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RMUTT Global Business Accounting and Finance Review (GBAFR) is an academic journal prepared by Graduate Studies (Ph.D. Program), Faculty of Business Administration, Rajamangala University of Technology Thanyaburi (RMUTT). The GBAFR journal aims to disseminate good academic output related to business administration, accounting, and finance aspects of individuals from both within and outside the university. It is an intermediate for exchanging academic views as well as a source for promoting and developing research competency of faculty staffs, academicians, researchers, students, and any persons in terms of business administration, accounting, and finance fields.

This journal published five research papers, and one book review. In addition, each of the research articles presented such interesting concepts leading to creating new knowledge to the readers. Therefore, this journal is a channel disseminating the knowledge of business administration, accounting, and finance which related persons could apply it for further benefits.

Lastly, the editorial department and editorial board would like to considerably thank you for supporting and pushing forward this journal to occur and well accomplish. We are hopeful of your good cooperation and continuing support in the future.

Krisada Chienwattanasook, D.B.A.

Editor-in-Chief

Table of Content

THE EFFECTS OF MULTIPLE INTELLIGENT (IQ, EQ, AND AQ) ON EMPLOYEE PERFORMANCE: A CASE OF ABC AUTOMOTIVE CO., LTD.

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Abstract

The objective of this independent study was to study multiple intelligence including (intelligence quotient, emotional quotient and adversity quotient) that are related to job performance of employees in ABC Company located in Amata City Industrial Estate and to use the results of the study as a guideline for human resource department to develop, train and improve work ability of employees. The respondents consisted of 210 employees who worked in Automotive Company in Amata City Industrial Estate Rayong Province. The questionnaires were used to collect the data. The data analysis employed frequency, percentage, mean, standard deviation and multiple regression model. The analyzed results showed that the intelligence quotient and emotional quotient in terms of empathy and self-management had an effect on employee performance at the significance of 0.00, 0.03 and 0.00, respectively.

Keywords: Multiple Intelligent, Intelligence Quotient, Emotional Quotient, Adversity Quotient, Employee Performance

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Introduction

In the present, business world competition is very high. Not only the competition with their own country, but also with foreign countries, thus all companies should be outstanding in the business for both new and innovative product strategy.

Automotive company is a business focusing on the development of new technology and innovation to compete for market advantage to achieve business goals. Not only does it have the resources, capital, raw materials or good management, but it also requires good human resources. Thus, human resource is an important factor that helps the various operations succeed and meet the company goals. Therefore, the management of the company should take into account about the ability of employees.

Emotional intelligence (EI) is the ability of a person to capture, realize, control and understand the emotions of self as well as others to handle interpersonal relationships. The various quotients in questions including intelligence quotient (IQ) are important for analyzing the employees' capabilities and their behaviors to perform a particular task. The IQ determines how bright the employees are and the level of their analytical skills. Lastly, adversity quotient (AQ) measures the ability of person to deal with the adversities in life. Therefore, IQ, EQ, and AQ are very important and have significant roles to increase the efficiency of job performance and work in the present day.

Align with this, the researcher was interested in studying the multiple intelligence of the IQ, EQ, and AQ of employee performance, aiming to obtain useful information for the company to understand employee behavior. In addition, the management can also apply this research to develop employee training, recruitment, adapt the work environment and reduce staff turnover.

Research Objectives

1. To study multiple intelligence including IQ, EQ, and AQ that are related to the job performance of employees in ABC Company located in Amata City Industrial Estate

2. To use the results of the study as a guideline for HRD to develop, train and improve work ability.

Hypotheses

With the objectives of studying multiple intelligence (IQ, EQ, and AQ) associated with the job performance of employees in ABC company located in Amata City Industrial Estate, thus far, the researcher set the hypotheses as follows:

Hypothesis 1: There is a positive relationship between IQ and Job performance.

Hypothesis 2: There is a positive relationship between EQ and Job performance.

Hypothesis 3: There is a positive relationship between AQ and Job performance

Scope of the Study

This research is quantitative research which defines the scope of the study as follows:

1. Scope of the Content: In this research study, IQ EQ and AQ affecting job performance was divided into two variables including independent and dependent variables. The independent variables included demographic factors (gender, age, education, working experience) and quotient (intelligence quotient, emotional quotient and adversity quotient). In the meantime, the dependent variables included job performance.

2. Scope of the Population: The population of this study consisted of 210 officers who worked in Automotive Company in Amata City Industrial Estate.

Conceptual Framework and Research Framework

Independent Variable   **Dependent Variable**

Demographic factors
- Gender
- Age
- Education
- Working experience-
- Income level

Quotient
Intelligence quotient
- Logical-mathematical
  Raven's Matrices
  (Raven, 1938)
Emotional quotient
- Empathy
- Human relation
- Self-awareness
- Self-management
  (Goleman, 2001)
Adversity quotient
- Control
- Ownership
- Endurance
  (Stoltz, 1997)

Performance
- Job evaluation from manager
  (Campbell, 1990)

Figure 1 Conceptual Framework

Literature Review

1. Concepts and theories of intelligence quotient (IQ)

Intelligence can be defined as the ability to understand, plan, think, communicate, rationalize and comprehend. There are many understandable concepts which have been defined by academicians, however, it is not really enough to define it because the intelligence is the most complicated system by far. It is related directly to cognition, emotion and experience of a person

(Imlahi, 2015). In terms of meanings, the intelligence quotient, or IQ, is a score derived from one of several different standardized tests designed to assess relative intelligence. These standardized tests can be the Stanford-Binet Intelligence Scale and the Wechsler Adult Intelligence Scale (WAIS). In addition, the word "IQ" had been originally from the German term Intelligent-Quotient, termed by psychologist William Stern. (Oommen, 2014). Terman (1916) developed the original notion of IQ and proposed this scale for classifying IQ scores: Over 140 means "genius or near genius"; 120-140 means "very superior intelligence"; 110-119 means "superior intelligence"; 90-109 means "normal or average intelligence"; 80-89 means "dullness"; 70-79 means "borderline deficiency" and under 70 means "definite feeble-mindedness". For importance of the intelligence quotient (IQ), it is very useful for analyzing the employees' capabilities and their behaviors to perform a particular task.

2. Concepts and theories of emotional quotient (EQ)

Salovey and Mayer (1990) stated that Emotional Intelligence is increasingly relevant to organizational development and developing people, because the EQ principles provide a new way to understand and assess people's behaviors, management styles, attitudes, interpersonal skills, and potential. Goleman (1996) helped make the idea of Emotional Intelligence popular by presenting the concept of Emotion Intelligence as encapsulating fours aspects including self-awareness, social awareness, self-management and relationship management. The self-awareness can include emotional self-awareness, accurate self-assessment and self-confidence. The social awareness can include empathy, service orientation and organizational awareness. The self-management can include self-control, trustworthiness, conscientiousness, adaptability, achievement drive and initiative. Lastly, the relationship management can include developing others, influence others, communication, conflict management, leadership, change catalyst, building bonds, and teamwork and collaboration. Recently, the emotional quotient has very important role in understanding the emotions of self as well as others to handle interpersonal relationships.

3. Concepts and theories of adversity quotient (AQ)

Adversity Quotient (AQ) is the understanding and measurement of human resilience and capacity to live, work and deal with unavoidable and undesirable circumstances like stress, adversity, trauma or tragedy. It entails remaining stable and maintaining our cool, equanimous, stable, harmonious yet human composure. It means maintaining a healthy level of physical and psychological functions even in the face of chaos. According to the AQ model, the three levels of adversity also show that positive change at all three levels starts with the individual, and works up, affecting the workplace, and ultimately society at large. In order to create change, one must have the relentless fortitude to climb through adversity. In that case, one must develop a sufficiently high AQ (Stoltz, 1997). The study by Stoltz (2000) advised that these skills can be applied to oneself, to

others, and to the organization. In additionally, Canivel (2010) added that the AQ is very important for a principal to succeed in their performance and practices in the organization.

4. Concepts and theories of job performance

Job performance represents behaviors employees engage in while at work which contribute to organizational goals. These behaviors are formally evaluated by an organization as part of an employee's responsibilities. In order to understand and ultimately predict job performance, it is important to be precise when defining the term. Job performance is about behaviors that are within the control of the employee and not about results (effectiveness), the costs involved in achieving results (productivity), the results that can be achieved in a period of time (efficiency), or the value an organization places on a given level of performance, effectiveness, productivity or efficiency (utility). Furthermore, Campbell's (1990) also added that the individual performance is a core concept within work and organizational psychology.

5. Relationship of multiple intelligent (IQ, EQ, and AQ) and job performance

Phoolka and Kaur (2012) found that a large number of people who have high IQs are not always successful. It means IQ is not enough to succeed. There must be something more and over and above IQ that is required for consistently successful people. Then came the idea of EQ (i.e., Emotional Quotient or Emotional Intelligence). EQ is the measure of how well you control your emotions, how will you empathize with others , your level of self–awareness, your control on your impulses, your persistence and how effectively you interact with others. Therefore, possessing high EQ with a high IQ can strengthen one's chances of success because to be successful one not only requires intellectual capabilities but also emotional abilities. AQ is something in addition to these two, it explains the reasons some people persist and keep on striving hard in tough situations while others who are high on IQ and are emotionally well- adjusted still fail and give up. AQ can be useful to predict performance, motivation, empowerment, creativity, productivity, learning, energy, hope, happiness, vitality, emotional health, physical health, persistence, resilience, attitude, longevity and response to change.

Research Methodology

This section is about the methodology used to study the factors influencing the decisions of employee to resign from their company. For research design, the study used a quantitative method with questionnaires for collecting data from a respondent group.

Samples of the Research

The population of the employee total was 800 employees in Automotive Company in Amata City Industrial Estate Rayong Province. This study focused on those only working in the

office. In sample calculation, the study used the Yamane (1967) with a 95% confidence level and sampling error at exceeded 5%. The result indicated the appropriate sample size as of 435 employees. However, the study reached only 210 employees to answer for the questionnaires.

Research Instrumentation

In this study, the researcher used quantitative research techniques to gather the data and also used other studies, theories, concepts, research, and documents to create the questionnaires. The questionnaires consist of the following parts.

Part 1. The demographic data includes gender and education level (nominal scales) and age, working experience, and income level (ordinal scales).

Part 2. Intelligence quotient (IQ) contains 36 questions of Advanced Progressive Matrices Test of Raven (1938) with time limited to 60 minutes. The assessment scores ratings are: 27-36 (very highly exceptional), 24-26 (high expert), 21-23 (expert), 19-20 (very high average), 17-18 (high average), 13-16 (middle average), 10-12 (low average), 6-9 (borderline low), 3-5 (low) and 0-2 (very low).

Part 3. Emotional Quotient (EQ) applied the concept and theory of Goleman (2001) and created 20 questions to test 4 EQ competencies including empathy (5 questions), human relation (5 questions), self-awareness (5 questions) and self-management (5 questions). The questions employed 5-point Likert scale.

Part 4. Adversity Quotient (AQ) applied concept and theory of Stoltz (1997) and created 18 questions to test 3 AQ competencies including Control (6 questions), Ownership (6 questions) and Endurance (6 questions). The questions employed 5-point Likert scale.

Part 5. Job performance included the opinion rated by superiors to their employees. The questions employed 5-point Likert scale.

Data Analysis

The researcher used SPSS (statistical package for the social science) for the statistical analysis. The analysis consisted of two parts including descriptive and inferential analysis. For the descriptive analysis, the researcher frequency, distribution and percentage to describe the demographic information (gender, age, education and working experience). For inferential analysis, Linear Regression Analysis was hired to test the relationship between the independent variables and dependent variables. The linear regression equation is $y = a + bx$

<p style="text-align:center">Results</p>

1. Descriptive analysis

      1.1 Study of demographic information of respondents

      After studying about the demographic information of the respondents, the researcher can summarized the results as follows. Generally, this part represents the respondent's background for this research. The respondents are 57.1% male and 42.9% female. The highest frequency of respondent's age range is 25-30 years old, equivalent to 47.1% that is slightly higher than the second rank of 31-35 years old with a percentage of 21.9% for the rest, and the frequency percentage is small when compared to the above. The education level starts from Diploma, High vocational certificate until Master degree level. Most of the respondents are in the Bachelor degree range at 81%. Most of the respondents work in the current organization for 1-3 years equivalent to 46.2%. The monthly income level starts from below 30,000 Baht up to more than 70,000 Baht per month with the majority of monthly income levels below 30,000 Baht equivalent to 57.1% of the respondents.

