language acquisition, English language, language planning, elementary education, foreign countries

# **EFL HIGH SCHOOL TEACHERS' INTERCULTURAL SENSITIVITY AND THEIR BELIEFS ABOUT INTERCULTURAL LEARNING**

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## **ABSTRACT**

English language is being used as the medium of communication in a wide variety of international and intercultural settings. This implies that English language teaching should help students develop linguistic skills to communicate and enhance intercultural understanding, which has placed a new demand on teachers. The purposes of the study are to develop an understanding of Taiwanese English language teachers' (1) levels of intercultural sensitivity and its relation to their willingness to teach intercultural dimensions; (2) beliefs about English as a Foreign Language (EFL) and intercultural learning; and (3) difficulties they face in incorporating intercultural learning into their teaching practices. Data were collected by teacher questionnaire surveys and interviews. Fifty EFL high school teachers in Tainan City participated in this study, 25 of which agreed to participate in interviews and be observed in their classrooms. Results found that these teachers have a high level of intercultural sensitivity and willingness to achieve intercultural learning objectives. But in reality, teachers rely heavily on textbooks for their teaching and devote most of their time to language teaching rather than cultural teaching.

# **A DIFFERENT WAY TO BE WHITE: VALUING DIVERSITY IN EDUCATION, DEMOCRACY, AND TRUMP'S AMERICA**

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## **ABSTRACT**

Critical race theory pre-supposes that a societal tool as profitable and valuable as racism will never die. I disagree. Having conducted several studies on the development of social consciousness, antiracism, and the impetus for advocacy, I *adamantly* disagree. In my studies of White urban teachers, prominent antiracist White intellectuals, and now a mixed sample of White and minority teacher-activists in the United States, I am hopeful – now more than ever – that even though Donald Trump has just been elected president, racism and all forms of oppression will eventually perish.

In my recent speaking engagements as a diversity and inclusion consultant and professor of minority and urban education, I have witnessed first-hand the incredible anxiety of Americans who are concerned about the rise of Trump, his coordinating xenophobia now known as “trumpism,” and the harrowing effects his presidency will have on US democracy as we know it. Still, I am undeniably elated about the moment his election has created, and the in-our-face collision with the racism, sexism, ageism, ableism, homophobia, Islamophobia, and oppressive intolerance Trump has ushered in.

I contend that Whites, or any member of privileged groups who enjoy some sort of situational status or power, have far more to gain by divesting of such “-isms” than they ever will from espousing them. I offer that in the case of race, Whites have multiple interests in dismantling racism, including the material, emotional, psychological, and moral gains to be enjoyed when they denounce oppression. My work with classroom teachers, teacher educators, and various teacher leaders indicate that while half the nation may have voted to install Trump as president, the other half rejected his rhetoric and used compassion and reason to reject his majoritarian narrative. Trump led a campaign aimed at fictively “marginalizing” Whites and describing their economic, racial, and seeming plight. Still, many White, straight, male, Christian, able-bodied people were able to more accurately calculate the sum total of his words and deeds, illustrating much hope that people of all identities can reject outright hate and work toward social justice.

This presentation will—using memes, visuals, popular culture snapshots, and social media images—highlight the current state of race, class, gender, and identity in the United States with a lens toward moments of solidarity, defiance, and alliance. Although fully half the nation has voted for a blatant xenophobe, there are countless citizens who continue to believe in and uphold notions of democracy that are inclusive, affirming of diversity, unoppressive, and firmly true to America’s “common good” ideals.

Session-goers will be encouraged to consider their own spheres of influence, moments of co-optation, capabilities for institutional infiltration, and positions of power from which they can serve as advocates, allies, and agents of change in their respective countries. Social, pedagogical, and policy implications will be also be shared, as commonalities across multiple international contexts will unify participants and address the wider, global struggle for social justice.



# **EMPLOYEES' PARTICIPATION IN CORPORATE SOCIAL RESPONSIBILITY OF THE ELECTRICITY GENERATING AUTHORITY OF THAILAND**

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## **ABSTRACT**

The objectives of this research were to study 1) The level of participation in the social responsibility of the Electricity Generating Authority of Thailand. 2) The level social responsibility of the Electricity Generating Authority of Thailand. 3) The relationship between participation in the social responsibility of the Electricity Generating Authority of Thailand with the social responsibility of the Electricity Generating Authority of Thailand. The Methodology: Participants were 400 employees in the Electricity Generating Authority of Thailand. The research instrument used for data collection was a questionnaire. The statistical procedures employed included frequency, percentage, mean, standard deviation, and test hypotheses using correlation coefficient Pearson's Product Moment Correlation Coefficient. The results indicated that 1) The relationship between participation in the social responsibility of the Electricity Generating Authority of Thailand with the social responsibility of the Electricity Generating Authority of Thailand is very low. The level of statistical significance 0.05.

**Keywords**–Participation, Social Responsibility

## **INTRODUCTION**

Nowadays many domestic and international business organizations have focused on Corporate Social Responsibility (CSR). The vitality of CSR is embedded in the agenda of business organizations as important as to maximize profit (Academic Committee to Develop Teaching and Business Research of Thailand, 2003). Many business organizations have brought the topic of CSR to be discussed in areas of friendliness to the environment, without the threats to the local community, and sustainable resources management. Hence, CSR is both beneficial to business organizations and local community & society. In addition, CSR often provides a good image to business organizations to be the good companies and taking care of local community which often results in good business and good profit in the long run (Anantachai Yunpratom, 2000).

Participation is one of the most important factors for driving the social responsibility. The organization leader should allow all level of employees to participate from the process of learning, decision making, and operation which make the employee have ownership sentimental and developing the aims to help both company and society continuously (Nipa Viriyapat, 2000). From many social responsibility works, it found that the high level of participation, the focus from high level of management, and internal communication often resulted in high rate of success in business (Rak-Thai Foundation, 2002).

In order for business organizations to be able to have social activities sustainably, all the social activities must be participated by employees and all level of management. Many studies reported that the problems and obstacles of doing CSR happened from the lack of cooperation of employees in each step. Therefore, it is important to create organization values about the social responsibility and cooperation of good teamwork within business organization to promote the sustainable CSR activities (Pariya Riratanakorn, 2013)

The Electricity Generating Authority of Thailand (EGAT) is the state enterprise of energy under the Ministry of Energy. It was founded in 1968 by the Electricity Generating Act of Thailand. Its main mission was to provide electricity to match with the demand of industry sector and people sector. Their highest mission is to provide the quality energy with reasonable price and focus on the vitality of society, community, and environment in order to create and develop quality of life as well as to be able to compete with international level. The management of the Electricity Generating Authority of Thailand focuses on the prevention and reduction of the impact on community, society, and environment as well as the sustainable development. From the meeting 9/2008, the committee approved the deputy governor of Electricity Generating Authority of Thailand to implement of social responsibility activities according to the concept of CSR strictly (Suwat Thongthankun, 2001). Even though the EGAT is determined to follow the guidelines and plans of the CSR strictly, there are many problems, setbacks, and obstacle as well as the complaints from the local community and society about the negative impacts to the environment and eco-system which in turn have a negative impacts to a peaceful way of life of local community (Office of the Policy and Plan of Natural Environment, 2002). The CSR work of EGAT is under the changing society and changing economy as well as the turmoil of energy prices, and the global warning effects. This means that CSR activities are imperative to the success of the EGAT in order for this business organization to be successful in business and gain high confidence from the customers, stakeholders, local community, and society at large.

### **RESEARCH OBJECTIVES**

To study the relationship between the level of participation in social responsibility of the employees of Electricity Generating Authority of Thailand and the social responsibility of the Electricity Generating Authority of Thailand.

### **RESEARCH HYPOTHESIS**

The level of participation in social responsibility of the employees of Electricity Generating Authority of Thailand has a relationship with the social responsibility of the Electricity Generating Authority of Thailand.

### **SCOPE OF RESEARCH**

This research is the study of level of participation of social responsibility of employees of Electricity Generating Authority of Thailand. There are seven variables of social responsibility which are cooperate governance, human right, labor practice, environment control, fair treatment, consumer issue, and participation of local community. Whereas the variables of participation is the level of participation from the employees of Electricity Generating Authority of Thailand. The population of this study included 22,892 employees of Electricity Generating Authority of Thailand. The four variables of participation from employees of Electricity Generating Authority of Thailand are 1) participation in decision making, 2) participation in operation, 3) participation in benefits, and 4) participation in evaluation. In addition, there are six variables of social responsibilities which are 1) corporate governance, 2) human rights, 3) labor conditions, 4) environment control, 5) fairness treatment, 6) consumer factors, and 7) participation from local community and social development. The research areas cover the head quarter of Electricity Generating Authority of Thailand, Nonthaburi, Thailand.

### **RESEARCH FRAMEWORK**

The researcher utilized the research framework of Cohen & Uphoff (1977) which stated that there were four steps of participation. First is the participation from decision making. Second is the participation from implementation. Third is the participation from the benefits. Finally, fourth is the participation during the

evaluation. Then, the researcher utilized the ISO 26000 to measure the relationship between the participation and the social responsibility of the employees Electricity Generating Authority of Thailand in seven areas which were 1) participation in decision making, 2) participation in operation, 3) participation in benefits, and 4) participation in evaluation. In addition, there are six variables of social responsibilities which are 1) corporate governance, 2) human rights, 3) labor conditions, 4) environment control, 5) fairness treatment, 6) consumer factors, and 7) participation from local community and social development.

## **RESEARCH METHODOLOGY**

The sample group used in the study included 400 employees according to Taro Yamane (1970) with the 95 percent level of confidence. Questionnaire was used as the research tool. The statistics used in this research included percentage, frequency, mean, standard deviation as well as Pearson's Product Moment Correlation Coefficient.