      1.2 Study of multiple intelligent (IQ, EQ, and AQ) and job performance

Table 1 Descriptive statistic of the factors which are related to change and development

Internal Factor	Opinion level		
	$\bar{x}$	SD	Interpretation
Intelligence Quotient	23.67	4.75	Very high
Emotional Quotient - Empathy	3.89	0.685	High
Emotional Quotient - Human relation	3.52	0.753	High
Emotional Quotient - Self-awareness	3.96	0.715	High
Emotional Quotient - Self-management	4.07	0.717	High
Adversity Quotient - Control	3.76	0.590	High
Adversity Quotient - Ownership	3.81	0.633	High
Adversity Quotient - Endurance	4.06	0.709	High
Job performance	4.00	0.761	High

      From the Table 1, the finding indicated that all values from intelligence quotient, emotional quotient, adversity quotient and job performance are favorable. In terms of the intelligence quotient (IQ) created by Advanced Progressive Matrices Test, it was found that most respondents were rated in very high level with an average of 23.67. In terms of the emotional quotient (EQ), the finding indicated that most of the respondents had "high level" opinion with mean score as of 3.89, 3.52, 3.96 and 4.07. In terms of adversity quotient (AQ), the results indicated that most respondents had "high level" opinion with mean score as of 3.76, 3.81 and 4.06. Lastly, in terms of job performance,

the results indicated that most respondents had "high level" opinion with mean score as of 3.76, 3.81 and 4.06.

2. Inferential analysis

Table 2 The results of IQ, EQ, AQ related with job performance by using regression analysis

The effects of multiple IQ EQ AQ on employee performance	Unstandardized		Standardized	T	Sig.	Collinearity Statistics	
	B	SE	Beta			Tolerance	VIF
(Constant)	2.26	0.56		4.06	0.00		
IQ	0.07	0.01	0.42	6.26	0.00*	0.79	1.26
EQ - Empathy	-0.33	0.15	-0.18	-2.25	0.03*	0.57	1.76
EQ - Human relation	-0.18	0.12	-0.13	-1.51	0.13	0.52	1.93
EQ - Self-awareness	0.11	0.13	0.08	0.85	0.39	0.37	2.71
EQ - Self-management	0.44	0.14	0.34	3.24	0.00*	0.32	3.15
AQ - Control	0.12	0.20	0.06	0.61	0.54	0.32	3.11
AQ - Ownership	-0.27	0.18	-0.13	-1.49	0.14	0.45	2.20
AQ - Endurance	0.10	0.16	0.06	0.63	0.53	0.38	2.65
R = 0.539; R square = 0.290; Adjusted R square = 0.262; Durbin Watson = 1.483; F ratio 10.269							

From the Table 2, the regression analysis showed that the model had coefficient as of 0.539. The R square as of 0.290 which means that this model can be used to predict the job performance for 29.0%. The Durbin Watson was as of 1.483, meaning that the variables had autocorrelation. However, the Durbin Watson value was much closed to acceptance rate (1.5), the data can be taken to analyze the hypotheses with detail as follows:

Hypothesis 1: There is a positive relationship between IQ and job performance

H_0: There is no significant relationship between IQ and Job performance.

H_1: There is a positive relationship between IQ and Job performance.

From the Table 1, the findings indicate that the IQ has a direct positive relationship with job performance at a significant value as of 0.00, less than 0.05, then reject H_0 and fail to reject H_1.

Hypothesis 2: There is a positive relationship between EQ (empathy, human relation, self-awareness and self-management) and Job performance

H_0: There is no significant relationship between EQ (empathy, human relation, self-awareness and self-management) and Job performance.

H_1: There is a positive relationship between EQ (empathy, human relation, self-awareness and self-management) and Job performance.

From the Table 2, the findings indicate that the EQ in terms of empathy and self-management have a direct positive relationship with job performance at a significant value as of

0.03 and 0.00, less than 0.05. In the meantime, the EQ in terms of human relation and self-awareness have no a direct positive relationship with job performance at a significant value as of 0.13 and 0.39, higher than 0.05. Therefore, the hypothesis then reject H_0 and fail to reject H_1.

Hypothesis 3: There is a significant relationship between AQ (Control, Ownership and Endurance) and Job performance

H_0: There is no significant relationship between AQ (Control, Ownership and Endurance) and Job performance.

H_1: There is a positive relationship between AQ (Control, Ownership and Endurance) and Job performance

From the Table 2, the findings indicate that AQ in terms of control, ownership and endurance has no relationship with job performance at a significant value as of 0.54, 0.14 and 0.53, higher than 0.05, then fail to reject H_0 and reject H_1.

Discussion and Recommendation

1. Discussion

After the studying the effects of multiple intelligent (IQ, EQ, and AQ) on employee performance by using a case of ABC Automotive Co., Ltd., the researcher can discuss the relevance remarkably referring the studied hypotheses. The detail are below.

1. There is a positive relationship between IQ and Job performance

The result of the positive relationship between IQ and Job performance shows that if the employee has high IQ score they will also get a high job performance (Gardner, 1987). He argued that these intelligences are relatively distinct from each other and that each person who has developed it may increase the success of work. This affects the growth and profitability of the company.

2. There is a positive relationship between EQ and Job performance

The result of positive relationship between EQ and Job performance expresses that if the employee has a high EQ score they will also get a high job performance (Goleman, 1996). Emotional Intelligence is increasingly relevant to organizational development and developing people, because the EQ principles provide a new way to understand and assess people's behaviours, management styles, attitudes, interpersonal skills, and potential. Emotional Intelligence is an important consideration in human resources planning, job profiling, recruitment interviewing and selection, management development, customer relations and customer service.

3. There is no significant relationship between AQ and Job performance

Although the study had a negative relationship between AQ and Job Performance, this may come from the variable of demographic factors and the rating from the manager level but there are numerous research studies asserting that there is a positive relationship (Canivel, 2010).

This result shows the AQ factor cannot determine job performance but it involves another important factor. Stoltz (1997) found that AQ can be measured and enhances the effectiveness of teams, relationships, families, organizations, communities, cultures, and societies making it one of the most important tools that can be relied upon to develop and improve the performance of human resources and can influence job performance. Lopes, Salovey and Strauss (2003) also suggested that social support was involved in the AQ and academic Performance.

2. Recommendations

This part is categorized into two parts which are recommendations for the implications and recommendations for future research.

2.1 Recommendations from implications

This study proved that IQ and EQ are the factors that can have an impact on employee performance. This result is beneficial to help companies concentrate on employee's ability and attitude. The outcome defines that if the employee has a high level of IQ and EQ, it can create good performance and also make the company successful.

The result of AQ from this study is not a factor that impacts the employee performance, but the human research department may look into incorporating AQ in their working environment, in order to improve the hiring process and the employees' state of mind in handling difficulties in the different fields of work which finally will be able to help develop organizational performance.

2.2 Recommendations for future research

1) Research should be done for more factors such as the environment and stress from work that affects job performance.

2) Research should be continued on more variables of IQ, EQ, and AQ, for example, more IQ tests, EQ and AQ of how employees react when facing a big problem.

3) Research should be continued to specify the factors that relate directly to job performance.

4) Research should be expanded for a sample group to different occupations because the sample group has different IQs, EQs, and AQs for different situations that may have different results.

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THE NEXUS BETWEEN COMPANY INCOME TAX COLLECTION AND INFORMATION COMMUNICATION AND TECHNOLOGY (ICT)

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Abstract

The importance of taxation in the fiscal policy management of a nation and veritable source of revenue cannot be overemphasised. Many governments across globe seek ways to improve the efficiency of generating tax revenue including adoption and use of ICT in tax operations. This paper examines the effects of the usage of ICT in tax operations in developing countries using Nigeria as a case study. Data were collected using structured questionnaires and 4 interviews. 240 questionnaires were distributed to senior staff of Federal Inland Revenue Services with 230 returned and found usable for the investigation. With the instruments of Statistical Package for Social Sciences version 21, Spearman's rho correlation was used to establish relationship between ICT usages in company income tax collection (CIT) collections. Thematic analysis was employed for the interview aspects of the data.It was found that there is a relationship between effective company income tax (CIT) collection and the use of ICT in tax operations. The tax revenue generation increases with level of investments in information technology.

Keywords: Information Communication and Technology, Tax Revenue, e-Tax Payments, Tax Collections, Tax Compliance

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Introduction

Taxation is one of the important fundamental issues in the management of national revenue, particularly in advanced countries. It has played a significant role in civilized societies. Taxation is vital to sustainable development, as it supports the basic roles of an effective state and sets the background for economic growth; more frequent overlooking is the role of taxation as a vehicle for the development of receptive and responsible government and for the growth of state capability. For any government to meet its recurrent expenditure, both internally and externally intensified revenue generation efforts are needed, mostly in the form of tax revenue. Chatama (2013, 1) defines taxation as being "commonly used as the imposition by government of compulsory contributions or levies on the citizens, property, income, commodities, transactions and so forth, for the purpose of raising revenue for government expenditure such as health, defence, law and order, education and infrastructure, to encourage investment, and to defend the local market for domestic products through heavy taxes on unnecessary imports". In addition, taxation is the communal way any government sources its revenue, and it is often collected from the public in several ways. It involves the transfer of resources from individuals and corporate bodies to government, which can be used to finance expenditures such as social overhead projects and infrastructure for economic growth. Nightingale (2001, 8) explains that "taxation is part of the price to be paid for an organised society" and he identified six reasons for taxation: "provision of public goods, redistribution of income and wealth, promotion of social and economic welfare, economic stability, harmonization and regulation". The strongest and most effective fiscal instrument is taxation, which eases reduction of private consumption, increases investment and also involves the collection of resources from individuals or corporate bodies by the government for economic development. The economic and social goals of taxation involve influencing and controlling economic behaviour, transferring resources from the private to the public sector, distributing the cost of governance and promoting economic development.

In line with these numerous definitions of taxation, it is a mean by which any government generates funds, and it involves the transfer of resources from individual and corporate bodies to government to finance expenditures such as health, defence, law and order, education and infrastructure. It also encourages investment and defends local markets and domestic products through heavy taxes on unnecessary imports. A tax is a fee charged or levied by any government on a product, income or activity to finance public goods and services. Tax is also a main source of government revenue all over the world, and is used for the provision of public goods, maintenance of law and order, defence against external hostility, trade and business regulation to ensure social and economic development.

According to Kieran et al. (2013, 14), "tax issues are high on the agenda of African governments, and at an international level Prime Minister David Cameron has used the UK's presidency of the G8 to call for greater efforts to promote trade, tax compliance and transparency".

Clause 4 of the Lough Erne Declaration released at the G8 summit in June 2013 stated that "developing countries should have the information and capacity to collect the taxes owed them and other countries have a duty to help them" (Kieran et al., 2013, 14).

However, many countries, mostly developing countries, are faced with the problem of generating the revenue to meet their expenditures. Budgeted revenues always fail to meet the expected expenditures, so relying on foreign aid and taxation is then seen as the most suitable, efficient and effective means of generating revenue. Governments are required to provide public goods and services that would improve the living standards of citizens.

According to Osei and Quartey (2005, 1), "over the past two decades, the government of Ghana has consistently spent more than it is able to generate as revenue and the gap is often financed with foreign aid which has perpetuated the country's aid dependency". Tax is an important issue and fundamental for the development of any country.

The basic objective of taxation is to raise resource for national defence, creation of infrastructure and social upliftment schemes and to make regular and systematic resource mobilization obligatory. Other objectives are stated as follows:

i) Regulatory objectives: the state can discourage consumption of harmful and undesirable goods by levying prohibitive rates of tax.

ii) Objectives related to reducing inequalities: taxation can be a powerful weapon in tackling income disparities, and tax incentives and exemptions to start industries in the backward regions can be a good method of dealing with the problem.

Governments all over the world have been using information technology for decades in many ways, but as ICT and computing power grows rapidly, these developments provide great opportunities for tax agencies to improve service quality and to concurrently reduce service costs. The e-tax payment system is an application of ICT to improve efficiency in tax collection, and it does not require taxpayers to physically interrelate with the tax authorities.

Instead, it enables taxpayers to pay their taxes online. "The concept of electronic tax payment originated in the U.S.A., other technology-enabled nations have also moved quickly to utilize the modality, including Australia, Canada, England, Germany, India, Singapore and Taiwan" (Turner & Apelt, 2004, 2)

This study will establish the existing gaps in the adoption of ICT in collecting company income tax to generate revenue for the government to meet its required overhead. In addition, the study will become useful for those who wish to undertake more research in this area. It will make several useful research contributions, which include the areas suggested for future work and questions that are important to e-tax payment in developing countries, especially in Nigeria. Finally, this study is the first of its kind, and it will contribute to the literature on technology adoption in company income tax collection. It also offers important insights to the Federal Inland Revenue

Services (FIRS) in improving and enriching their online tax payment system and online services in
General

Literature Review

The use of ICT in general has changed the service delivery process, business models and
people's expectations of the quality and efficiency of information. Tomsett (2008) supports the
view that "the administration of any adopted taxation system should be acceptable and easy for
taxpayers and efficient" (Kennedy & Sugden, 2007).The differences between traditional
bureaucratic and e-tax payment systems are shown in Table 1 below.