## **RESEARCH FINDINGS**

The demographic findings revealed that the majority of employees, about 77.80 were male with the age of 30-39 years old or about 46.5 percent. The majority had an undergraduate degree or about 90.80 percent, married with about 82 percent, position ranking 4-7 with about 37.5 percent, reported to deputy governor of EGAT with about 34.5 percent, had 6-10 years of experience or about 60.5 percent, and had the monthly average income between 30,001 -40,000 baht or about 40.5 percent.

From the analysis of the participation of the social activities of employees Electricity Generating Authority of Thailand, it was at the medium level with the mean of 3.09. When evaluated each factor, the highest mean was the participation in benefit with the mean of 3.82, the participation in operation was rated at a high level with the mean of 3.71. The lowest mean was 2.29 which was participation in evaluation was rated a low level.

From the test of hypothesis that level of participation in social responsibility of the employees of Electricity Generating Authority of Thailand has a relationship with the social responsibility of the Electricity Generating Authority of Thailand by using Pearson's Product Moment Correlation Coefficient, it found that that level of participation in social responsibility of the employees of Electricity Generating Authority of Thailand has a relationship with the social responsibility of the Electricity Generating Authority of Thailand at a positive level and a low level with statistics significance of the level of 0.05.

## **RESEARCH DISCUSSION**

Since level of participation in social responsibility of the employees of Electricity Generating Authority of Thailand has a relationship with the social responsibility of the Electricity Generating Authority of Thailand at a positive level and a low level with statistics significance of the level of 0.05. This means the employees of EGAT had a participation with social activities with a low level and resulted in the low level of CSR activities. This was concurred with the study of Pariya Rinratanakorn (2008) and Niyom Suwandej (2015) which stated the lack of full participation of employees in many activities of social responsibility of business organization resulted in the low activity of CSR of business organizations. It was imperative to understand that participation is one of the most important factors for driving the social responsibility and the success of CSR in business organization. The top level of management of business organizations should encourage all level of employees to participate from the process of learning, decision making, and operation which make the employee have ownership sentimental and developing the aims to help both company and society continuously and permanently.

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# THE NONLINEAR MODEL OF ALCOHOLISM WITH EFFECT OF AWARENESS PROGRAMS BY MASS MEDIA OF THAILAND

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## ABSTRACT

In this paper, we have developed a nonlinear model of alcoholism. The  $SS_MAM$  model is used to study the alcoholism transmission by considering the effect of mass media in order to understand the dynamic of the disease in Thailand. This dynamical model was constructed by using a standard dynamical modeling method. The stability of the model was determined by using Routh-Hurwitz criteria. The numerical results were shown for supporting the new model. Moreover, the graphical representations were provided to qualitatively support the analytical results. So, we concluded that the mass media is in fact an effective way to prevent and control the spread of alcoholism in Thailand.

**Keywords**--Nonlinear model, Alcoholism, Mass media, Basic reproductive number.

## INTRODUCTION

Alcohol consumption is the major cause of death of global population up to 3.3 million people died per year or around 5.9% of total death in the World. From World Health Organization (WHO, 2014), the figure of alcohol consumption in Thailand is the fifth in the world and the trend of this consumption has climbed up rapidly. In year 1989, the alcohol consumption in Thailand was 20.2 liter per person per year while it increased triple to 58.0 liter per person per year in year 2003. Many countries aware of alcohol drinking especially in the university life because the alcohol consumption can be the Gateway Drugs leading to another drug addiction. (Steinberg, 1996)

The mass media nowadays is a matter that associates with all people lives. It has been accessed from many sources; for example, Television, Internet, Radio, Billboard etc. When people easily to get information anywhere at any time, the media can play important role to form people personality and knowledge. Therefore, it is the effective tool to provide the right information about the Alcoholism in awareness and treatment to prevent widespread and deadly side-effects. There were several researches on investigation of the role of media to infectious diseases. Tchuente et al.(2011), Greenhalgh et al.(2015) and Wongwiwat(2015), the authors studied the effect of awareness programs by media on the spreading of infectious disease and they found that an awareness program has a significant effect on disease control.

The Nonlinear model is very useful tool to understand the spread of infectious diseases. The analytical solution, numerical solution and simulation are ones of various mathematical methods used to analyze the harmful diseases without researching in the real environment that may infect the researchers, Sharma (2013), Kaur et al.(2014), Zuo et al.(2014) and Greenhalgh et al.(2015). Several researches mainly studied on the impact of awareness programs on and infectious diseases outbreak.

In this paper, the new nonlinear model is used to analyze the alcoholism transmission by considering the effect of mass media to understand the dynamic of the disease in Thailand.

## OBJECTIVE

This study is to develop a nonlinear model of alcoholism to investigate the impact of media on the spread and control of infectious diseases.

## METHODOLOGY

### 1. Analysis Model

As the  $SS_MAM$  model, we consider effect of mass media the reduction of transmission level of this disease, then we separated susceptible class to susceptible class have no disease information and susceptible class have disease information. And both classes can be infective class. In this paper, applied the structure of transfer diagram of model system from Kaur(2014) to suitable with the Alcoholism in Thailand. The population assumed that the human population is constant and divided into five compartments as follows:  $S$ ,  $S_M$ ,  $A$  and  $M$  represent the number of susceptible class, Alcoholism class, susceptible class acknowledge from content of media and the cumulative density of the mass media in that region at time  $t$  respectively. The transmission dynamics of the alcoholism in Thailand are described by the compartment diagram, Fig.1.

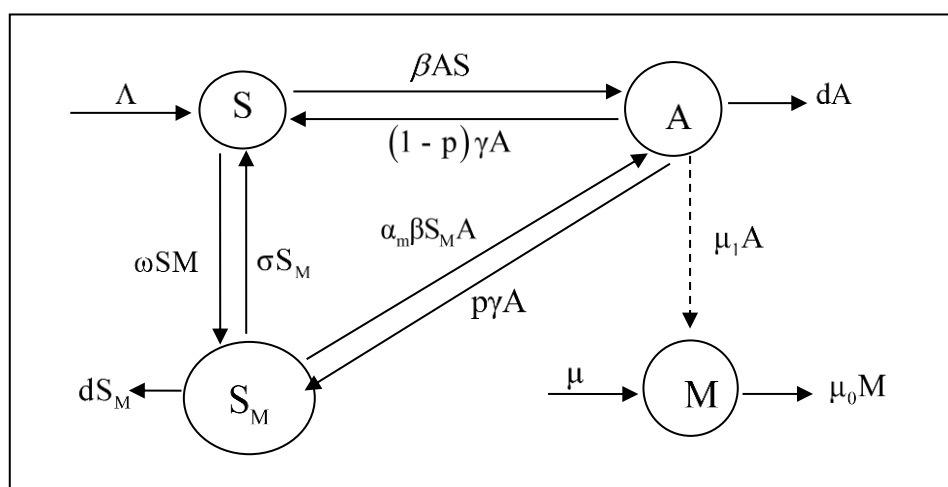


Fig. 1 Conceptual model of the transmission

The transmission dynamics of the alcoholism in Thailand are described by the following systems of nonlinear ordinary differential equations:

$$\frac{dS}{dt} = \Lambda - [\beta A + \omega M + d]S + \sigma S_M + (1-p)\gamma A \quad (1)$$

$$\frac{dS_M}{dt} = \omega SM - (\alpha_m \beta A + \sigma + d)S_M + p\gamma A \quad (2)$$

$$\frac{dA}{dt} = (S + \alpha_m S_M)\beta A - (\gamma + d)A \quad (3)$$

$$\frac{dM}{dt} = \mu + u_1 A - u_0 M \quad (4)$$

Since the population of  $N = S + S_M + A$ ; where  $\Lambda$  is the recruitment rate of human;  $\beta$  is the transmit rate of susceptible,  $d$  is the natural mortality rate,  $\gamma$  is the quitting rate of alcohol drinking  $\sigma$  is the return rate of quitted drinker to consume alcohol again.  $\omega$  is the dissemination rate of awareness among susceptible due to media awareness program,  $\alpha_m$  decreasing rate of educated people becomes alcohol drinker,  $k$  is the rate constant corresponding to regular media coverage,  $\mu$  is the rate constant corresponding to regular media coverage,  $\mu_0$  is the natural decay rate constant of media coverage/awareness programs,  $\mu_1$  is the rate constant influenced by number of infects  $N$  is total population, respectively.

### Step 1: Equilibrium Analysis

To begin with the disease free equilibrium, the endemic equilibrium and the basic reproductive number, respectively.

**1) The disease free equilibrium (DEF) :** The system has two equilibrium points; a disease free equilibrium point and an endemic equilibrium point.

$$E_0(S, S_M, V, I, M) = E_0 \left( \frac{\mu_0 \Lambda}{\omega \mu + \mu_0 (v_1 + d)}, \frac{\omega \mu \mu_0 \Lambda}{\mu_0 (\omega \mu + \mu_0 (v_1 + d)) (v_2 + d)}, \frac{v_1 \mu_0 \Lambda Q_5 + v_2 \omega \mu \mu_0 \Lambda Q_2}{\beta \alpha_M \mu_0 (1 - \delta_M) \mu_0 (v_2 + d) Q_1 Q_2}, 0, \frac{\mu}{\mu_0} \right)$$

#### 2) The endemic equilibrium:

$$E_1 \left( \frac{\mu_0 \Lambda}{[\mu_0 \beta (1 - \delta_M) + \omega \mu_1] I^* + \omega \mu + \mu_0 (v_1 + d)}, \frac{\omega \mu \mu_0 \Lambda + \omega \mu_0 \mu_1 \Lambda I^*}{Q_3 I^* + Q_4 I^* + Q_5}, \frac{Q_6 I^* + Q_7 I^* + Q_8}{(Q_1 I^* + Q_2)(Q_3 I^* + Q_4 I^* + Q_5)}, I^*, \frac{\mu + \mu_1 I^*}{\mu_0} \right)$$

#### 3) The basic reproductive number:

The basic reproductive number obtained by the next generation matrix. By Van(2002) we start with

$$\frac{dX}{dt} = F(x) - V(x)$$

where , F is the matrix of new infectious and V is the matrix of the transfers between the compartments in the infective equations. We obtained

$$F(x) = \begin{bmatrix} 0 \\ 0 \\ 0 \\ \beta(1 - \delta_M)(S + \alpha_M S_M)I + \beta_1 VI \\ 0 \end{bmatrix}, \quad V(x) = \begin{bmatrix} [\beta(1 - \delta_M)I + \lambda M + v_1 + d]S - \Lambda \\ [\beta \alpha_M (1 - \delta_M)I + v_2 + d]S_M - \omega SM \\ (\beta_1 I + \gamma_V + d)V - v_1 S - v_2 S_M \\ (\gamma + \gamma_M + d)I \\ \mu_0 M - \mu - \mu_1 I \end{bmatrix}$$

$$\text{Hence, basic reproductive number } (\mathfrak{R}_0) \text{ is } \mathfrak{R}_0 = \sqrt{\frac{\beta(1 - \delta_M)S + \beta(1 - \delta_M)\alpha_M S_M + \beta_1 V}{\gamma + \gamma_M + d}}$$

### Step 2 : Stability Analysis

The local stability of an equilibrium points is determine from the Jacobean matrix of the ordinary differential equation evaluated at  $E_0$ .

$$J_0 = \begin{bmatrix} -(\omega M + v_1 + d) & 0 & 0 & -\beta(1 - \delta_M)S & -\omega S \\ \omega M & -(v_2 + d) & 0 & -\beta \alpha_M (1 - \delta_M)S_M & \omega S \\ v_1 & v_2 & -(\gamma_V + d) & -\beta_1 V & 0 \\ 0 & 0 & 0 & \beta(1 - \delta_M)(S + \alpha_M S_M) + \beta_1 V - (\gamma + \gamma_M + d) & 0 \\ 0 & 0 & 0 & \mu_1 & -\mu_0 \end{bmatrix}_{E_0}$$

The eigenvalues value of  $J_0$  are obtained by solving  $\det(J_0 - \lambda I)$ . And we obtain the characteristic equation,

$$(-(\gamma_V + d) - \lambda)(-(v_2 + d) - \lambda)(-(\omega M + v_1 + d) - \lambda)(\beta(1 - \delta_M)(S + \alpha_M S_M) + \beta_1 V - (\gamma + \gamma_M + d) - \lambda)(-\mu_0 - \lambda) = 0$$

where;

$$\lambda_1 = -(\gamma_V + d), \lambda_2 = -(v_2 + d), \lambda_3 = -(\omega M + v_1 + d), \lambda_4 = -(\gamma + \gamma_M + d) + \beta(1 - \delta_M)(S + \alpha_M S_M) + \beta_1 V, \lambda_5 = -\mu_0$$

Next, we consider the stability of the endemic equilibrium points  $E_1$ , we examine the eigenvalue of Jacobian

matrix at  $E_1$ , which is

$$J_1 = \begin{bmatrix} -B_1 & 0 & 0 & -B_6 & -\omega S \\ \omega M & -B_3 & 0 & -B_7 & \omega S \\ v_1 & v_2 & -B_5 & -\beta_1 V & 0 \\ B_2 & B_4 & \beta_1 I & -B_8 & 0 \\ 0 & 0 & 0 & \mu_1 & -\mu_0 \end{bmatrix}$$

The eigenvalues value of  $J_1$  are obtained by solving  $\det(J_1 - \lambda I) = 0$ . And we obtain the characteristic equation,  $\lambda^5 + C_1\lambda^4 + C_2\lambda^3 + C_3\lambda^2 + C_4\lambda + C_5 = 0$

By Routh-Hurwitz criteria, equilibrium points are locally asymptotically stable if all conditions are satisfied: 1)  $C_1C_2C_3 > C_3^2 + C_1^2C_4$

$$2) (C_1C_4 - C_5)(C_1C_2C_3 - C_3^2 - C_1^2C_4) > C_5(C_1C_4 - C_3)^2 + C_1C_5^2.$$

### Step 3 : Numerical Simulation

In this section, we present several scenarios using demonstrated data to validate the performance of the nonlinear models using the parameters obtained from literatures of Kaur et al.(2014). The parameters that were not available in literatures were estimated. The software used for computation is Maple. First, we consider stability of disease free state using set of parameter values of study the system of nonlinear ordinary differential equations (1-4). We found that, the eigenvalues corresponding to the equilibrium point  $E_0$  and basic reproductive number are following:  $\lambda_1 = -0.0166 < 0$ ,  $\lambda_2 = -0.0299 < 0$ ,  $\lambda_3 = -0.1002 < 0$ ,  $\lambda_4 = -6.0176 < 0$ ,  $\mathcal{R}_0 = 0.2461 < 1$ .

Since all eigenvalues corresponding to  $E_0$  be negative, thus  $E_0$  is locally asymptotically stable and basic reproductive number less than 1. Further, to illustrate the stability of endemic free state, shown that the results :  $\lambda_1 = -0.000046$ ,  $\lambda_2 = -0.005518$ ,  $\lambda_3 = -0.001000$ ,  $\lambda_4 = -0.082327$ ,  $\lambda_5 = -0.142932$ ,  $\mathcal{R}_0 = 1.3183 > 1$ . The same, all eigenvalues to be negative and basic reproductive number is greater than 1, the equilibrium state will be the endemic state,  $E_1$ . The disease free equilibrium ( $E_0$ ) will be local asymptotically stable, as follows;

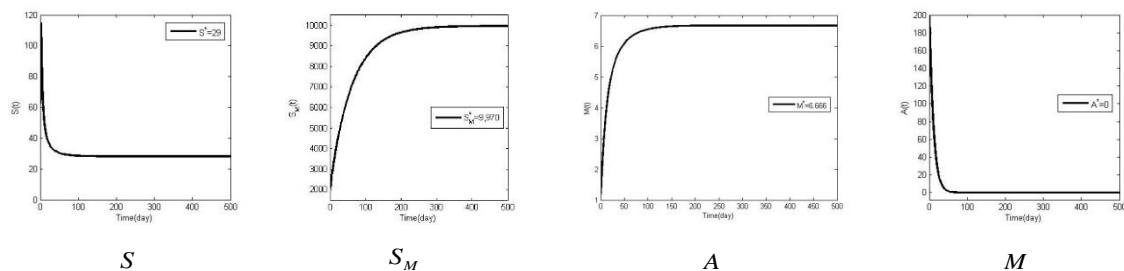


Fig. 2 Time series of susceptible class, susceptible class acknowledge from content of media, alcoholism class and the cumulative density of the mass media, respectively.



From Fig 2, we found that the values of parameters are in the text and  $R_0 < 1$ . We see that the solutions converge to disease free state. And we found that the values of parameters are in the text and  $R_0 > 1$ . We see that the solutions converge to endemic free state following Fig 3.

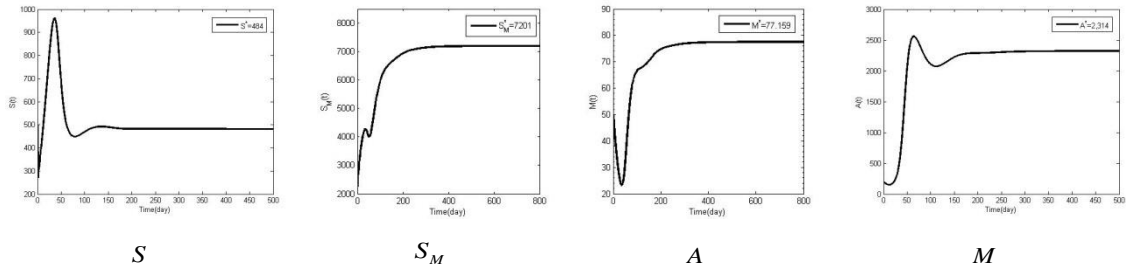


Fig. 3 Time series of susceptible class, susceptible class acknowledge from content of media, alcoholism class and the cumulative density of the mass media, respectively.

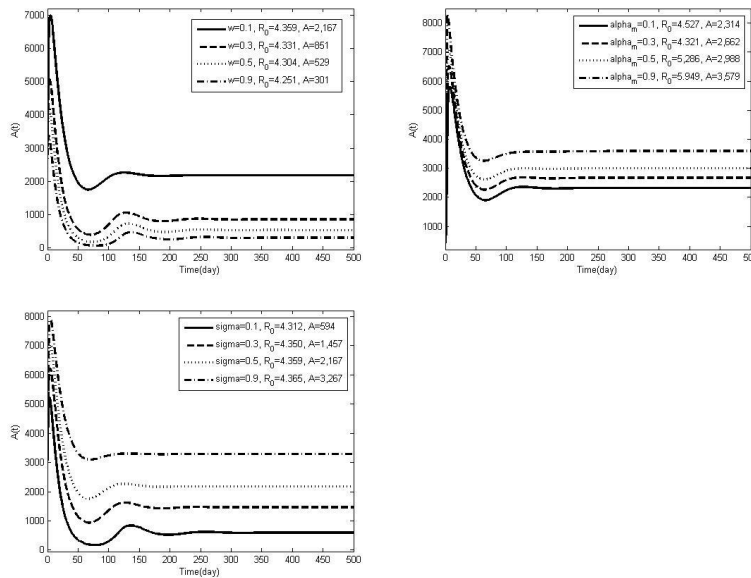


Fig. 4 The effects of parameter  $\omega$ ,  $\sigma$  and  $\alpha_m$  respectively.

From Fig 4, the effects of parameter  $\omega$ ,  $\sigma$  and  $\alpha_m$  present that the more providing information to the high risk drinker is the less number of alcoholism reduces. While, when the awareness of threat of alcohol decreases, the number of alcoholism will increase a lot.