Table 1 The traditional bureaucratic and E-tax payment systems

	Bureaucratic	**E-tax payment system**
Orientation	Production cost-efficiency	User satisfaction and control, Flexibility
Process organisation	Functional rationality, departmentalization, vertical hierarchy of control	Horizontal hierarchy, network organisation, information sharing
Management principle	Management by rule and mandate	Flexible management, interdepartmental team work with central coordination
Leadership style	Command and control	Facilitation and coordination, innovative entrepreneurship
Internal communication	Top down, hierarchical	Multidirectional network with central coordination, direct communication
External communication	Centralized, formal, limited channels	Formal and informal direct and fast feedback, multiple channels
Mode of service delivery	Documentary mode and interpersonal Interaction	Electronic exchange, non-face to face Interaction
Principles of service Delivery	Standardization, impartiality, equity	User customization, personalization

Source: Adapted from Ho (2002)

According to Ho (2002) "these new paradigms thrust the shift toward the e-tax paradigm,
which emphasizes coordinated network building, external collaboration and taxpayer services".
Governments worldwide are leveraging ICT in many ways to tap potential cost savings and
efficiency when providing online services to citizens. Slemrod (1990) noted that the design of an
optimal tax system requires consideration not only of changes in the technology of collecting taxes,
but also of how technology may alter the economic environment in which governments seek to

collect revenue. According to Bird and Zolt (2008), "Policymakers need to consider the impact of changes in technology on both the design of specific taxes and the relative use of different tax instruments in raising revenue".

However, Yu (2002) stated, "electronic commerce flourished because of the openness, speed, anonymity, digitization, and global accessibility characteristics of the internet, which facilitated real-time business activities, including advertising, querying, sourcing, negotiation, auction, ordering, and paying for merchandise". Therefore, ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form such as radio, television, cellular phones, computer and network hardware and software, satellite systems as well as the various services and applications associated with video conferencing and distance learning.

Adegbile and Fakile (2011) studied the relationship between company income tax and Nigerian economic development. The study failed to state the method used to collect primary data. The study used Chi-square and multiple linear regression analysis for the data obtained. The findings revealed that there is a substantial relationship between company income tax and Nigerian economic development. Evasion and avoidance are major hindrances to revenue generation, along with taxpayers' non-compliance with tax laws and ineffective tax administration that has generated enough loopholes in this source of income. The study suggests, like others, the computerization of integrated tax operations for enhancement of revenue collections. The study also suggested what government agencies can do to increase company income tax revenue generation and collection, while at the same time contributing to the literature on company income tax collection. The current study will use questionnaires and interviews to collect data to explore the impact of ICT in company income tax collection in Nigeria.

Hai and See (2011) examined the intention of tax non-compliance. The objective of the study was to provide a literature review on factors that affect the intention of tax non-compliance behaviour among sole proprietors. The study failed to state the method used for data collection. The findings of the study revealed that the literature review helped identify gaps for future research towards behavioural tax non-compliance intention. These gaps are unapproved tax preparers, unapproved account preparers and future expected tax costs.

However, the study failed to consider IT usage. Many small business entities are still sing the services of unapproved tax preparers (Liew, 2004). Collin et al. (1992) recommended studying the impact of unapproved tax preparers on tax non-compliance. The unapproved account preparers need not follow the tax regulations and professional ethics set by the approved accounting board. According to Jackson and Jones (1985), "if taxpayers know [the] expected cost of tax non-compliance, then it is a factor that may change taxpayers' noncompliance decision-making". This is why the current study will consider tax costs; if a taxpayer wishes to evade tax, they must understand what the future expected tax costs are likely to be.

Kerr (2012) examined tax return simplification. The objectives of the study were to look at the concept of a default pre-filled tax return within the Australian context and contrast this with the system of reduced filing used in the UK and New Zealand; the study would then draw similarities with New Zealand's personal tax summary. It explored the literature on taxpayer engagement amid the concern that taxpayers may potentially engage less with the tax system if they do not have to lodge tax returns. The findings of the study revealed that the best practice in future tax administration may be a hybrid system where elements of both reduced filing and pre-filling co-exist, and people with simple tax affairs will not have to lodge tax returns and those with arrangements that are more complex will file pre-filled returns. This study highlights that policymakers should consider it worthwhile to weigh up the merit in making such changes for a short-term solution and explore the capacity for longer-term gains. To reiterate, the benchmark of a pre-filled tax return is that a taxpayer only needs to confirm their details are correct. The study failed to consider the use of IT and whether taxpayers file their tax returns manually or via automation. Although extensive research is required to determine whether revenue authorities should continue to issue refunds to the majority of taxpayers, this current study will add to this research.

Githinji et al. (2014) examined the effects of information and communication technology (ICT) on revenue collection by Kenyan counties. The objective of the study was to establish the mode of strengthening domestic resource mobilization by utilizing ICT; it also reviewed information system theories and examined the impact of management information systems on revenue collection in Kenyan counties. The study utilized ICT in relation to technological theories. Additionally, it proposed efforts to be devoted to extensions of the Technology Acceptance Model (TAM) to examine county governments and to take ICT as an important tool for delivering services to citizens and businesses in terms of revenue collection systems.

The establishment of an internal control system, a management information system, guaranteed strong control of the largest taxpayers and ICT infrastructure and revenue collection in county governments and utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT). The study used Hofstede (1997) and culture as a system of collectively held values, and looking at culture from this angle, it differs across continents, nations, countries, sub countries and ethnic groups. Their study found that the most comprehensive study of national cultures has been used in some revenue collection system studies, which are discussed under revenue collection system and culture and where the ultimate intent is not to control the behaviour of people in predefined ways, but to influence them to make decisions and take actions that are likely to be consistent with the countries goals. They recommended that the countries governments should use ICT as an important tool for delivering services to citizens, tax collection, monitoring county project and other business operations within the countries.

Dutt (2004) examined the optimization of corporate tax collection in developing countries - with potential application to Mozambique. The objective of the study was to draw attention to the potential impact of deploying best practice tax collection projects in sub-Saharan Africa. The study used a simple and highly operational model, which may not allow the generalisation of the study findings. The findings of the study revealed that the Mozambican government does not have the means to generate fair taxes to fight poverty; hence, fair distribution of wealth is in danger, which could lead to further tensions between South and North Mozambique. The findings also revealed that in the case of Africa and Mozambique in particular, both a top auditing team and a flat fee structure for small businesses need to respect the principles and guarantee an immediate impact in government revenue collection. The study has some limitations, such as the model possibly being used in discriminately throughout all sectors of the economy, regardless company size. Additionally the small and medium agricultural companies and the medium industrial companies were not included. The study also failed to consider the impact of ICT on tax collection.

In FIRS, "several technology-based initiatives have been implemented in the last six to seven years, which have yielded significant dividends in improved tax collection, increased taxpayer confidence in the tax system, increased efficiency in tax operations and reduction in leakages" (Omoigui-Okauru, 2011). However, "IT is being deployed rapidly in the delivery of public services even in developing countries such as Chile, Brazil and India with its consequent effect on society; some countries, including Nigeria, seem to be slower in pursuing e-Government practices".

In a more recent study, Chatama (2013) examined the impact of ICT on taxation by focusing on the Large Taxpayer Department (LTD) of the Tanzania Revenue Authority. The objective of the study was to investigate how the use of ICT has modernized tax administration procedures and improved revenue collection at the Large Taxpayer Department of the Tanzania Revenue Authority. The study used secondary data and literature reviews. The findings revealed that the availability of ICT infrastructure and facilities at the Large Taxpayer Department is contrary to scholarly observation of ICT use limitations in developing countries, and LTD has proven to be well equipped with ICT. Also the taxpayers' and tax consultants' (firms) application of ICT has affected both the design and administration of the tax system in Tanzania. In addition, the findings of the study revealed that the impacts of ICT use can be seen in a number of ways, including; reduced administrative and collection costs; decreased need for personnel; time savings for taxpayers due to fast processing; transparency in assessment, collection, and related processes; reduced tax compliance costs; reduced communication costs; and timely access to information, which results in preventing revenue losses and improving efficiency and performance in revenue collections. The study expressed that although other factors in the economy, like increased internal trade, reduced importation and more reliance on home products, may have caused the increase in revenue collection, it is worth remembering that no matter how much the economy has prospered,

if there is no good tax administration, the revenue will only disappear into wrong hands and will not be reflected in collections. If this study is carried out in another developing country with a different level of infrastructure development, the result may not be the same. The study used secondary methods, but the current study on Nigeria will use mixed methods in addition to secondary methods.

Geetanjali (2011) examined ICT application in service delivery for the Inland Revenue Department (IRD), Nepal. The study used a combination of content analysis, survey through in-depth interview, questionnaires and observation to collect data. The findings showed that the average response of service providers and seekers towards the effectiveness of e-services is positive. The study revealed that organisational factors (human resources, ICT infrastructure, financial resources and attitude of service providers) are associated with the effectiveness of e-services, while customer factors (customers' demand and customers' knowledge) are not found to be associated with the effectiveness of e-services. It also revealed that the e-services of IRD are effective, and the organisational factors (not the customer factors) influence e-services delivery. Some distinct features of Nepal, such as a low level of internet penetration, poor rights, consciousness of public customers, the patron-client relationship and a sense of fear of the revenue department, might have made customers hesitant in taking a more active role in making e-services effective. The study failed to assess the customers' roles in effective e-service delivery; the research mainly focused on a few organisational aspects, and the effectiveness of e-services in the study was looked at from the perspective of improvement in service delivery, which was again measured by time effectiveness of e-services.

Additionally, the study concentrated only on the effectiveness of e-services in the present scenario. However, the current study will examine other major objectives of governance, like ensuring transparency, reducing corruption, reducing cost, and quality of services, which add more value to the effectiveness of e-services. E-service delivery in itself is a new phenomenon in some developing countries, and there have been scant attempts to explore the relation of organisational and customer factors with e-service delivery of an organisation. The study helps to identify the lubricating/hindering factors for delivery of services with the use of ICT to the public, and it is useful to academics and future researchers.

Muwonge (2011) examined the influence of the electronic tax filing system on tax compliance and tax collection. The objective of the study was to ascertain the extent to which e-tax has achieved its objectives and to establish the ease of use of the system and the attitude of taxpayers towards the system. The study employed a survey research design and self-administered questionnaires. The findings of the study reveal the following: i) the electronic tax filing system has improved tax compliance, as it is easy for taxpayers to assess their tax obligations accurately and to file their returns on time; ii) the attitudes of taxpayers and that of URA staff towards the use of e-tax is positive, as a considerable number viewed the use of the system as being good as the new

system has reduced costs on the taxpayer's side; and iii) the current e-tax servers are overwhelmed by the number of users, hence the reason why they are so slow, and the e-tax filing system has the potential of increasing tax compliance and revenue collection in URA; however a lot has to be done to avert the obstacles that may make it impossible. The study has some limitations, such as the small sample and the results of the study cannot be generalised. Some additional factors need to be considered, primarily non-technological factors including culture, infrastructure and human resources.

Maruf (2004) examined the efficiency of the tax authority and collection of tax revenue. The objective of the study was to explore the effectiveness of the large taxpayer unit (LTU) in increasing the efficiency of the tax authority. Using secondary data and reviews of LTU's functions, the study reviewed their effectiveness in developing countries, particularly in Bangladesh. The findings revealed that countries may gain significant benefits from setting up LTU. Moreover, the experience of many developing countries shows that setting up special operations to control large taxpayer compliance has resulted in increased compliance and effective TA. Many of the countries surveyed reported that establishing LTU helped them address major operational weaknesses in tax authority. The LTU has been a pilot project for the tax authority to test reforms that will be later extended to other taxpayers. This study provides an overview of the structure and functions of large taxpayer operations. There is not much available data and analysis about the operation of LTU in Bangladesh, therefore, the results of the study cannot be generalised. In the reforms of tax administration, each country needs to take stock of the existing situation and to plot the most desirable and practicable course, as pointed out by Silvani and Radano (1992). The study failed to consider the use of ICT.