**Table 1**

The Basic reproduction number under effects of parameter  $\omega$  ,  $\sigma$  and  $\alpha_m$  respectively.

Parameters		A	$R_0$
$\omega$	0.1	142	4.123
	0.3	47	3.729
	0.5	27	3.430
	0.9	15	3.000
$\sigma$	0.1	594	4.312
	0.3	1457	4.350
	0.5	2167	4.359
	0.9	3267	4.365
$\alpha_m$	0.1	2314	4.527
	0.3	2662	4.921
	0.5	2988	5.286
	0.9	3579	5.949

The analytical result from this research told that if the rate of knowledge transferred to the alcohol risk takers by the awareness program increases, the index of alcoholism transmission and the number of alcohol addicts will reduce. Also, if we reduce the rate of return to addicts in the group of used-to-be addicted group, the index of alcoholism transmission and the number of alcohol addicts will decrease. On the other hands, if the rate of awareness program to alcohol risk takers is reduced, the index of alcoholism transmission and the number of alcohol addicts will be increased.

In conclusion, those parameters, the rate of knowledge transferred to the alcohol risk takers by the awareness program ( $\omega$ ), the rate of return to addicts in the group of used-to-be addicted group ( $\sigma$ ) the rate of awareness program to alcohol risk takers ( $\alpha_m$ ) directly affect the dynamic of alcoholism. When the alcohol risk takers get a lot of information from the media  $\mathfrak{R}_0 < 1$ , there is no alcoholism transmission and vice versa.

### CONCLUSIONS

The objective of this research is to analyze the spread of Alcoholism by considering effect of mass media to the reduction of transmission level of this disease. For numerical illustration we start from analytical solution, numerical solution and simulation. The result are summarized in Fig (2-4) and Table (1) by presenting the important values and the model system shown that the disease free equilibrium is stable until, the basic reproduction number,  $R_0 < 1$ . The disease free equilibrium becomes unstable for  $R_0 > 1$ , which leads to the existence of an endemic equilibrium, it clearly that the mass media significantly cause the reduction in transmission and infection of alcoholism in Thailand.

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# AN ANALYSIS OF THE AFFECTED DEMAND FOR INTERNATIONAL TOURISTS' EXPENDITURE OF ASEAN COUNTRIES IN THAILAND

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## ABSTRACT

The ASEAN (Association of South-East Asian Countries) has 10 countries: Brunei, Cambodia, Laos, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. Thailand's tourism products could be presented in terms of tourist attraction, facilities and superstructure. The Thai government attempts to formulate policy to promote the expansion of Thai tourism industry and also to increase international ASEAN tourists' demand to spend more money in Thailand by expanding the length of stay in Thailand. The international tourists could spread the prosperity from their countries to local attractions and learn the local culture from local attractions back to their countries. The objective of this study is to find the conceptual framework and methodology for analyzing factors that have impact on the expenditure of international tourists visiting Thailand and to forecast the expenditure of international tourists of ASEAN countries (Brunei, Cambodia, Laos, Indonesia, Malaysia, Myanmar, Philippines, Singapore, and Vietnam) in Thailand. This study shows the econometric model focusing on the factors depending on international tourists' expenditure and elasticity of demand for international tourists' expenditure of ASEAN countries in Thailand. Tourists' demand is the aggregate of individual demands of all the tourists of a tourism product over a period of time at a specific price, while other factors are constant. Demand elasticity is important because it helps the market model the potential change in demand according to changes in price of the goods, the effect of changes in prices of other goods and many other important market factors. It could lead the market change toward more optimal competitive behavior. The multiple regression analysis of international tourists' expenditure is used to quantify the impact of key economic variables on the expenditure of international tourists of ASEAN countries to Thailand by using time-series and cross-sectional data between A.D. 2007-2016. The study shows that a significance role and influence the demand of international tourists' expenditure of ASEAN countries in Thailand are the ratio of an air fares to per capita income of ASEAN countries compared to Thailand, the ratio of average hotel room rate per day to per capita income of ASEAN countries compared to Thailand, the ratio of tourists' ASEAN countries consumer price index (CPI) compared to Thailand. Knowledge gained from this study can be used to formulate policy to promote the expansion of Thai tourism industry and also to induce ASEAN tourists to spend more money compared to Thailand.

**Keyword**--Development Economic, Demand of International Tourists' Expenditure, Tourism Industry, ASEAN Countries

## INTRODUCTION

Tourism may be defined as the sum of the processes, activities, and outcomes arising from the relationships and the interactions among tourists, tourism suppliers, host governments, host communities, and surrounding environments that are involved in the attracting, transporting, hosting and management of tourists and other visitors (Goeldner and Ritchie; 2012). Many developing countries which open society and dynamic economy assume tourism development as the country's economic development to be the way to increase the countries' income, building the job for people, including the businesses or activities concerning tourists in many tourist attractions.

Experiences and their meanings usually appeal to tourists' high order needs, such as novelty, excitement and enjoyment, prestige, socialization and learning, and contribute to the enhancement of a sense of well-being (Prebensen, Chen, and Uysal; 2014). To become a tourist, a person must travel away from home. However, not all such travel qualifies as tourism. The World Tourism Organization (UNWTO) and

most national and subnational tourism bodies hold that the travel must occur beyond the individuals “usual environment”. Since this is a highly subjective term that is open to interpretation, these bodies normally stipulate minimum distance thresholds, or other criteria such as state or municipal residency, which distinguish the “usual environment” from a tourist destination. The destination and use of such thresholds may appear arbitrary, but they serve the useful purpose, among others, of differentiating those who bring outside revenue into the local area (and thereby increase the potential for the generation of additional wealth) from those who circulate revenue internally and thereby do not create such an effect (Weaver and Lawton; 2014). The economic significance of tourism is beneficial to the global economy and to individual economies, including its impact (Sriupayo; 2016). The substantial expenditure associated with tourism flows makes a substantial economic contribution to host countries.

Changes in this expenditure resulting from shifting destination market shares will impact on countries’ export earnings with further changes to Gross Domestic Product (GDP) and employment. This in itself indicates the importance of an understanding of the role that tourism economics can play in policy formulation. (Dwyer, Forsyth, and Dwyer; 2010) Creating value in tourism experiences is greatly focused on the role of tourist as consumer and the destination setting and the service company as the producer or provider in the co-creation process. (Prebensen, Chen, and Uysal; 2014)

The ASEAN (Association of South-East Asian Countries) has 10 countries: Brunei, Cambodia, Laos, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. Thailand’s tourism has a comparative advantage over other ASEAN countries. In general, tourists will expense their money for buying souvenir, accommodation services for visitors, food and beverage serving services, air passenger transport services, country-specific tourism characteristic services and travel agencies and other reservation services.

According to the UNWTO, major exclusions include travel by active military personnel, daily routine trips, commuter traffic, migrant and guest worker flows, nomadic movements, refugee arrivals and travel by diplomats and consular representatives. The latter exclusion is related to the fact that embassies and consulates are technically considered to be part of the sovereign territory of the country they represent. The purpose that do qualify as tourism are dominated by three major categories: leisure and recreation, visiting friends and relatives, and business. (Weaver and Lawton, 2014)

In theory, tourist behavior in relation to experience creation could be modified by a host of factors, which be modified by a host of factors, which include but are not limited to: behavioral variances (e.g. expectation, perception and motivation), social-demographic traits (e.g. education, income), lifestyle (e.g. basic living, moderate living and extravagant living) and externalities (e.g. weather, regulations and the environment). (Prebensen, Chen, and Uysal; 2014) Tourists may perceive their vacation experiences differently based on a number of antecedents, as indicated above, and subsequent variations in their ability and desire to cope and co-create in the experience moment depending on situational aspects (Prebensen and Foss; 2011)

The availability of tourist attractions is an essential “pull” factor, and destinations should therefore benefit from having a diversity of such resources. The compilation of an attraction inventory incorporating actual and potential sites and events, is a fundamental step towards ensuring that a destination realizes its full tourism potential in this regard. (Weaver and Lawton, 2014) Richardson and Fluker (2004) suggest that these “pull” factors are as follows: range of attractions, including the natural environment, cultural resources and a welcoming host population; availability and quality of amenities; special events; infrastructure and accessibility; suitable weather conditions; and positive image as a safe, entertaining, interesting place to visit. The pull factors can help the tourist choose the destination which best meets their motivations. However, it may be that some pull factors may stimulate to travel. (Holloway and Humphreys, 2012)

The econometric model in this study focuses on the factors depending on demand theory and elasticity of demand of international tourists’ expenditure of ASEAN countries in Thailand and many research papers summarizing the factors that affected international tourists’ expenditure such as the research of Bechdolt (1974) in “Cross-Sectional Travel Demand Function: U.S. Visitors to Hawaii, 1961-1970” found that the factors affected tourists’ demand being based on per capita income of the tourists’ countries and their expenditure for travelling.; Archer (1976) found that per capita income, consumer price on tourists’ countries compared with the U.S., exchange rate between tourists’ countries and the U.S., travelling cost from tourists’

countries to the U.S., and the number of population of tourists' countries resulting to tourists' demand in the U.S.; Rojwannasin (1982) found that per capita income of the tourists' countries, and exchange rate between tourists' countries and Thailand; Wanachakit (1987) found that the change of Thailand's national income being based on the same direction of Thailand's tourism income.; and Suwathee (1983) found that tourist attraction, courtesy, the quality of accommodation, room price and food price resulting to the attitude of international tourists' demand in Thailand.

## OBJECTIVE

The objective of this study is to find the conceptual framework and methodology for analyzing factors that have impacted on the demand of expenditure of international tourists visiting Thailand and to forecast the international tourists' expenditure of ASEAN countries in Thailand.