One of the ways to improve efficiency and effectiveness is informatisation, which could support several services provided by the tax authority, such as filing tax returns, information services and counselling (Klun & Dečman, 2002). In a related study, Turner and Apelt (2004) examined globalisation, innovation and information sharing in the tax system. The study's objective was to apply a new conceptual framework to describe and explain the factors that have enabled the diffusion, adoption and operationalization of electronic lodgement within the Australian tax system. The study used textual analysis and in-depth interview methods. The findings revealed that a coalescence of factors and actors was pivotal. In addition, the findings revealed that globalisation, information exchange and advances in computer hardware and software technology were key drivers. The study highlights that Australia is amongst the countries championing the global phenomenon of use of electronic lodgement services within tax authorities. However, the framework provided a comprehensive means to analyse and explain the diffusion and adoption of electronic lodgement strategies within the Australian environment, and the result may have been different if the same study had been carried out in a different environment, particularly in

developing countries. The differences between the e-tax payment system and traditional tax payment are:

Table 2 The difference between e-tax payment systems and traditional tax payment

Difference	Electronic tax payment system	Traditional manual tax payment
Transparency	ICT has the potential to improve interaction between tax authority and taxpayers, fostering transparency and accountability in administration of company income tax collections	There is no transparency. Instead, there are sharp practises.
Dissemination	There is availability of public information from tax authority to company income taxpayers through radio, and websites, as well as the number of information requests submitted by the taxpayers and queries answered by the tax officials	No dissemination of tax information
Speed	Most people can do their online tax return at Etax.com. Fast to process. No more last minute trips to the Post Office – with e-file, just hit Send.	The visitation of a tax practitioner's office or filling in the tax authority's office, paper tax forms often takes 1 hour or more.
Time savings	The use of ICT in company income tax collection saves time for both the taxpayers and tax authority	Time spent travelling to tax authority's office or in a practitioner's office waiting room can make this even longer.
Location	You can complete your return anywhere at any time such as home, work, in a cafe – even on holidays on the other side of the world – no problems.	You need to visit tax practitioners in their office with all your documents, or carry around a traditional tax pack, both of which can be inconvenient.
Price	Etax.com offers an easy online tax return plus professional accounting support at very low fees.	The cost of visiting a tax practitioner could be more expensive.
Easy	Simple tax online tax payment using a credit card, electronic funds withdrawal or, in some cases, the Electronic Federal Tax Payment System. Taxpayer can get instant support through email or phone.	To complete tax form requires appointments to be made, time off work and many confusing questions – that is not easy.
Service	Selfless service. E-tax payment system checks for errors and necessary information, increasing the accuracy of your return and reducing the need for correspondence with the tax authority to clarify errors or omissions. The taxpayer is notified electronically, acknowledging as the tax authority received the payment.	Involved employment of tax practitioners. Otherwise, taxpayers needed to carry out the services in the tax office.

Ssewanyana and Busler (2007) examined the extant of adoption and usage of ICT in firms, with a focus on computers and the internet. The questionnaire was used. The findings of the study revealed that the adoption and usage of ICT by firms in developing countries follow the same pattern as in developed countries, and they only differ in the level of usage and adoption. However, the firms do appreciate the contribution of ICT to their performance, but there are various barriers, which require governments to adopt appropriate policies to address them. It revealed that most small firms adopted ICT when the government started cancelling some taxes. The result of the study may not have been the same if replicated in a different environment.

Koson (2006) examined the impact of ICT on the growth of the service industry. The objective of the study was to explore the productive relationship between ICT and services. In addition, the study examined how ICT as a technological innovation, combined with non-technologicalfactors, affects the economic performance of the firm. The findings of the study revealed that ICT is the key success factor for service firms. The results demonstrate that the presence and intensity of ICT could be used to explain the higher growth in productivity and profitability of service firms. The effect is even more palpable when ICT innovation is undertaken jointly with non-technological innovations.

Theoretical underpin

The Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) were two theories considered more suitable for this study, after considering the merits and demerits of all available models to explore the impact of ICT on collection of company income tax. The Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) are well established in the IT arena and appear to be widely accepted.

Research Propositions

From the foregoing the following research propositions were formulated:

Proposition 1: The introduction of ICT has enhanced CIT collection and improved revenue generation.

Proposition 2: The use of ICT has impacts on company income tax compliance and the cost incurred from enforcing compliance.

Proposition 3: ICT can potentially contribute to the effectiveness and efficiency of company income tax collection.

Methodology

This study proposes to use a mixed methods approach both interviews and questionnaires (quantitative and qualitative) in order to achieve its main objectives. A mixed methods approach is used to gather data that could not be obtained by adopting a single method, and it helps to minimise

the weakness of a single method and ensure the validity of gathered data. In addition, it is used to ensure that all angles of its target population are covered in terms of understanding the deeper structure of the research problems. 230 questionnaires were finally analysed out of 240 sent out. 10 questionnaires could not be used because they were not properly answered or incompletely answered. 4 senior staffers from Assistant Director Level in Federal Inland Revenue Services were interviewed.

Analysis

Attempts were made to analyse relevant primary and secondary data collected with descriptive statistic to provide necessary input data for further analyses. Following the trend started above; the analyses were conducted by means SPSS version 21 for descriptive statistics and strengthened with nonlinear regression for data generated through the questionnaire.

Proposition 1: The introduction of ICT in Company Income Tax Collection has enhanced and improved revenue generation

Spearman's rho correlation relationship between ICT usages in CIT collection with other influencing factors.

Table 3 Spearman's rho correlations

Item	Coefficient				
The use of ICT has minimised errors in CIT return processing	1	.429**	.438**	.358**	.438**
Using ICT facilitates the company income tax collection process	.429**	1	.294**	.341**	.333**
ICT allows using available data more effectively to improve forecasting of fiscal revenue	.438**	.294**	1	.303**	.433**
Using the ICT helps to file company income tax (CIT) returns	.358**	.341**	.303**	1	.395**
The ICT system facilitates faster payments of CIT than manual the system	.438**	.333**	.433**	.395**	1
Using ICT in collection of CIT increases the overall revenue collection	.442**	.382**	.430**	.477**	.399**

**. Correlation is significant at the 0.01 level (1-tailed).

Source: Field survey, 2013

The correlation results in Table 3 shows that the use of ICT in CIT collection has minimised errors in CIT return processing (r =1, sig< 0.01); it facilitates the CIT process (r = 0.429, sig. <

0.01); it allows using available data more effectively to improve forecasting of fiscal revenue (r =0.438, sig < 0.01); it helps file CIT returns (r = 0.358, sig.< 0.01); and it facilitates faster payments of CIT than the manual system (r = 0.438, sig. < 0.01). These results imply that the use of ICT adoption in CIT collection has been influenced by many factors, such as easy monitoring and evaluation, good planning and quick processing among other factors.

Interview results regarding whether the introduction of ICT in CIT collection has improved revenue generation

The officials of FIRS were asked about the use of ICT in CIT collection and the improvement in service delivery to taxpayers.

Table 4 Interview results on ICT usage in company income tax collection

Item	No	Percentage
	N= 4	%
The use of ICT in CIT collection enhances protection of revenue collection	3	75%
ICT in CIT collection eliminates all drawbacks of manual data capture operations	2	50%
ICT usage improves CIT collection	4	100%
ICT usage has improved the delivery of services to taxpayers (companies)	3	75%

Source: Field survey, 2013

Three of the interviewees (75%) believe that ICT usage has improved the delivery of services to taxpayers (companies). This is consistent with Geetanjali (2011), who found that the average response of service providers and seekers towards the effectiveness of e-services is positive, and organisational factors (human resources, ICT infrastructure, financial resources and attitude of service providers) are associated with the effectiveness of e-services. Out of the four interviewees, two interviewees (50%) agreed that ICT in CIT collection eliminates all the drawbacks of manual data capture operations. Similarly, Fu et al. (2006) found that electronic filing of personal income taxes (e-file) has the potential of improving the overall process of tax filing for the individual, while at the same time reducing the cost for both taxpayers and tax collection agencies. From Table 4, four (100%) interviewees agreed that ICT usage improved CIT collection.

Proposition 2: The use of ICT has an impact on tax compliance and the cost incurred to enforce company income tax compliance.

Table 5 Spearman's rho correlations

Item	Coefficient					
ICT enhances voluntary compliance	1	.531**	.556**	.554**	.451**	.444**
Using ICT to collect tax revenue (CIT) reduces the costs of running and maintaining revenue agencies	.531**	1	.424**	.360**	.362**	.468**
The use of ICT in CIT collections reduces the costs of legislative enactment relating to the tax system	.556**	.424**	1	.480**	.422**	.408**
ICT in CIT collections ensures a greater level of compliance and tax revenue increase	.554**	.360**	.480**	1	.310**	.301**
ICT enables quick detection for non-payment of CIT	.451**	.362**	.422**	.310**	1	.390**
The e-tax system reduces processing time and reasonably shortened response times to taxpayers' queries	.444**	.468**	.408**	.301**	.390**	1

**. Correlation is significant at the 0.01 level (1-tailed).

Source: Field survey, 2013

The above Table 5 gives the relationship between different sets of variables; the first variable is voluntary compliance in relation to utilization of ICT in company income tax collection, the finding shows a moderate degree of positive correlation between voluntary compliance and utilization of ICT in company income tax collection as shown by 0.531. There was a moderate degree of positive correlation between using ICT to collect tax revenue (CIT) that reduces the costs of running and maintaining revenue agencies and utilization of ICT in company income tax collection as shown by 0.424; the use of ICT in CIT collections reduces the costs of legislative enactment relating to the tax system as shown by 0.480; ICT in CIT collections ensures a greater level of compliance and tax revenue increase as shown by 0.310.

This indicates that there is a fuller understanding of the tax system and hence improvement in tax compliance. Based on the above analysis, this study's findings also reveal that the use of ICT in CIT collection prevents tax evasion, brings increased CIT compliance, prevents corrupt practices of tax officials and minimises the issue of diversion of government funds to individual accounts.

Proposition 3: ICT makes a potential contribution to the effectiveness and efficiency of company income tax collection

In this study, the presence of a relationship between the dependent variable (B2) and combination of independent variables (B21-B28) is based on the statistical significance of the final model chi-square in the SPSS, as shown on model fitting information. The predictor variable, *using ICT facilitates the CIT collection process*, has significance < 0.05, as stated in Table 6 below.

Table 6 Case processing summary

		N	Marginal Percentage
B2: Using ICT facilitates the company income tax collection process	Strongly Agree	141	62.1%
	Agree	79	34.8%
	Neither Agree nor Disagree	3	1.3%
	Disagree	1	.4%
	Strongly Disagree	3	1.3%
B21: The ICT infrastructure and facilities are accessible to all members of staff	Strongly Agree	107	47.1%
	Agree	53	23.3%
	Neither Agree nor Disagree	22	9.7%
	Disagree	41	18.1%
	Strongly Disagree	4	1.8%
B22: All members of staff in FIRS are trained and educated on the e-tax filing and payments system	Strongly Agree	106	46.7%
	Agree	55	24.2%
	Neither Agree nor Disagree	21	9.3%
	Disagree	40	17.6%
	Strongly Disagree	5	2.2%
B23: The e-tax system has enabled FIRS staff to handle more taxpayers in a given period compared to manual system	Strongly Agree	135	59.5%
	Agree	75	33.0%
	Neither Agree nor Disagree	10	4.4%
	Disagree	6	2.6%
	Strongly Disagree	1	.4%
B24: Ongoing consultation enables staff feedback on how the e-tax system should actually function and operate	Strongly Agree	110	48.5%
	Agree	97	42.7%
	Neither Agree nor Disagree	14	6.2%
	Disagree	5	2.2%
	Strongly Disagree	1	.4%
B25; There are expectations of improvement with the ICT in CIT collections in the future	Strongly Agree	139	61.2%
	Agree	80	35.2%
	Neither Agree nor Disagree	6	2.6%
	Disagree	2	.9%
B26: ICT also has the potential to improve interaction between tax authority and taxpayers, fostering transparency and accountability in administration of company income tax collections	Strongly Agree	142	62.6%
	Agree	80	35.2%
	Neither Agree nor Disagree	4	1.8%
	Disagree	1	.4%
B27: In which area do you anticipate future improvements to be implemented with regards to the e-tax system in collections of CIT?	Finance	128	56.4%
	Infrastructure	99	43.6%
B28: Do you face any challenge through the use of the e-tax system in collections of CIT as a tax officer?	Yes	46	20.3%
	No	181	79.7%
Valid		227	100.0%
Missing		3	
Total		230	
Subpopulation		139[a]	

a. The dependent variable has only one value observed in 124 (89.2%) subpopulations.
b. Predictor is B2: ICT facilitates the company income tax collection process.
Source: Field Survey, 2013

Table 7 Model fitting information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	315.110			
Final	175.832	139.279	96	.003

Source: Field Survey, 2013

Table 8 Likelihood ratio tests

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	175.832[a]	0.000	0	
B21	520.028[b]	344.197	16	0.000
B22	188.284[c]	12.452	16	0.712
B23	184.582[c]	8.750	16	0.923
B24	183.113[c]	7.281	16	0.967
B25	395.852[c]	220.021	12	0.000
B26	342.548[b]	166.716	12	0.000
B27	3366.820[c]	3190.989	4	0.000
B28	175.831[c]		4	

Source: Field survey, 2013

The chi-square statistics is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a) This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

b) The log-likelihood value cannot be further increased after the maximum number of step-halving.

c) Unexpected singularities in the Hessian matrix are encountered. This indicates that either some predictor variables should be excluded or some categories should be merged.

From the above table, there is a statistically significant relationship between independent variables and the dependent variable ($0.000 < 0.05$).