## METHODOLOGY

### *Demand Theory and Tourism Demand*

For tourism industry, tourism is still a derived demand to many businesses on both direct business such as transportation and accommodation and indirect business such as local craft production. Tourism is an important role and significant activities to development the country's economy. The Thai government attempts to formulate policy to promote the expansion of Thai tourism industry and also to increase international ASEAN tourists' demand to spend more money in Thailand by expanding the length of stay in Thailand. That is to expense for many activities in everywhere in Thailand. Moreover, international tourists could spread the prosperity from their countries to local attractions and learn the local culture from local attractions back to their countries. For example, the demand for travel to a destination and the demand for a particular tourism-related product or service. One helpful way of investigating the travel decision is to distinguish two broad determinants of the demand for tourism: price factors and a great non-price factors. (Dwyer, Forsyth, and Dwyer; 2010)

Price factors: The price factors include the product price, the prices of other products and expectations regarding future price changes. The cost of tourism to the visitor includes the cost of transport services to and from the destination and the cost of ground content (accommodation, tour services, food and beverages, entertainment, etc.). For example, luxury hotels have specialized services, from a mini-bar, a bed, to a wardrobe, which are tailored to meet the specific needs and expectations of the guest. (Chathoth, Ungson, Harrington, Altinay, Okumus and Chan; 2014). The prices paid by an international tourist who must convert one currency into another will also be influenced by prevailing exchange rates, and prices in the destination as compared to prices in their home country.

Non-price factors: The non-price factors include the size of the market, income, tastes, advertising and promotion, seasonality, buyer expectations of future income and wealth, product availability, the amount of leisure time available and other factors such as special events, immigration levels or random shocks. (Dwyer, Forsyth, and Dwyer; 2010) These include socio-economic and demographic factors such as population, income in origin country, leisure time, education, occupation, availability of leisure time, immigration stock and the like and qualitative factors including consumer tastes, tourist appeal, destination image, quality of tourist services, tourist preferences, special events, destination marketing and promotion, cultural ties, weather conditions and so on. Qualitative factors can have positive effects (boost tourism demand) or negative effects (reduce tourism demand) depending on the qualitative effect being studied. Thus, special events tend to boost tourism demand to a destination, while the incidence of terrorism trends to lessen it. (Dwyer, Forsyth, and Dwyer; 2010)

The market demand function for a product or service is the relationship between the quantity demanded of the product and the various factors that influence this quantity. For tourism demand it is useful to distinguish between the demand for travel to a destination (e.g. visitor arrivals and expenditure) and the demand for a particular tourism-related products or services (e.g. hotel rooms, airplane tickets, restaurant meals). (Dwyer, Forsyth, and Dwyer; 2010) Moreover, keeping all standard level of basic infrastructure in order to maintain tourists in the area as well as protect them as like one of us could build up the image of local area and raise number of tourists coming each year. (Sriupayo; 2016)

In this study, the demand of international tourists' ASEAN countries in Thailand, it is a quantity demanded by an individual for a product at a particular price and within the specific period of time. The

individual demand of a tourism product, income of tourists, and their tastes and preferences. On the other hand, the total quantity demanded for a tourism product by all tourists at a given prices and time is regarded as market demand. That is, tourists' demand is the aggregate of individual demands of all the tourists of a tourism product over a period of time at a specific price, while other factors are constant.

#### *Elasticity of Demand for Tourism Product*

The elasticity of demand refers to how sensitive the demand for a good to change in other economic variables. Demand elasticity is important because it helps the market model the potential change in demand according to changes in price of the good, the effect of changes in prices of other goods and many other important market factors. It could lead the market change toward more optimal competitive behavior. The price elasticity of demand is a term in economics often used when discussing price sensitivity which is a measure of the relationship between a change in the quantity demanded of a particular good and a change in its price. The formula for calculating price elasticity of demand is :

Price elasticity of demand = % change in quantity demanded / % change in price

The degree to which the quantity demanded for a good changes in response to change in price can be influenced by a number of factors. The elasticity of a good or service can vary according to the amount of close substitutes, its relative cost and the amount of time that has elapsed since the price change occurred. If a small change in price is accompanied by a large change in quantity demanded, the product is said to be elastic (or responsive to price changes). Conversely, a product is inelastic if a large change in price is accompanied by a small amount of change in quantity demanded. If the price elasticity of demand is equal to 0, demand does not change when prices change, the demand is perfectly inelastic. Values between 0 and 1 that demand is inelastic (when the percent change in demand is less than the percent change in price). (Dwyer, Forsyth, and Dwyer; 2010)

For price elasticity of tourism, the extent to which demand for a tourism product changes because of a change in the price of that product itself. For example, an increase in air fares will, other things equal, result in reduced passenger numbers in air travel. The price elasticity of demand for any particular tourism product is:

Price elasticity of demand of tourism product

= % change in quantity demanded of the tourism product / % change in price of the tourism product

For income elasticity of tourism, the extent to which demand for a tourism product changes because of changes in the level of consumer income. For example, as individual and national wealth rises, more air travel or leisure cruising will result. The income elasticity of demand for any particular tourism product is:

Income elasticity of demand for tourism product

= % change in quantity demanded / % change in income

#### *Conceptual Framework*

A large number of research studies have attempted to model the factors that actually affect tourism demand, and the extent to which they do so. Demand modelers must consider carefully the issues of model specification, data collection, functional forms of the equation and evaluation of results. The relative importance of the various quantitative and qualitative factors found by researchers to influence the demand for international tourists. The more prominent factors include income, relative price, marketing expenses, transport cost, exchange rates, migration levels in host destination and qualitative factors such as tourists' attributes, trade and cultural links between the countries, destination attractiveness, special events, natural disasters and social threats. (Dwyer, Forsyth, and Dwyer; 2010) Perceived customers value has been found to be a powerful predictor of purchase intention. Thus, identifying factors that are critical in acquiring new visitors and retaining old customers should be of great interest to marketers of tourist experiences and destinations. (Prebensen, Chen, and Uysal; 2014)

Statistical methods are extensively used in the field of economics. Quantitative research using statistical methods starts with the collection of data, based on the theory of demand, tourism demand, and elasticity of demand for tourism product. The method of estimating demand is regression analysis. Regarding the international tourists' demand, the regression analysis is to specify the model to be estimated.

This involves identifying the most variables that are considered to affect the demand for the product. Because regression analysis estimates how the value of the dependent variable changes when any one of the independent variables is modified (while the other independent variables are held fixed), the techniques can be used in two main frameworks. The first focuses on exploring the nature of the relationship between the dependent variable and more independent variables in order to analyze expected reactions in the dependent variables, caused by induced changes in the dependent one. The most important variables affecting the demand include the price of a tourism product, the average income of population of the tourists' country, tastes and preferences to tourism product of tourists, and the other reasons such as the distance between the tourists' country and the destination country.

In this study, the conceptual framework of international tourists' expenditure of ASEAN countries in Thailand for the first step as follows:

- D = f (P, M, POP, T, etc.)
- D = The demand of tourism product of international tourists
- P = The price of tourism product (air fare, room price)
- M = The average income of population of the tourists' country
- POP = The number of population of the tourists' country
- T = Tastes and preferences to tourism product of tourists
- etc. = The other reasons such as the distance between the tourists' country and the destination country

## RESULTS

The result of international tourists' expenditure of ASEAN countries (Brunei, Cambodia, Laos, Indonesia, Malaysia, Myanmar, Philippines, Singapore and Vietnam) in this research could determine the function of international tourist' expenditure that refers to the total expenditure of all the tourists taken together. The sum total expenditure for a tourism product of all international tourists of Thailand tourism is known as international tourists' expenditure in Thailand. That is the international tourists' expenditure function of ASEAN countries in Thailand as the econometric model could be expressed mathematically as follows:

$$ET_i = f(TP_i / IN_i, HP_i / IN_i, CPI_i / CPI_t) \dots\dots(1)$$

ET<sub>i</sub> = Total expenditure of international tourists

f = functional relation

TP<sub>i</sub> = The price of air fares (economy class and one way ticket) from the country i to Thailand in terms of the currency of the country i

IN<sub>i</sub> = The average income per population of the country i

HP<sub>i</sub> = The price of hotel room (generally take the form of serviced accommodation, where one or more meal is provided by the establishment) per day in Thailand adjusted by the exchange rate between the country's currency and Thai baht

CPI<sub>i</sub> = The consumer price index of the country i

CPI<sub>t</sub> = The consumer price index of Thailand

i<sub>1</sub> = Brunei ; i<sub>2</sub> = Cambodia ; i<sub>3</sub> = Laos ; i<sub>4</sub> = Indonesia ; i<sub>5</sub> = Malaysia ;

i<sub>6</sub> = Myanmar ; i<sub>7</sub> = Philippines ; i<sub>8</sub> = Singapore ; i<sub>9</sub> = Vietnam

The second step in using regression analysis to estimate the international tourists' expenditure of ASEAN countries in Thailand is to collect the data for the variables in the model. Data can be collected for each of the variables over time (yearly) which is called "time-series data" in A.D.2007-2016, and different country units at a particular point in time which is called "cross-sectional data" in ASEAN countries (excluding Thailand).

The third step in estimating international tourists expenditure by regression analysis is to determine the form of the model to be estimated. The simplest model as the most realistic model is the linear model.

Equation (1) can be written in explicit linear form as Equation

$$ET_i = \beta_0 + \beta_1(TP_i/IN_i) + \beta_2(HP_i/IN_i) + \beta_3(CPI_i/CPI_t) + \mu \dots\dots(2)$$

B<sub>0</sub> is the intercept; β<sub>s</sub> are the parameters (coefficients) to be estimated; μ is the error term.



The above linear model, the change or marginal effect on the dependent variable (ET<sub>i</sub>) for each 1 unit change in the dependent or explanatory variables (given by the estimated coefficient for the variables) is constant regardless of the level of the particular variable (or other variables included in the expenditure equation). This makes for easy interpretation of the estimated coefficients of the regression as elasticities. The formula for point elasticity of expenditure is

$$\varepsilon = (dP/dQ)(P/Q) \dots\dots\dots(3)$$

Various functional forms can be used for regression analysis. There are cases where a nonlinear relationship will fit the data better than any linear form. Other than the linear equation, the most common form is the multiplicative functional form or power function.