An interview regarding ICT makes a potential contribution to the effectiveness and efficiency of company income tax collection

The interviewees, particularly D1 and D3, explained that a lack of finance and distributive capacity are the major factors militating against technology adoption in Nigeria. All interviewees said that the greatest obstacle to wider ICT usage in Nigeria is the high cost of ICTs, and the relative burden of ICT costs is higher for informal businesses than it is for formal ones. The informal sector is a prominent characteristic of many developing countries. Nigeria, for instance, has a large informal sector, very high self-employment rates and low levels of tax collection. This is due to the lack of constant electricity and based on the fact that some ICT infrastructures are energy consuming, which in turn hinders several taxpayers from effectively utilising ICT to pay their taxes, as required.

Findings

The findings of quantitative analysis were reinforced with qualitative analysis of interview data. The results obtained were compared with results from similar previous studies. There is an agreement between the findings generated through questionnaires and those of interviews. The study findings established that there was a significant increase in CIT revenue collection with the use of ICT. Prior to the introduction of ICT in CIT collection, the average collection of CIT revenue was low, after which it increased significantly. In line with the findings of the study, the use of ICT in CIT collection brings taxpayers better service; the use of ICT has impacts on company income tax compliance and the cost incurred from enforcing compliance and ICT can potentially contribute to the effectiveness and efficiency of company income tax collection among other benefits.

Overall, the findings of this study reveal that the benefits of the Federal Inland Revenue Service using ICT in CIT collection are the following: introduction of ICT has enhanced company income tax collection and improved revenue generation; the use of ICT has impacts on tax compliance and the cost incurred from enforcing company income tax compliance; and potential contribution of ICT towards the effectiveness and efficiency of company income tax collection.

Taxpayers' benefits include online services; reduced paperwork; taxpayers do not need to visit the commercial tax offices for instant acknowledgement; usually no service charges by banks for issuing demand drafts, cheque clearance etc.; easy clearance at check post due to advanced e-declaration of goods in shipment; system-generated annual return based on the monthly returns filed and the reduced need for direct interaction with tax officials, thereby reducing corruption.

Finally, the descriptive studies of the presented research reveal important insights on impacts of ICT in CIT collection and the empirical findings of this study provide valuable insights to policy makers to promote the adoption of e-tax.

Conclusion and Recommendation for Future Research

The deployment of information and communication technology has proved to be tremendously beneficial for company income tax collections. More and more tax authorities are deploying information technology resources to improve their revenue collection efficiency. Developing countries are leveraging on information technology to embrace the e-governance initiatives.

More research needs to be done to find out how information technology can be deployed to reduce incidence of tax evasion and tax avoidance which are common menace in developing countries. Another important area that needs investigation is how deployment of ICT can help in reducing the incidence of money laundering. In most instances when proceeds of money laundering are subjected to tax they become legal and ready to be circulated into the economy.

Today, no one is surprised to receive new information by the minute, to communicate with people on the other side of the world, and to work in a team without being in the same place. ICTs are now significant and essential parts of our lives. This concept is also called the information society, which is owed primarily to an invention that began four decades ago: the internet that creates emails, instant messaging services and web pages. The development of the internet has meant that information is now in many places. Earlier information was intense, given to parents, teachers, in books; but today these barriers have been broken. There is access to internet everywhere, the only problem; however, is the quality of this information. It has streamlined contact between people and also contacts in doing business. Many politicians have their blogs or videos on YouTube, making it clear that ICT, especially in the last 10 years, has changed every aspect of life. In part, these new technologies are immaterial because the main issue is the information; interconnection and interaction are instantaneous. At the same time, new technologies represent the emergence of new codes and languages and the progressive specialization of content based on the audience (breaking mass culture), soon resulting in unimaginable activities.

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DOES THE US CIGARETTE TAX IMPOSED ON

TOBACCO EXPENDITURE WORK

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Abstract

The cigarette and smoking are the one of the important health and socioeconomic issues in both national and global aspects. The centralized policy such as government policy and education system can influence the people to be healthy and active in self-prevention. The cigarette excise tax is one of the state-level tools to capture the externalities of being smoker. Also, the revision of the effect of cigarette tax on tobacco expenditure should be concerned. Therefore, we deal with the data from the Consumer Expenditure from 2009 to 2011. We find that most of variables are significant with exception of quarterly and yearly dummy variables which do not seem to influence tobacco consumption. The results yield that the tobacco spending of CUs is affected by the cigarette tax significantly. Especially, in 2011, some state had cigarette tax increased, the results indicated that the household decreased the tobacco expenditure significantly. Furthermore, the differences in gender, ethnic group, marital status and region had the unique effect on the tobacco expenditure. Age, education and family size inversed U-shape pattern to tobacco expenditure. Nevertheless, income level progressively increased the tobacco expenditure. Finally, we found that most of explanatory variables and especially cigarette tax can significantly affect the probability of being smoker obviously. This paper considers the policy implications to reduce the cigarette spending by influencing the members of the family to avoid consuming tobacco, increase the cigarette tax to reduce the smoke consumption, communicate the hazardous of smoking and being smoker to the earners of the family to cut the tobacco expenditures, as well as take care of the middle age, middle of education, and the smokers who came from the middle size family whenever starting the government campaign.

Keywords: Cigarette Tax, Tobacco Expenditure

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Introduction

Cigarette smoking has been identified as the leading cause of preventable morbidity and premature mortality in the United States. Smoking is responsible for approximately one in five deaths in the United States. From 2000 to 2004, smoking had killed an average of approximately 443,000 people each year in the United States alone. This included an estimated 269,655 male and 173,940 female deaths annually. Among adults, most smoking-attributable deaths were due to lung cancer (125,522), coronary heart disease (80,005) and chronic obstructive pulmonary disease and other airway obstruction (78,988) (American Lung Association, 2011). One study from Bureau of Economic Analysis estimated that a greater decline in the smoking rate would offer significant reductions in the costs of smoking. Decreasing the smoking rate to 15 percent by 2023, instead of the 19 percent predicted by current trends, would offer $31.4 billion in savings on pulmonary conditions due to smoking and an increase in productivity of $79 billion (Centers for Disease Control and Prevention, 2009). Moreover, consumers spending on tobacco rose from $80 billion in 2008 to $98 billion in 2011 in inflation-adjusted dollars — even though the amount of tobacco purchased fell 11%. Higher taxes accounted for about half that spending increase. The rest went to tobacco companies and retailers.

However, the effect of cigarette excise taxes on the behavior of smokers have been long debated. The government policy and education system to influence the people to be healthy and active in self-prevention. Nevertheless, the individuals may not well behave in consumptions to select the optimal choice. The risk of undesirable manner in tobacco consumption results in the health diseases problem, for instance heart-attack; cancer and lung diseases. Also, these issues play the important roles in both national level and worldwide aspects. Since the assumption of the consumers has changed their preferences over time, the revision of policy should be in concern. In this paper, therefore, we deal with the data of the Consumer Expenditure from 2009 to 2011 and consider some detail of household characteristic issues. The regional fixed-effect is in consideration in our analysis. Finally, we will apply the model to estimate the probability of being smoker.

Literature Reviews

There is an extensive amount of literature that has investigated the factors affecting cigarette consumption. Traditionally, the addiction models which analyze based on the current consumption decisions depend on past choices and gradual response to the price that implying long-run price elasticity will exceed the short-run elasticity. There are two basic approaches which are Myopic demand (Mullahy, 1986) that dependence of current consumption is on past behavior, but ignores the future consequences of addiction model and Rational demand models (Becker & Murphy, 1988) which allows the farsighted behavior, implying the increases in future "costs" of addiction. The study of Van Walbeek (2003) indicated that real cigarette excise tax rates had fallen because tax increases had not kept pace with inflation. Increases in the price of cigarettes decrease

smoking, particularly by the younger. One result was that taxes had no significant effect on the percentage of adult smokers in a state population. However, for underage smokers, cigarette taxes do curb behavior by one-year lagged tax. However, two studies, by Wasserman et al. (1991) about the youth and Chaloupka (1991) about the young adults, found no significant effect of price on youth smoking.

The researches on race/ethnicity and socioeconomic status of Evan, et al. (1978) found significant differences in price elasticity across different racial/ethnic populations. Moreover, racial/ethnic differences may reflect differences due to socioeconomic status which are supported by U.K-based data of Townsend, et al. (1994) and U.S.-based data of Farrell, et al. (1998) which revealed the similar evidence that at or below median income person has sensitivity to price more than the median income. Moreover, Chaloupka (1991) finds that less educated person is fairly sensitive to price, while more educated is virtually insensitive to price. Additionally, mixed evidence on differences in price sensitivity by gender which are mostly studied in U.S. concluded that men are more sensitive to price than women, but the result is controversy in U.K. papers. However, relatively small literature concludes that increases in taxes and prices on other tobacco products would lead to similar reductions in prevalence and consumption (Chaloupka & Wechsler, 1995) - prevalence and frequency of smokeless tobacco used among young males in U.S. The study is similar to the Ohsfeldt & Boyle (1994; 1998) found that the prevalence of smokeless tobacco used among adult males in U.S. In general, these studies also conclude that various tobacco products are substitutes for one another.

Methodology

1. Research design

In this paper we employed tobit model (Tobin, 1958) to find the relationship between a non-negative tobacco expenditure and independent variables. The case that an observed zero spending can occur either because the household genuinely does not purchase the good, or because, for one reason or another, a zero is incorrectly reported. Which is in fact the case is not known in advance so that the contamination has to be coped with statically by employing tobit regression as the result from Deaton and Irish (1984) paper. The data both household characteristics (Consumer Units: CUs) and tobacco expenditure based on the Consumer Expenditure Survey 2009-2011 (CEX2009-CEX2011) were used. The CEX data was quarterly gathered by Bureau of Labor Statistics in each year. We employed the state cigarette excise tax 2009-2011 data from the centers for disease control and prevention. Firstly, we estimated tobacco expenditure of US household, the basic model we applied from the model in Deaton and Irish (1984). Also, we extended to study on both different methods which are OLS, tobit with lower limit and upper limit and dealt with the model specification which square terms of explanatory variables and the difference in the specification of the model in lower and upper limit (left and right-censored) censored. Second, we

predicted the probability of being smoker by both different methods which are OLS, logistic regression and probit regression and differences in specification which have additional square terms to obtain the conditional marginal effect.

First, we found that the quarterly and yearly dummy variables are not significant in our estimation; we implied that the quarterly and yearly dummy variables had not influenced the tobacco expenditure. Alternatively, tobit regression with square terms and with lower and upper limit seemed to fit to our data more than OLS. After we extended the upper limit from tobacco expenditure from percentile of 90 to 99.99, we found that the model seemed to fit the data well, but the larger in magnitude of the coefficient and the higher standard error will be the issues. Age, education level and family size had the same pattern that inversed u-shape and positive effect on tobacco consumption. As we focused on marital status, being married and widowed tended to consume less tobacco than single, but divorced and separated CUs tended to spend on tobacco more than single. We found the negative impact on tobacco demand from being the Black and the Asian comparing to the White, but being Multiracial had the positive impact on tobacco spending. Especially, the tobacco demand is progressive with respect to income. Cigarette tax had a negative impact on tobacco expenditure. Moreover, the dummy variable which indicated CUs in 2011 who lived in the state that increased cigarette tax had less tobacco expenditure than those CUs in the state which did not increase cigarette tax. CU who lived in urban area tended to spend less than CUs who lived in rural area. The last but not least, CUs who lived in Northeast, Midwest and South tended to have tobacco spending more than CUs who live in West.

Second, we developed the model to predict the probability of being smoker. We began with the estimation by using OLS, logistic regression and probit regression. With assumption of non-linearity of probabilities of being smoker, the probit regression yields the maximum likelihood. Therefore, we developed probit regression with square terms and calculate the conditional marginal effect of the explanatory variables on probabilities of being a smoker. We found that being male had more probability of being a smoker than female approximately 0.0256. Married and widowed CUs had probability of being a smoker more than single CUs by 0.052 and 0.028 respectively. The Black and the Asian had less probability of being a smoker than the White about 0.0686 and 0.0515, respectively, comparing to the White, but Multiracial CUs had more probability of being a smoker than White CUs by 0.0816. Urban life had possibility to be a smoker less than rural life about 0.1029. The CU's household who lived in Northeast, Midwest and South had probability of being smoker more than CUs who lived in West by 0.0508, 0.0728 and 0.0512, respectively.

We concluded that the explanatory variables in the models influenced the tobacco expenditure as we expected. The quarters and year did not significantly affect tobacco expenditure. The cigarette tax is the one of the important factors in consideration of the tobacco expenditure. The different race/ethnic and marital status had different tobacco consumption pattern. There is the exist of regional fixed-effect on CUs tobacco expenditure. We discussed a number of influential factors for

this result in terms of household characteristics. Ultimately, we explored the variables and concluded that cigarette taxes had significantly an effect on tobacco expenditure.