The literature highlights the existence of two big groups of quantitative methods of determining and forecasting the demand of international tourists' expenditure: univariate and causal models. Dwyer, Gill, and Seetaram (2012) suggest that univariate models, used primarily for the purpose of forecasting, are based on the assumption that forecasts can be made without including factors that determine the level of the variable. Thus the only information that they require is the past evolution of the variable to be forecasted. Within the regression analysis context, a simple example of a univariate model can be represented by the autoregressive model.

A demand equation in the form of a power function is:

$$ET_i = \beta_0(TP_i/IN_i)^{\beta_1}(HP_i/IN_i)^{\beta_2}(CPI_i/CPI_t)^{\beta_3}\mu \dots\dots\dots(4)$$

In order to estimate the parameters (coefficient  $\beta_1$  and  $\beta_2$ ) of expenditure equation (4), Transforming equation (4) into double log equation (5) which is linear in the logarithms, and then run a regression on the log variables.

$$\ln ET_i = \ln \beta_0 + \beta_1 \ln(TP_i/IN_i) + \beta_2 \ln(HP_i/IN_i) + \beta_3 \ln(CPI_i/CPI_t) + \ln \mu \dots\dots\dots(5)$$

Because the equation is linear in terms of the logarithms of the original variables, the coefficients can be estimated using the ordinary least squares method. The estimated slope coefficient [ $\beta_1, \beta_2, \beta_3$  in Equation (5)] represents percentage changes elasticities as follows:

$\beta_1, \beta_2, \beta_3$  are the elasticity of international tourists' expenditure

where  $\beta_0$  is the constant term that indicates the estimated value of ET<sub>i</sub> when all the explanatory variables are 0 ((TP<sub>i</sub>/IN<sub>i</sub>)= (HP<sub>i</sub>/IN<sub>i</sub>)= (CPI<sub>i</sub>/CPI<sub>t</sub>)= 0), and  $\beta_1, \beta_2, \beta_3$  is the vector of parameters to be estimated, indicating the effect of an additional unit of each of the independent variables (TP<sub>i</sub>/IN<sub>i</sub>, HP<sub>i</sub>/IN<sub>i</sub>, CPI<sub>i</sub>/CPI<sub>t</sub>) on ET<sub>i</sub> when the rest of the independent variables remain constant.

In summary, the advantage of the power formulate of the expenditure function is that the estimated coefficient give expenditure elasticities directly.

This study is based on quantitative particular point in time. The expenditure forecasting with mathematical techniques to predict the values of variables of international tourists' expenditure is on time-series categories. The model of time-series assumes that a variable's past course is the key to predicting its future. The quantitative approach is for the forecasters to choose a particular class of model as indicated by the data and then use a set of objective criteria to choose the most as indicated by the data and then use a set of objective criteria to choose the most suitable model within this class. (Dwyer, Forsyth, and Dwyer; 2010) A time-series model explains a variable with regard to its own past and a random disturbance term. Patterns in the data during the past are used to project or extrapolate future values. Time-series analysis assumes that a variable will follow its established path into the future and that its future behavior can therefore be predicted through an analysis of its past behavior. (Dwyer, Forsyth, and Dwyer; 2010)

The results of study could be summarized the international tourist' expenditure function (econometric model) concerning the international tourists' demand of ASEAN countries in Thailand are the ratio of an airplane ticket to per capita income of ASEAN countries, the ratio of average hotel room rate per day to per capita income of ASEAN countries, the ratio of tourists' ASEAN countries, the ratio of tourists' ASEAN countries consumer price index (CPI) to Thailand consumer price index, for setting 2 objectives as follows: To analyze the influence factors that affected international tourists' expenditure of ASEAN countries in Thailand and to forecast the expenditure of ASEAN tourists in Thailand in the future.

Expenditure forecasting may be characterized as predicting the most probable level of expenditure that is likely to occur given changing circumstances or, when alternative policies are implemented, to predict what different levels of expenditure may result. (Archer, 1994). Expenditure forecasting is also a part of

tourism planning. The aims of tourism planning as a socio-political process of deciding where decisions are prepared for action in the future are to anticipate and regulate change in the tourism system to promote orderly development in order to increase the social, economic and environmental benefits.

### CONCLUSION

In conclusion, the study focuses on nine countries of ASEAN countries (10 countries including Thailand): Brunei, Cambodia, Laos, Indonesia, Malaysia, Myanmar, Philippines, Singapore and Vietnam. The objective of this study is to find the conceptual framework and methodology for analyzing factors that have impacted on the expenditure of international tourists of ASEAN countries visiting Thailand. The multiple regression analysis is used to quantify the impact of key economic variables on the expenditure of foreigners to travel to Thailand by using time series and cross section data between A.D. 2007-2016. The study shows that a significance role and influence the demand of international tourists' expenditure of ASEAN countries in Thailand are the ratio of an airplane ticket to per capita income of ASEAN countries compared to Thailand, the ratio of average hotel room rate per day to per capita income of ASEAN countries compared to Thailand, the average income per population of ASEAN country compared to Thailand., and the ratio of tourists' ASEAN countries consumer price index to Thailand consumer price index. Knowledge gained from this study can be used to formulate policy to promote the expansion of Thai tourism industry and also to induce ASEAN tourists' demand to visit more days in Thailand.

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# THE EFFECT OF FALL PREVENTION PROGRAM ON FALLS AMONG ELDERLY AT BAN LOPBURI RESIDENTIAL HOME

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## ABSTRACT

The size of the elderly Thai population is increasing statistically. The major risk in the elderly that causes injury, death and psycho-social outcomes is fall. The objective of this quasi-experimental research is to study the results of fall prevention program to the numbers of falls in the elderly. The samples were the elderly who resided at Ban Lopburi Residential Home during April to June, 2016 and had history of falls. The Ban Lopburi Residential Home record showed 114 falls of the elderly and 13 of them were transferred for hospital admission. The injuries included contusion, muscle strain, laceration, dislocation, head injury and fracture such as hip fracture. The samples were randomly selected into 30 elderly in the experiment group and 30 elderly in the control group which were similar in gender, age, muscle strength and balance. The experiment tool was fall prevention program that included: 1) Education for risk and guidelines for fall prevention by an expert in physical therapy from Srabote Hospital. 2) Assessment of physical fitness and balance of the elderly before program intervention. 3) Education for exercise program by an expert in health promotion from Lopburi Provincial Office. The content validity was 0.94. The adjusted program was then tried out with the other elderly group who had similar characteristics with the samples. The tools for data collection were personal data form and fall record form which the content validity from 5 experts was 0.92. The tool for sample selection was the calibrated timer watch for the ability to stand and walk test. Data was analyzed by Dependent t-test and Independent t-test. 4) Program intervention to the experiment group for 8 weeks. 5) Evaluation, conclusion and analysis of the follow up data for falls, physical fitness and balance in the elderly after program intervention.

The research results showed numbers of falls in the elderly after program intervention decreased from before program intervention with statistical significance ( $\bar{X} = 2.36$  and  $\bar{X} = 0.77$ ,  $t = 4.45$ ,  $p < .05$ ). Additionally, the experimental group had statistically significant fall frequency less than that of the control group ( $\bar{X} = 0.77$  and  $\bar{X} = 1.55$ ,  $t = 2.32$ ,  $p < .05$ ).

The study show that a fall prevention program was successfully used for elderly people living in Ban Lopburi Residential Home, in order to prevent falls.

**Keywords**--Falls prevention program, Falls, The Elderly

## INTRODUCTION

At present the ageing population in Thailand is increasing. In 2016 there was 9,517,000 elderly population (Institute for population and social, 2013). One of the major risks that causes health problems and psycho-social outcomes of the elderly is fall which causes injury, death, complication and prolonged hospitalization. There are more incidents and death from falls in the elderly. The statistic in the US showed that the over 65 year-old population fall at least 1 time per year with 50% of recurrence. It is estimated that in 2030 the US government will spend the budget of more than 44 billion dollars for the medical expense (Stevens, 2015).

The elderly's body systems decline with increasing age such as decrease in muscle strength and muscle flexibility, joint degeneration and inflammation, bone mass density, vision, hearing and equilibrium. Acute and chronic illnesses such as cerebrovascular disease, Parkinsonism and brain dystrophy could cause imbalance. Osteoporosis causes inconvenient walk and loss of balance. Antihypertensive drugs could cause postural hypotension. Myocardial infarction and valvular heart disease result in decreased cardiac output which causes decrease in blood supply to the brain and leads to fainting and fall (Gusi, 2012) The elderly with multiple diseases who take various drugs have more risks of adverse drug reaction that affect nervous system such as ataxia, restlessness and confusion. Antiarrhythmic and antihypertensive drugs could cause bradycardia and hypotension. The more drugs the elderly take, the more risk of fall they have. The government has to spend a lot of budget for the medical expense. After experiencing falls, some elderly have stress, lose self-confidence, fear of falling again, decrease ability for daily activities, depress and isolate from others (Gray-Micelli, 2013).

The data from Ban Lopburi Residential Home showed 114 falls of the elderly and 13 of them were transferred for hospital admission. The injuries included contusion, muscle strain, laceration, dislocation, head injury and fracture such as hip fracture. These injuries affected way of life of the elderly because prolonged rehabilitation caused suffering to the elderly and care givers and also high medical costs. Provincial Administration Organization is authorized for life quality enhancement of elderly and the disadvantaged group. The research will enable fall prevention program for the elderly in Ban Lopburi Residential Home (Statistics and data Ban Lopburi Residential Home during April to June, 2016).

## **OBJECTIVES**

To prevent fall in the elderly at Ban Lopburi Residential Home

## **METHODOLOGY**

The samples were the elderly who resided at Ban Lopburi Residential Home during April to June, 2016 and had history of falls. The samples were randomly selected into 30 elderly in experiment group and 30 elderly in control group which were similar in gender, age, muscle strength and balance. The intervention program for the experiment group included: Samples were parent of elderly aged 60-85 years, 30 persons that selected by sampling without replacement 1) written and spoken Thai language 2) clarifying the meaning of the research and methods of data collection coupled with program intervention before and after. 3) Data were analyzed by Dependent t-test and Independent t-test. The time for Program intervention to the experiment group for 8 weeks;

- 1) Education for risk and guidelines for fall prevention by an expert in physical therapy from Srabote Hospital
- 2) Assessment of physical fitness and balance of the elderly before program intervention.

- 3) Education for exercise program by an expert in health promotion from Lopburi Provincial Office. The content validity was 0.94. The adjusted program was then tried out with the other elderly group who had similar characteristics with the samples. The tools for data collection were personal data form and the fall record form which the content validity from 5 experts was 0.92. The tool for sample selection was the calibrated timer watch for the ability to stand and walk test. Data was analyzed by Dependent t-test and Independent t-test.
- 4) Program intervention to the experiment group for 8 weeks.
- 5) Evaluation, conclusion and analysis of the follow up data for falls, physical fitness and balance in the elderly after program intervention.

Week 1: The researchers interviewed the experiment group for drug use and instructed them for risk factors and guideline of fall prevention, common drugs that caused fall in the elderly, visual capability of the elderly and safety environment management. The instruction lasted 30 minutes, then the 30 minutes exercise teaching using video was shown and the samples practiced until they could completely follow the demonstration.

Week 2: Each elderly in the experiment group was assessed for his or her housing environment with Environment Assessment for Risk of Fall Form. The researchers also planned for solving problems and advice.

Week 3-8: After 2 months the experiment group and care givers were assigned to observe and recorded fall incidents within 1 month period. The control group continued to practice 30 minutes exercise session using video at least 3 times per week. The numbers of fall incidents after program intervention were collected by interviewing each sample in the experiment group and the control group who continued their daily activities.

## RESULTS

**Table 1**  
**Mean, standard deviation (SD), t- test and statistical significant level of pre and post intervention data for body mass index (BMI) in the experiment group. n=30**

BMI	$\bar{X}$	S.D.	$\bar{D}$	S.D.	t-test	Sig.(1-tailed)
Pre-intervention	24.12	5.51	-0.48	4078	-0.46	1.0000
Post-intervention	23.65	4.83				

Table 1 shows mean BMI of pre-intervention and post-intervention in the experiment group are 24.12 and 23.65 respectively with no statistically significant difference ( $p>0.05$ ).

**Table 2**

**Mean, standard deviation (SD), t- test and statistical significant level of pre and post intervention data for heart rate (HR) in the experiment group. n=30**

HR	$\bar{X}$	S.D.	$\bar{D}$	S.D.	t-test	Sig.(1-tailed)
Pre-intervention	91.00	7.20	-3.33	9.38	-1.63	1.0000
Post-intervention	87.67	13.73				

Table 2 shows mean HR of pre-intervention and post-intervention in the experiment group are 91.00 and 87.67 respectively with no statistically significant difference ( $p>0.05$ ).

**Table 3**  
**Mean, standard deviation (SD), t- test and statistical significant level of pre and post intervention test for performance scores in the experiment group. n=30**

Performance scores	$\bar{X}$	S.D.	$\bar{D}$	S.D.	t-test	Sig.(1-tailed)
Pre-intervention	62.43	23.14	19.71	24.80	3.64 *	0.0008
Post-intervention	82.14	43.55				

Table 3 shows mean performance scores of pre-intervention and post-intervention in the experiment group are 62.43 and 82.14 respectively. The post-intervention performance scores are higher than the pre-intervention performance scores with statistical significance ( $p<0.05$ ).

**Table 4**  
**Mean, standard deviation (SD), t- test and statistical significant level of pre and post intervention test for balance scores in the experiment group. n=30**

Balance scores	$\bar{X}$	S.D.	$\bar{D}$	S.D.	t-test	Sig.(1-tailed)
Pre-intervention	14.00	3.26	2.28	1.33	7.85 *	0.0001
Post-intervention	11.17	2.90				

Table 4 shows mean balance scores of pre-intervention and post-intervention in the experiment group are 14.00 and 11.17 respectively. The post-intervention balance scores are higher than the pre-intervention balance scores with statistical significance ( $p<0.05$ ).

**Table 5**

**Mean, standard deviation (SD), t-test and statistical significant level of pre and post intervention for falls in the experiment group. n=30**

Falls	$\bar{X}$	S.D.	$\bar{D}$	S.D.	t-test	Sig.(1-tailed)
Pre-intervention	2.36	1.18	2.36	0.95	4.45 *	0.05*
Post-intervention	0.77	1.19				

Table 5 shows mean score for falls of pre-intervention and post-intervention in the experiment group are 2.36 and 0.77 respectively. Falls in the post-intervention are fewer than the pre-intervention with statistical significance ( $p < 0.05$ ).

### CONCLUSION

The research results showed numbers of falls in the elderly after program intervention decreased from before program intervention with statistical significance ( $\bar{X} = 2.36$  and  $\bar{X} = 0.77$ ,  $t = 4.45$ ,  $p < .05$ ). Additionally, the experimental group had statistically significant fall frequency less than that of the control group ( $\bar{X} = 0.77$  and  $\bar{X} = 1.55$ ,  $t = 2.32$ ,  $p < .05$ ).

The results presented in this paper show a positive effect of exercise on injurious falls, including the most severe falls and those that result in medical care that is, those with the greatest consequences for people's health and use of resources. These results should provide useful additional evidence for healthcare providers to encourage participation in exercise fall prevention programmes, and further justification for decision makers to provide funding for those programmes. Systematic reporting of falls and injuries should be implemented in future randomised controlled trials, where the different levels of severity of the injury should be standardised and defined in advance, to improve the comparison between studies and subsequently the accuracy of pooled estimates for each category of falls. Future trials should also aim to deal with some of the limitations of published studies, in particular by providing data on other important outcomes (physical and cognitive functional capacities, psychological outcomes, and quality of life) and a thorough description of the implementation process.

When interpreting the clinical effectiveness data as well as the results of the economic evaluations two fundamental and inherent problems become apparent. These refer to the non-blinded assessment of fall-related endpoints and the marked heterogeneity of included studies. Fall-related endpoints are either reported by the participants themselves or, in long-term care facilities, by the staff. In most of the studies blinding against the intervention and consequently of endpoint assessment is not given. It remains unclear to what degree this problem causes biased results. Heterogeneity of included studies refers to many different aspects: e. g. the study population, the implementation of interventions, the type of control intervention and the methodological quality of the studies. A quantitative summary of the mostly heterogeneous results would have carried the risk to produce results with low or misleading informative value. Therefore, qualitative summaries are presented that also comprise descriptive analyses of potential interdependencies. When interpreting these results it has to be taken into account that analyses have been planned post-hoc (after acknowledging the evidence) and that they are not statistically backed up. Therefore they only allow the generation of hypotheses regarding the influence of context factors on the effectiveness of respective interventions.

Additional steps toward sustainability include conducting quarterly reports on compliance with interventions and recognition of the units with the best compliance rate. This would maintain awareness of



falls and the interventions that need to be used by all staff members. Quarterly reports involving all staff and their contribution would sustain awareness. Additional emphasis needs to be placed on the interventions with lowest compliance. For example, staff training could include videos or role play of post-fall huddles; case studies could be used to increase understanding of addressing risk factors in care plans.

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# THE RELATIONSHIP BETWEEN KNOWLEDGE AND COMPLIANCE OF STANDARD PRECAUTIONS AMONG SENIOR NURSING STUDENTS

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## ABSTRACT

The study aims to assess the level of knowledge, degree of compliance with standard precautions and study the relationship between knowledge and compliance with standard precautions of nursing students in private university, Thailand. The sample of 80 nursing students were selected by simple random sampling. Data were collected by using the questionnaires about knowledge and compliance of standard precautions. The knowledge and compliance of standard precautions questionnaires were used and developed by the researcher, the reliability were 0.73, 0.90. Data were analyzed by program for statistical values as descriptive and Pearson's correlation coefficient. The results showed that the level of nursing students knowledge about standard precautions as moderate knowledge (64.63%). The degree of compliance with standard precautions of nursing students as very high compliance (Mean 3.7). Correlation results were significant between knowledge and compliance of standard precautions ( $r=0.192$ ,  $p<0.05$ ).

**Keywords**–Standard precautions, Knowledge, Compliance

## INTRODUCTION

Infection is a major problem for health care systems in many countries [1]. Infections cause deaths, longer lengths of stay and a lot of money. According to the U.S. Centers for Disease Control (CDC) more than 2 million infections start every year in a hospital, nursing home or another healthcare setting, 70,000 people die every year as the result of getting an infection in a hospital, nursing home or another healthcare setting, the United States spends more than \$45 billion every year for the extra care and treatment that is needed when infections start in a hospital, nursing home or another healthcare setting [2].

Nosocomial infections are the most frequently reported adverse events in health care settings [3]. As the incidence of nosocomial infection has increased globally, [4] more than 1.4 million people worldwide acquire infectious complications in hospitals annually [5]. Health workers are exposed to occupational hazards such as filovirus infection on a daily basis while performing their duties [6]. Nurse is the part of health worker so they can be exposed to various infections during their nursing activities. Nursing students are also at risk of such infections and injuries due to accidental contamination during their practical occupational exposure. However, exposure to infectious material can be minimized by standard precautions which are designed to reduce the risk of acquiring occupational infection from both known and unexpected sources in the healthcare setting [7]. They are the basic level of infection control precautions which are to be used, as a minimum, in the care of all patients [8]. Standard precautions include: hand hygiene, use of personal protective equipment (e.g., gloves, gowns, masks), safe injection practices, safe handling of potentially contaminated equipment or surfaces in the patient environment, and respiratory hygiene/cough etiquette [8,9].