2. Data and Model Specification

2.1 Household tobacco expenditure

$$Tobacco_i = \alpha + \beta X_i + \gamma C_i + \Omega I_i + \delta V_i + \lambda Q_r + \theta Y_t + \varepsilon_i$$

Where, Tobacco*i* is the household tobacco expenditure in *r*th quarter and year *t*th of *i*th CUs and, X_i the vector of CUs characteristics such as education level, number of members in family, C_i the cigarette excise tax in each state at the particular year. I_i is annual financial income after tax of CUs household, V_i a dummy variable indicates the geographical factor-region, Q_r a dummy variable indicate quarter that CUs data collected. Y_t a dummy variable indicates the year that CUs data collected, α, β, γ, Ω, δ, λ, θ the parameters to be determined, and ε_i the unobserved random errors.

2.2 Probability of being smoker model

$$P(Smoker)_i = \pi + \tau X_i + \chi C_i + \rho I_i + \sigma V_i + \kappa Q_r + \psi Y_t + \eta_i$$

Where, X_i the vector of CUs characteristics such as education level, number of members in family, C_i the cigarette excise tax in each state at the particular year. I_i is annual financial income after tax of CUs household, V_i a dummy variable indicates the geographical factor-region, Q_r a dummy variable indicate the quarter that CUs data collected. Y_t a dummy variable indicates the year that CUs data collected, π, τ, χ, ρ, σ, κ, ψ the parameters to be determined, and η_i the unobserved random errors.

2.3 Data

The Consumer Expenditure Survey (CEX) 2009-2011 is the main data source in our analysis which provides a continuous and comprehensive flow of data on the buying habits of American consumers. It is gathered annually by the U.S. Census Bureau for the Bureau of Labor and Statistics (BLS). Also, it has varieties of new releases, reports, articles in the Monthly Labor Review. Their public used microdata file presenting detailed expenditure and income data for the diary components of the CE and the interview components of the CE for 2009-2011. The former includes weekly expenditure (EXPN), annual income (DTB) and imputed income (DTID) files. These files are categorized by a Universal Classification Code (UCC). The latter yields data on up to 95 percent of total household expenditure which are FMLY, MEMB, MTBI, FPAR, MCHI, ITBI and ITLL files.

We used EXPN and DTBD to perform and conducted the income analysis and its relevance. The FMLY and MEMB file are composed of demographic of consumer units (CUs) and CU members. These two files contain summary level of expenditure and income on the FMLY files granted relatively to consumer spending, by general expenditure category. We utilized its data and selected the substantial household characteristics and demographics to implement in our analysis.

The FPAR and MCHI datasets were grouped as 2-year datasets (2010 and 2011), plus the first quarter of the 2012 and contained paradata about the interview survey. We also realized it as the source of the interview survey process.

However, some collected data are not reported. The CE implemented multiple imputations process of income data since 2004. Many income variables and other income related variables are included in FMLY, MEMB, ITBI and ITII files. The topcoding refers to the replacement of data in cases where the value of the original data exceeds prescribed critical value or the cases that CE will not able to identify CUs who participated. Moreover, the CE concerns about geographical issues, some state has less people comparing to its area. In terms of characteristic and imputed data, we employed only completed data to be analyzed in our paper. Also, we assumed that the analysis of the state in the same region can imply the same pattern by the inferential statistics process. This means that the behavior, matter and evidence of other Western states (California, Nevada, Oregon, Utah, and Washington) can be implied to the pattern in Nevada. Additionally, the state cigarette excise tax 2009-2011 data comes from the centers for disease control and prevention.

All of the independent variables are provided by the CEX2009, 2010 and 2011. In addition to the vector of characteristics of consumer unites such as variables on age, race, gender, family size, number of earners, marital status and urban or rural residence, the following variables need some explanation.

The data on the CUs' level of education is compiled into the following discrete groups: never attended school; 1st through 8th grade; 9th through 12th grade, but no high school diploma; high school graduate; some college, less than college graduate; Associate's degree (occupation, vocational, or academic); Bachelor's degree, Master's degree; or Professional or Doctorate degree. We ranked the levels in order from lowest level of education to the highest one (from 0 to 17).

3. Description of Variables:

Dependent Variables:

1) Basic model

   The CEX 2009-2011 reports the tobacco expenditure of CUs in quarter in unit of dollars

   $$Tobacco\ expenditure_i\ , unit\ of\ dollars\ in\ quarter$$

2) Probability of being smoker

   We derive probability of being smoker by identify as a dummy variable, DummyT.

   $DummyT_i$ =1 if the ith CU have tobacco expenditure more than 0 dollars, 0 if CU have reported no tobacco expenditure.

Independent Variables:

$Male_i$ = 1 if the ith CU is male, 0 otherwise

Age_i = the age of the ith CU in years

$Education_i$	= the level of education of the ith CU
$Married_i$	= 1 if the ith CU married, 0 otherwise
$Widowed_i$	= 1 if the ith CU widowed, 0 otherwise
$Divorced_i$	= 1 if the ith CU divorced, 0 otherwise
$Separated_i$	= 1 if the ith CU separated, 0 otherwise
Family size$_i$	= the number of members in the ith CU's household
$Earners_i$	= the number of earners in the ith CU's household
$Black_i$	= 1 the ith CU is African American, or Black, 0 otherwise
$Native_i$	= 1 the ith CU is American Indian, or Alaskan Native, 0 otherwise
$Asian_i$	= 1 if the ith CU is Asian, 0 otherwise
$Hawaiian_i$	= 1 if the ith CU is Hawaiian, 0 otherwise
$Multirace_i$	= 1 if the ith CU is Multi-race, 0 otherwise
$Income_i$	= the annual financial income after tax of the ith CU's household
Ln(income)$_i$	= the logarithmic term of the annual financial income after tax of the ith CU's household
$Cigtax_i$	= state cigarette tax for ith CU's household in the particular year, unit of dollars per pack.
Increasecigtax2011$_i$	= 1 if the particular state had increase cigarette tax in 2011, 0 otherwise
$Urban_i$	= 1 if the ith CU resides in urban area, 0 otherwise
$Northeast_i$	= 1 if the ith CU resides in Northeast region, 0 otherwise
$Midwest_i$	= 1 if the ith CU resides in Midwest region, 0 otherwise
$South_i$	= 1 if the ith CU resides in South region, 0 otherwise
$Quarter_r$	= 1 if ith CU's household information collected in quarter rth, 0 otherwise, where r= 1, 2, 3, 4
$Year_t$	= 1 if ith CU's household information collected in year tth, 0 otherwise, where t = 2009, 2010, 2011

Research Finding

1. Tobit Regression

First, we had tested the independent variables which were significant with the exception of the *Native, Hawaiian, Quarter1, Quarter2, Quarter3*, *Year 2010*, and *Year 2011* variables. Therefore, we employed the tobit regression with differences in upper-limit (right-censored) which will give us more uncensored observation than we did in previous session. In other words, we have more variation in our model and we would like to see the changes in magnitude of the effect of

explanatory variable. Therefore, we considered the model at 95th, 99th and 99.99th percentile as the following

Table 1 Results of tobit regression restricted to lower limit but different specification in upper limit.

Model	Percentile 95			Percentile 99			Percentile 99.99		
Observation Uncensored	41,961			41,961			41,961		
Observations Left-Censored	6,001			8,148			8,523		
Obs/Tobacco ≤ Right-Censored	33,434/0			33,434/0			33,434/0		
Obs/Tobacco ≥	2,526/260			379/606.67			4/3,289.167		
Sigma	336.1954			348.1729			397.619		
Pseudo R^2	0.0232			0.0186			0.0188		
	Coeff.	Robust S.E.	P-Value	Coeff.	Robust S.E.	P-Value	Coeff.	Robust S.E.	P-Value
Constant	-851.65	(93.05)	0.000***	-851.65	(93.05)	0.000***	-961.79	(110.99)	0.000***
Male	24.99	(4.91)	0.000***	24.99	(4.91)	0.000***	29.29	(5.67)	0.000***
Age	16.33	(0.92)	0.000***	16.33	(0.92)	0.000***	18.26	(1.08)	0.000***
Age^2	-0.18	(0.01)	0.000***	-0.18	(0.01)	0.000***	-0.20	(0.01)	0.000***
Education	91.36	(12.91)	0.000***	91.36	(12.91)	0.000***	100.91	(15.49)	0.000***
$Education^2$	-5.30	(0.49)	0.000***	-5.30	(0.49)	0.000***	-5.88	(0.59)	0.000***
Married	-69.00	(7.83)	0.000***	-69.00	(7.83)	0.000***	-76.39	(8.98)	0.000***
Widowed	-44.12	(11.93)	0.000***	-44.12	(11.93)	0.000***	-51.95	(13.50)	0.000***
Divorced	46.35	(8.20)	0.000***	46.35	(8.20)	0.000***	52.19	(9.39)	0.000***
Separated	-1.71	(13.83)	0.902	-1.71	(13.83)	0.902	-3.54	(15.52)	0.820
Family size	38.88	(6.23)	0.000***	38.88	(6.23)	0.000***	41.17	(7.04)	0.000***
$Family\ size^2$	-4.03	(0.83)	0.000***	-4.03	(0.83)	0.000***	-4.02	(0.96)	0.000***
Black	-107.25	(7.64)	0.000***	-107.25	(7.64)	0.000***	-118.49	(8.84)	0.000***
Native	27.31	(37.13)	0.462	27.31	(37.13)	0.462	35.38	(42.72)	0.407
Asian	-81.61	(12.81)	0.000***	-81.61	(12.81)	0.000***	-90.22	(15.03)	0.000***
Hawaiian	18.00	(37.52)	0.631	18.00	(37.52)	0.631	16.01	(42.02)	0.703
Multirace	88.04	(17.85)	0.000***	88.04	(17.85)	0.000***	105.69	(21.84)	0.000***
Ln(income)	7.04	(2.07)	0.001***	7.04	(2.07)	0.001***	7.93	(2.37)	0.001***
Cigtax	-13.50	(4.01)	0.001***	-13.50	(4.01)	0.001***	-13.85	(4.57)	0.002***
Increasecigtax2011	-30.72	(13.23)	0.020**	-30.72	(13.23)	0.020**	-36.93	(15.21)	0.015**
Urban	-161.17	(27.48)	0.000***	-161.17	(27.48)	0.000***	-178.07	(31.04)	0.000***
Northeast	66.70	(9.11)	0.000***	66.70	(9.11)	0.000***	73.02	(10.41)	0.000***
Midwest	81.06	(7.28)	0.000***	81.06	(7.28)	0.000***	90.61	(8.53)	0.000***
South	63.24	(6.60)	0.000***	63.24	(6.60)	0.000***	70.63	(7.71)	0.000***

Note: *** Significant level at α = 0.01

Table 1 shows that all the independent variables are significant with exception of the *Separated*, *Native* and *Hawaiian* variables. However, *Increasecigtax2011* variable is significant at 90% significant level in the right-censored at tobacco ≥ 151.67 dollars (90th percentile) but it is 95% significant level in another models. The direction of the effect of explanatory variables on tobacco expenditure are the same as we did. The magnitude of coefficient of *Ln(income)* are pretty higher

which are 5.96, 7.04 , 7.04 and 7.93 respectively. But, the magnitude of coefficient of *Cigtax* tends to be lower as we increase the ith percentile which are 17.27, 13.50, 13.50 and 13.85 respectively. Moreover, dummy variable *Increscigtax2011* tends to be higher which are 22.12, 30.72, 30.72 and 36.93, respectively. The ancillary statistic /sigma is analogous to the square root of the residual variance in OLS regression. The values are 327.10, 336.19, 348.17 and 397.61, respectively which indicate that when we try to increase uncensored observations in the tobit model, we have substantially increased variation to the models.

Table 2 The test statistics for parameters in tobit regressions

Group of variables	F-statistic			P-value		
	95th percentile	99th percentile	99.99[th] percentile	95th percentile	99th percentile	99.99[th] percentile
Marital status	79.29	78.61	74.45	0.0000	0.0000	0.0000
Races	29.43	29.48	26.40	0.0000	0.0000	0.0000
Regions	3.96	3.90	3.81	0.0191	0.0203	0.0223

Note: Marital status = H_0 : Married=Widowed=Divorced=Separated;

Races = H_0: Black=Native=Asian=Hawaiian=Multirace;

Regions = H_0:Northeast=Midwest=South

To test the null hypotheses of the coefficients of the diffence in marital status, races and regional fixed-effect, we obtain F-statistics and p-values as shown in Table 2. We have enough evidence to reject the null hypothesese. Therefore, we can conclude that being Married, Widowed, Divorced and Seperated have different effects on tobacco expenditure at 99% significant level. Being Black, Asian, Native, Multiracial, Hawaiian have differrent effects on tobacco expenditure at 99% significant level. However, we have the difference of regional fixed-effect impact on tobacco consumption at 95% significant level in all models with exception for the model which 99th percentile upper limit that the regional fixed-effect have different impacts on tobacco consumption at 99% significant level.