Several studies indicated that better knowledge of standard precautions among health care workers was one of the predictors of better compliance [12,13]. Despite the standard precaution guidelines were developed but compliance with aseptic precautions is known to be "poor and lacking" [10,11]. In Thailand, it was reported the practice of standard precaution in nursing students such as hand washing before contact patient

(45%), hand washing after contact patient (53%), wearing gloves (70%), recapped needle after use by two hands (30%) [14] that there was a poor of compliance of standard precaution.

In private university teachings of nursing program, standard precaution is a 3 hour curriculum module designed for the bachelor nursing students as a part of fundamental nursing course and clinically applied throughout their clinical education and emphasized as a part of their evaluation under subjects of patient safety. This practice standard precaution is evidence-based and outlines practice expectations for all nurses in all roles and practice settings. Studies on standard precautions are increasing over the world. However, there is limited number of studies that have been performed to assess nursing students' knowledge and compliance with standard precautions. Thus, the present study was conducted to assess knowledge and compliance with standard precautions in nursing students.

## OBJECTIVE

The aims of this study is to assess the level of knowledge, degree of compliance with standard precautions and study the relationship between knowledge and compliance regarding standard precautions of nursing student at one private university, Thailand

## METHODOLOGY

### Sample

This study was a descriptive correlational research design which was performed from 10<sup>th</sup> to 17<sup>th</sup> November 2016 to assess and study the relationship between knowledge and compliance regarding standard precautions. The sample is senior student nurses at one private university in Prathumtani, Thailand. Eighty senior student nurses participated in this study selected by simple random sampling

### Instrument

The instrument of study was asked about knowledge of standard precautions and compliance of standard precautions.

Knowledge of standard precautions :The questionnaire was developed by researcher. The questions were based on the basic concepts, content, and activity requirements of the standard precautions. The questionnaire was further reviewed by experts in infection control to ensure quality and content validity. There was validated for its reliability resulting in a statistical value of 0.73. (Kuder-Richardson-21) There have 18 items of closed ended questions in multiple choice, with possible responses of True or False. 'True' is given a value of 1 point, and 'false' with 0 points. Criteria for interpretation as follows; 87.50 – 100 as "Very Good Knowledge", 75.00 – 87.49 as "Good Knowledge", 62.50 – 74.99 as "Moderate Knowledge", 50.00 – 62.49 as "Fair Knowledge", and below 49.99 as "Poor Knowledge".

Compliance with standard precautions :The questionnaire was developed by researcher and reviewed by experts in infection control to ensure quality and content validity. The compliance questionnaire was validated for its reliability resulting in statistical value of 0.90 (Cronbach's alpha). The questionnaire has covered the 9 domains of standard precautions including Hand hygiene, Wearing gloves, Face protection (mask / goggle/face shields), Wearing gown, Patient care equipment, Environment control, Textiles and laundry, Safe work practice to prevent health care worker exposure to blood-borne pathogen and Patient placement [9]. There are 32 compliance items with a scale of 1-4 points: 1 = seldom, 2 = sometimes, 3 = usually, and 4 = always. In determining the level of compliance, the following scaling was used; for Very High Compliance = 3.50 – 4.00, High Compliance = 2.50 – 3.49, Average Compliance = 1.50 – 2.49 and Low Compliance = 1.00 – 1.49.

### Data collection

- Administration acceptance was obtained from the Vice Dean of faculty of a private university to collect the data.

- The researcher instructed senior student nurses on the purpose of the study. Confidentiality and anonymity of the sample were maintained by using only a code number on the questionnaire.
- Data collection took approximately one week.
- The duration spent by nursing students on answering the questionnaire and self-reported practice of standard precautions ranged from 20-30 minutes.

### Data Analysis

The data from the questionnaire was coded and entered into a computerized data base and analyzed. Frequencies, percentages, Means and Standard Deviation were used for analyzing the selected demographic data of student nurses, assessing level of knowledge and degree of compliance with standard precautions. Pearson's correlation coefficient was utilized to test the relationship between the knowledge and compliance of standard precautions. A p-value of equal to or less than 0.05 was considered statistically significant.

## RESULTS

The results of the present study are categorized as follows:

**Table 1**  
**Descriptive Sample Demographics**

Sample Demographics	n	Percentages (%)
<b>Gender</b>		
Male	6	7.5
Female	74	92.5
Total	80	100
<b>AGE</b>		
20-22	72	90
23-27	8	10
Total	80	100

There were 6 (7.5%) male and 74 (92.5%) female participants. Majority of the participants 72 (90%) were within the age bracket of 20 to 22 years old.

**Table 2**  
**Percentages of nursing students knowledge about standard precautions**

Knowledge of standard precautions	Correct answer	
	n	Percentages (%)
1. Nosocomial infections are Infection that occurred at 48 hours after hospital admission.	47	58.8
2. The most common cause of transmission in hospital is contact transmission.	51	63.8
3. Standard precautions are a set of infection control practices used to prevent transmission of diseases that can be acquired by contact with blood, body fluids, elimination and mucous membranes.	37	46.2
4. Hygienic hand wash is recommended after dressing wound of MRSA infected.	10	12.5
5. Correct hand washing before and after care patient to prevent transmission of agent.	74	92.5
6. Hygienic hand wash is recommended for after dressing wound has pus.	31	38.8
7. Wearing gloves is not a substitute for hand washing in patient care.	76	95.0
8. It is necessary to wash hands before using gloves.	75	98.3
9. Using gloves to care for patients of diarrhea.	35	43.8
10. Wearing goggles and mask when you suture wound.	50	62.5
11. Using surgical mask when you transport case of TB.	42	52.5
12. Patient's rooms should be cleaned with detergent.	20	25.0
13. Used needles should not be recapped after use to prevent infection	71	88.8
14. Separate contaminated blood cloth from clean cloth before delivered to cleaning.	57	71.2
15. At ward after we use the devices, the devices should be rinsed with water and delivered to supply for sterilization.	41	51.2
16. While cleaning devices you should wear protective personal equipment at all times.	70	87.5
17. Fabrics used in patients should not be placed on the floor.	64	80.0
18. Personal who carried waste should wear mask, heavy gloves, cap, apron and boots.	76	95.0
Total		64.63

This table shows the correct answers about the knowledge of participants on standard precautions. The total percentages of nursing students knowledge was 64.63% which is interpreted as moderate knowledge. Most of nursing students 98.3% answered correctly that it is necessary to wash hands before using gloves and only 12.5% of nursing students answered correctly that hygienic hand wash is recommended for after dressing wound of MRSA infected.

**Table 3**  
**Means, Standard Deviation of compliance with standard precautions of nursing students**

Compliance with standard precautions	Means	SD
Hand hygiene	3.68	3.22
Wearing gloves	3.83	2.07
Face protection (mask / goggle/face shields)	3.51	0.42
Wearing gown	3.66	0.41
Patient care equipment	3.57	0.57
Environment control	3.92	0.22
Textiles and laundry	3.89	0.27
Safe work practice to prevent health care worker	3.75	0.29
Exposure to blood-borne pathogen a		
Patient placement	3.47	0.54
Total	3.70	0.24

This table shows the compliance with standard precautions. The overall means were 3.70 which is interpreted as “Very High Compliance”. Analyze by domains found that environment control has the degree of compliance with mean of 3.92 which is interpreted as “Very High Compliance”. On the other hand, patient placement has the lowest degree of compliance with means of 3.47 which is interpreted as “High Compliance”.

**Table 4**  
**Show the relationship between Knowledge and Compliance of Standard Precautions.**

Variables	r-value	p-value
Knowledge and Compliance of Standard Precautions	0.192	0.049

*\*Significance level,  $\alpha = 0.05$ ; two-tailed*

This table shows the relationship between knowledge and compliance of standard precautions. As seen gleaned on the table, the relationship between knowledge and compliance of standard precautions posted r-value of 0.192 with a computed p-value of 0.049 which was lesser than the level of  $\alpha = 0.05$ .

## DISCUSSION

In the present study the overall percentages score of nursing students for knowledge was 64.63% which is interpreted as moderate knowledge. Similar studies that shows the result with Petrit. et al. reported that percentage score of nursing student had knowledge 60.6% [15] and Vaz et al. reported that 90.0% of nurses had knowledge of standard precautions [16]. Several studies indicated that better knowledge of standard precautions among health care workers was one of the predictors of better compliance [12,13]. This reinforces the need to intensify and strengthen teachings regarding standard precaution in classrooms and in hospital where student nurses practice.

Result of the present study indicated that compliance with standard precautions, findings revealed that students had very high compliance (means=3.70). This may be due to stringent monitoring done by the faculty relative to standard precaution practices during clinical training. Furthermore, the teachers monitored and followed up closely their student during the performance of standard precaution practices

Present study express that the level of knowledge was significantly correlated with compliance of standard precautions ( $r = 0.192, p < 0.05$ ) This result is supported by other authors. In the study conducted by Kim et al. it was revealed that knowledge is correlated to performance of standard precautions. [17] This result

firmly suggests that standard precautions knowledge was positively correlated with compliance, confirming that good standard precautions knowledge the better the activity compliance [12,13].

## CONCLUSION

The overall knowledge percentages for nursing students toward standard precautions was moderate knowledge. The overall means of compliance with standard precautions was very high compliance. There was significant relation between students' knowledge score and compliance with standard precautions. However, teaching must be strengthened, curricular reform and training are required to fulfill students' knowledge deficiencies related to standard precautions. Furthermore, nurse educators may need to provide an environment that models and promotes standard precaution practices by positive role modeling. Feather et al. reported that the teachers were important in modeling good clinical practices [18].

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