2. Probability of being smoker model.

We introduced the model which predicts the probability of being smoker. Therefore, we generated a dummy variable as dependent variable. *DummyT* defined as 1 if CUs have expenditure more than zero and 0, otherwise.

Table 3 Results of the model of probability of being smoker.

Model	Logistic Regression			Probit Regression		
Observation	41,961			41,961		
Loglikelihood	-20202.22			-20191.9		
F-test / Chi-square	1784.08			1864.63		
Prob>F / Prob.> X^2	0.000			0.000		
R^2 / Pseudo R^2	0.0683			0.0699		
	Coefficient	Robust S.E.	P-Value	Coefficient	Robust S.E.	P-Value
Constant	1.629	(0.195)	0.000***	0.959	(0.116)	0.000***
Male	0.149	(0.026)	0.000***	0.085	(0.015)	0.000***
Age	-0.015	(0.001)	0.000***	-0.009	(0.001)	0.000***
Education	-0.181	(0.008)	0.000***	-0.107	(0.004)	0.000***
Earners	0.036	(0.006)	0.000***	0.020	(0.003)	0.000***
Married	-0.168	(0.040)	0.000***	-0.096	(0.023)	0.000***
Widowed	-0.318	(0.066)	0.000***	-0.180	(0.036)	0.000***
Divorced	0.497	(0.042)	0.000***	0.288	(0.025)	0.000***
Separated	0.250	(0.073)	0.001***	0.147	(0.043)	0.001***
Family size	0.040	(0.010)	0.000***	0.024	(0.006)	0.000***
Black	-0.416	(0.041)	0.000***	-0.237	(0.023)	0.000***
Native	0.241	(0.183)	0.187	0.137	(0.107)	0.199
Asian	-0.480	(0.071)	0.000***	-0.254	(0.038)	0.000***
Hawaiian	0.064	(0.196)	0.743	0.025	(0.112)	0.821
Multirace	0.501	(0.093)	0.000***	0.287	(0.056)	0.000***
Ln(income)	0.049	(0.011)	0.000***	0.028	(0.006)	0.000***
Cigtax	-0.137	(0.020)	0.000***	-0.072	(0.011)	0.000***
Urban	-0.720	(0.137)	0.000***	-0.436	(0.085)	0.000***
Northeast	0.389	(0.048)	0.000***	0.202	(0.027)	0.000***
Midwest	0.474	(0.038)	0.000***	0.263	(0.022)	0.000***
South	0.353	(0.035)	0.000***	0.194	(0.020)	0.000***

Note: *** Significant level at α =0.01

The Table 3 shows that all of the independent variables are significant with the exception of the *Native and Hawaiian* variables. Being male tends to be smoker higher than female. The higher age and additional year of education tend to decrease the probability of being smoker. The increases in number of earner and family size of CUs tend to increase the probability of being smoker. Being Black and Asian tends to decrease the probability of being smoker compare to White. Conversely, being Multiracial tends to increase the probability of being smoker compare to White. The percentage increase of income tends to increase the probabilities of being smoker. The increase in cigarette excise tax tends to decrease probability of being smoker. CUs who live in urban area tends to be smoker less than CUs who live in rural area. The CU's household who live in Northeast, Midwest and South tends to be the smokers more than CUs who live in West.

Finally, we establish probit regression with the square term of age, education and family size variables and conditional marginal effects by employing Delta-method. The estimation equation and the result are the following.

Table 4 Results of the probit regression with square term and its marginal effect.

	Probit			Conditional Marginal Effect			
Observation	41,961			41,961			
Loglikelihood	-19783.355			-19783.355			
Wald X² (23)	2359.58			2359.58			
Prob.> X²	0.000			0.000			
Pseudo R²	0.0661			0.0661			
AIC	0.944			N/A			
LR (23)	2799.112			N/A			
	Coefficient	Robust S.E.	P-Value	dF/dX	Robust S.E.	P-Value	Mean of Variables
Constant	-2.4994	(0.2624)	0.000***	-	-	-	-
Male	0.0958	(0.0149)	0.000***	0.0256	(0.0040)	0.000***	0.4750
Age	0.0495	(0.0028)	0.000***	0.0132	(0.0008)	0.000***	49.9676
Age²	-0.000585	0.000029	0.000***	-0.00016	0.00000764	0.000***	2797.5090
Education	0.2549	(0.0351)	0.000***	0.0680	(0.0093)	0.000***	13.2836
Education²	-0.0150	(0.0013)	0.000***	-0.0040	(0.0004)	0.000***	179.9807
Earners	0.0330	(0.0034)	0.000***	0.0088	(0.0009)	0.000***	3.6297
Married	-0.1957	(0.0237)	0.000***	-0.0524	(0.0064)	0.000***	0.5166
Widowed	-0.1122	(0.0363)	0.002***	-0.0287	(0.0089)	0.002***	0.0924
Divorced	0.1470	(0.0253)	0.000***	0.0410	(0.0074)	0.000***	0.1509
Saparted	0.0104	(0.0433)	0.811	0.0028	(0.0117)	0.811	0.0302
Family size	0.0838	(0.0180)	0.000***	0.0224	(0.0048)	0.000***	2.5369
Family size²	-0.010181	(0.0023)	0.000***	-0.00272	(0.0006)	0.000***	8.7080
Black	-0.2846	(0.0235)	0.000***	-0.0686	(0.0050)	0.000***	0.1220
Native	0.0905	(0.1065)	0.395	0.0251	(0.0307)	0.395	0.0041
Asian	-0.2111	(0.0383)	0.000***	-0.0515	(0.0085)	0.000***	0.0522
Hawaiian	0.0300	(0.1129)	0.791	0.0081	(0.0309)	0.791	0.0039
Multirace	0.2742	(0.0559)	0.000***	0.0816	(0.0183)	0.000***	0.0139
Ln(income)	0.01953	(0.0064)	0.002***	0.005212	(0.0017)	0.002***	10.4253
Cigtax	-0.0694	(0.0111)	0.000***	-0.0185	(0.0030)	0.000***	1.4425
Urban	-0.3374	(0.0867)	0.000***	-0.1029	(0.0295)	0.000***	0.9945
Northeast	0.1820	(0.0268)	0.000***	0.0508	(0.0078)	0.000***	0.2144
Midwest	0.2557	(0.0219)	0.000***	0.0728	(0.0066)	0.000***	0.1977
South	0.1865	(0.0200)	0.000***	0.0512	(0.0056)	0.000***	0.3236

Note: *** Significant level at α =0.01

The *italic* variables in the Table 4 indicate that marginal effect refers to the discrete change of dummy variable from 0 to 1 and P>|z| correspond to the test of the underlying coefficient being 0.All of the independent variables are significant with the exception of the *Separated, Native and Hawaiian v*ariables. Being male have probability of being smoker higher than female approximately 0.0256. Married and Widowed CUs have probability of being smoker more than single CUs by 0.052 and 0.028, respectively. Black and Asian have probability of being smoker less than White about 0.0686 and 0.0515 respectively, comparing to White but Multiracial CUs have probability of being smoker higher than White CUs by 0.0816. The CUs who live in urban area have possibility to be smoker less than CUs who live in rural area by 0.1029. The CU's household who live in

Northeast, Midwest and South have probability of being smoker more than CUs who live in West by 0.0508, 0.0728 and 0.0512 respectively.

Test Statistic for estimation of probability of being smoker.

Since, the logistic regression measures the relationship between a categorical dependent variable, being smoker, and independent variables, by using probability scores as the predicted values of the dependent variable. The regression coefficients are usually estimated using maximum likelihood estimations which have shown in the Table 5. The likelihood-ratio test which assess model fit is also the recommended procedure to assess the contribution of individual "predictors" to a given model which are all reject the null hypothesis that the parameters are significant at 99% significance level. The Akaike information criterion (AIC) is a measure of the relative quality of a statistical model, for a given set of data. As such, AIC provides a mean for model selection.

Table 5 Test statistics for logistic regression and probit regression model

Model	Test Statistics					
	Log-likelihood	Log-likelihood Ratio	Prob > LR	AIC	AIC*n	BIC
Logistic Regression	-20202.220	1961.361	0.0000	0.964	40446.441	-406025.717
Probit Regression	-20191.898	1982.026	0.0000	0.963	40425.796	-406046.362
Probit Regression with square term	-19783.355	2799.112	0.0000	0.944	39614.710	-405831.515

From the Table 5, we found that the lower AIC, the better of quality of the model. Therefore, probit regression with square has the lowest AIC, 0.944. Bayesian information criterion (BIC) simply reduces to maximum likelihood selection because the number of parameters is equal for the models of interest. The larger BIC, the better of model fit to the data. The probit regression with square-term has the highest value of BIC,-405831.515. Therefore, we can conclude that probit regression with square term is preferable.

To test the null hypotheses of the coefficients of the diffence in marital status, races and regional fixed-effect, we obtain Chi-square and p-values as in the Table 6. We have enough evidence to reject the null hypotheses. Hence, we can conclude that being Married, Widowed, Divorced and Seperated have diffent effects on being smoker at 99% significant level. Being Black, Asian, Native, Multiracial, Hawaiian have differrent effects on being smoker at 99% significant level. Also, we have the difference of regional fixed-effect impact on probabilities of being smoker at 99% significant level.

Table 6 Test statistic for parameters for logistic regression and probit regression

Group of variables	Chi-square			P-value		
	Logistic Regression	Probit Regression	Probit Regression with square term	Logistic Regression	Probit Regression	Probit Regression with square term
Marital status (H_0 : Married=Widowed =Divorced=Separated)	392.21	387.57	227.98	0.0000	0.0000	0.0000
Races (H_0: Black=Native=Asian =Hawaiian=Multirace)	102.92	93.74	98.96	0.0000	0.0000	0.0000
Regions (H_0:Northeast=Midwest =South)	12.52	13.01	14.36	0.0019	0.0015	0.0008

Summary and Conclusions

This paper investigated the impact of cigarette excise tax on tobacco expenditure of US household from 2009 to 2011. We identified and up-to-date tobacco expenditure by employing the dummy variables and studies in 1980s and 1990s. We found that most of variables were significant with exception of quarterly and yearly dummy variables which did not seem to influence tobacco consumption. The results yielded that the tobacco spending of CUs were affected by the cigarette tax significantly. The difference in gender, ethnic group, marital status and region had the unique effect on the tobacco expenditure. Age, education and family size has inversed U-shape pattern to tobacco expenditure. However, income level progressive increased the tobacco expenditure.

Possible Extension and Limitation of the Study

There are exogenous variables effect on tobacco expenditure such as price of another kind of tobacco, personal preferences, advertising and promotion or even anti-smoking propaganda, both in local and national aspect. Cross sectional data have the limitation of time to forecast in the long-run tobacco consumption so that we cannot track the household along the time. Moreover, the use of total expenditure as an exogenous variable is theoretically inconsistent with our formulations of 'reporting' bias which imply that total expenditure is a random variable determined by the sum of all the reporting effects over all goods. This issue can only really be dealt with in the context of a system of demand equations and is central in Kay, Keen (1986) paper. Also, AIDS (Deaton & Muellabauer, 1980) and Quadratic Engel Curves and Consumer Demand (Banks, Blundell & Lewbel 1997) are possible.

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CHANGE MANAGEMENT IN E-BUSINESS SYSTEM IN HOTEL

MANAGEMENT: A CASE OF ANCHALEEWIWAT GROUP

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Abstract

The objective of this independent study was to determine the factors that affect to the decision making of changing the E-business system in hotel management. The 200 samples were selected from among the employees in the Anchaleewiwat hotel group. Research was done by questionnaires survey. The data was analyzed by using descriptive statistics including frequency, percentage mean and standard deviation among factors that affected change management in hotel management: a case of Anchaleewiwat group.

The results of analysis show that demographic factors including age level, working experience, income level have intentions to change the management in E-business system of hotel management with a significant level of .000, .000, and .048, respectively. Furthermore, the results of analysis show that internal factors including cognitive components and behavioral components of attitude have intentions to change the management in E-business system of hotel management with a significant level of 0.017 and 0.001, respectively.

Keywords: Change Management, Hotel Management, E-business, Technology, Information Management

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Introduction

Internet technology has been applied to business to improve the performance. The term E-business was defined by IBM in 1997 as an operation of the process of business by using the internet technology. In the present day E- Business has become a basic human need. In every industry, they have to use E-Business systems to support the work in many ways, including the connection between all of the business processes. It is also used in the Hospitality industry such as Hotels, Hospitals, etc.

Currently, most standard hotels implement E-business technology in every department, and they also use this technology for management within the Hotel chain that has branches in many countries as well. Many hotels in Thailand implement this technology to support their work in every part of the process, such as the decision making system for executives, the room reservation system, housekeeping, the accounting system or inventory system for the back office, etc. That means that E-business is an important system in all of the functions of hotel management.

E-business systems are very important to every business unit because the system can gain more performance in every process of the operation, faster responsiveness, and error reduction. Also, it does not have limitations on meeting the customer, even though the company and the customer are on different sides of the world or do not speak the same language. They still have interaction and communication through a computer or mobile device.

Therefore, the researcher aimed at determining factors related to the change and development in the E-Business system in hotel management in order to improve their performance. The researcher expected that all of the information from this research could help the Anchaleewiwat group in changing and developing their E-business system, and also guiding the organization to solve problems in order to obtain the most effective performance in working processes and the most benefit for the company.

Research Objectives

Because technology is always improving to new levels and the cost of changing an E-business system is very high, it is important to know the employees' opinions about the system to improve the decision making concerning the change of the E-business system. Therefore, the objectives of this study can be written as follows:

1. To study demographic factors and internal factors that affect the decision making of changing in E-business system in hotel management.

2. To determine the factors that affect the decision making of changing in E-business system in hotel management.

Research Hypotheses

There are two hypotheses for this study.

Hypothesis 1: Different demographic factors have intentions to change management in E-business systems of hotel management.

Hypothesis 2: Different internal factors affect intentions to change management in E-business systems of hotel management.

Scope of the Study

In this study, the researcher had set the scope of the study in three aspects including scope of the content, scope of population and scope of time. The detail were explained below:

Scope of the content: In this research, the researcher focused on variables involving personal demographic information, internal factors and the effect of factors influencing the acceptance and development of the new E-Business system in hotel management divided into two variables. The first is independent variable which consisted of demographic factors (gender, age, education, and marital status) and internal factors (motivation and attitude). Another is dependent variables which included change management in e-business system of hotel management.

Scope of population: The population in this study consist of the employee who work in hotel section in the Anchaleewiwat group.

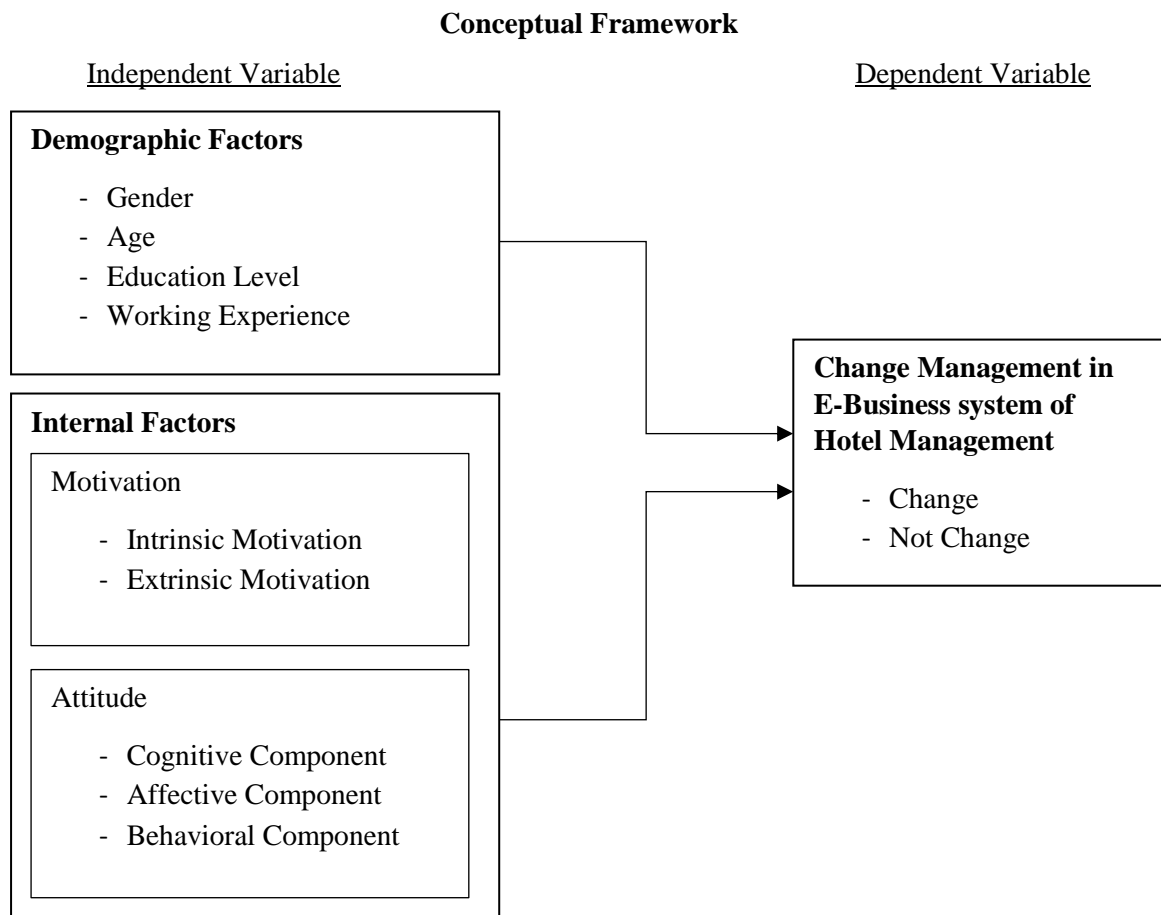Scope of time: Data gathered taken place from 24 April -12 May, 2017.

Conceptual Framework

Independent Variable   Dependent Variable

Demographic Factors

- Gender
- Age
- Education Level
- Working Experience

Change Management in E-Business system of Hotel Management

- Change
- Not Change

Internal Factors

Motivation

- Intrinsic Motivation
- Extrinsic Motivation

Attitude

- Cognitive Component
- Affective Component
- Behavioral Component

Figure 1 Conceptual Framework

Literature Reviews

1. Concept and theories of motivation

Badu (2005 cited in Yimpuang, 2011) defined motivation as "a human psychological characteristic that adds to a person's degree of commitment. It is the management process of influencing employees' behavior." Herzberg (2005 cited in Aei, 2012) classified the factors that influence working performance in 2 groups: Motivation factors and Maintenance factors. The first is that motivation factors are factors that motivate the workers to work with happiness and creativity. This kind of factor is involved with feelings. It can be referred to as intrinsic motivation. The other one is that maintenance factors are factors that are involved with the situation. They can create dissatisfaction among the employees and also affect the work environment. Many researchers studied about the motivation and they found that motivation is very important for organizations that they can create work performance and organizational commitment (Trisakhon & Onputtha, 2015).

2. Concept and theories of attitude

Myers (2001) stated that attitude is "a favorable or unfavorable evaluative reaction toward something or someone, exhibited in ones beliefs, feelings, or intended behavior." Schermerhorn (2000 cited in Yodkaew, 2011) explained that attitude is a way of thinking and feeling to respond in a positive or negative way towards people and things in the normal environment. Attitude is known by the words or experienced from the behavior of these persons. Schermerhorn (2000 cited in Yodkaew, 2011) explained that attitude has 3 components including Cognitive components, Affective component and Behavioral component. The first is that cognitive components are attitude that lead to the belief, opinion, and knowledge of each person. The second is that affective component are the specific feelings or emotions that arise in a person from a simulative situation. The other one is that behavioral component are the intentions to behave in specific ways based of specific feelings or specific attitudes from each person.

3. Concepts and theories of management information system

Stair and Reynolds (2014) explained that a management information system (MIS) is a cluster of software, databases, tools, and people to do the various business tasks which provide information to the user. MIS focuses on operational efficiency. It uses normal databases and provides standard reports to the user generated from transaction processing systems (TPS) or Enterprise resource planning (ERP). Heidarkhani, Khomami, Jahanbazi and Alipoor (2013) defined that a management information system is an organizational information computer system that uses intramural information from the database and also from the operating process system, and summarizes into an information management report to use in management tasks. In terms of the hotel management information system, it defined as the system that uses information technology in

the hotel to effectively process all operations including accommodation, food, beverage, and other services in the hotel. Karnchanawong (2012) classified the application of management information technologies in hotels including management, marketing and service. The first is about management. In this section, MIS is used to perform the tasks of management such as accounting and financial, and decision support for planning, controlling and development. The second is about Marketing. In this section, MIS was implemented to provide information to the customers such as advertisement from website or news or promotions. The third is about service. In this section, MIS was used for the convenience of the customer, such as online reservations, call center, video conference etc.

Research Methodology

This study was a mixed method research studying about the factors that related to change and development in the E-Business system in Hotel Management. Therefore, the researcher has divided into 2 parts including demographic factors and internal factors that consist of motivation and attitude. In this study, the research had been conducted by using survey questionnaires to survey operational employees' opinion.

1. Population and samples of the research

According to the research design, the study selected employees working in the hotels of Anchaleewiwat Group. There were about 200 employees answering the questionnaires.

2. Research instrument

In this study, the researcher initially used the questionnaire. In terms of questionnaire, the researchers created questionnaires consisting of two parts including demographic data and internal factors. For demographic data, the variables included gender, age, education level, working experience and income level. There are two measurement scales used in this part. Nominal scale was employed for gender and education level and ordinal scale was employed for age, working experience, and income level. For internal factors, the researcher asked about employees' opinion towards E-business system in the workplace. The five-point Likert scale was used to rate how important the questions was.

3. Data analysis

For qualitative research, the researcher used content analysis to analyze the data obtained by the focused group and interview. For quantitative research, the researcher code and analyze collected data by using a computer with SPSS (Statistical Package for the Social Sciences) for the statistical analysis. Herewith, descriptive statistics consisting of frequencies, distribution, and

percentage was hired to describe demographic information part meanwhile inferential statistics included logistic regression was used to test the association between the independent variables and dependent variables.

Results

1. Descriptive analysis

1.1 Study of respondent's demographic background

From the study about respondent's demographic background, the finding found that most of the respondents are male (50.5%) and female (49.5%). Their age level starts from below 20 years up to more than 51 years. Their education level starts from high school until doctoral degree. Their working experience starts from 0 years to 25 years and their income level goes from 10,000 up to more than 25,000 baht. Most of the respondents are in the age range of 20-30 years at 57.5%, in bachelor degree range at 47%, and working experience in the 5 – 10 years range at 57.5%.

1.2 Study of employees' opinion towards internal factors

Table 1 Descriptive statistic of the factors which are related to change and development

Internal Factor	Significant Level		
	$\bar{x}$	SD	Level
1. Intrinsic motivation	3.92	0.37	Very Important
2. Extrinsic motivation	3.03	0.36	Important
3. Cognitive component	3.46	0.58	Very Important
4. Affective component	3.42	0.46	Very Important
5. Behavioral component	3.44	0.67	Very Important
Total	3.45	0.49	Very Important

From the Table 1, the results of the study of internal factors including motivation and attitude relating to change and development in E-business system in hotel indicated that the overall of internal factor is rated in "Very Important" level with mean score as of 3.45. When considering into each aspects, it was found that all of the factors including intrinsic motivation, cognitive component, affective component and behavioral component have the level of conception in "Very Important" level with mean score as of 3.92, 3.46, 3.42 and 3.44, respectively. In the meantime, the extrinsic motivation aspect was rated in "Important" level with mean score as of 3.03.

2. Inferential analysis

Hypothesis 1: Different demographic factors have intentions to change management in E-business systems of hotel management.

Table 2 Chi-square test analysis of demographic factors

Factors	Pearson Chi-square	Asymp. sig. (2-sided)	Results
Gender	2.637	.104	Reject H_1
Age level	24.400	.000	Fail to Reject H_1
Education level	550	.908	Reject H_1
Working experience	20.721	.000	Fail to Reject H_1
Income level	9.580	.048	Fail to Reject H_1

Form the table 2, the analyzed results show that some of demographic factors have intentions to change management in E-business systems of hotel management. The outcome demonstrates the significance of each factor that affects the dependent variable, which is the age level, working experience, and income level, which have a significance of .000, .000, and .048 respectively, which is less than the p value of 0.05.

Hypothesis 2: Different internal factors affect intentions to change management in E-business systems of hotel management.

Table 3 Variables of internal factors and change management in E-business systems of hotel management in the equation

Factors	B	S.E.	Wald	df	Sig.	Exp(B)
Motivation						
Intrinsic motivation	-.630	.518	1.482	1	.224	.533
Extrinsic motivation	.386	.518	.555	1	.456	1.471
Attitude						
Cognitive components	-.954	.401	5.648	1	.017*	.385
Affective components	.698	.506	1.907	1	.167	2.010
Behavioral components	-1.151	.350	10.836	1	.001*	.316
Constant	5.214	2.219	5.523	1	.019	183.880

From the Table 3, the analyzed results show that the internal factors have intentions to change management in E-business systems of hotel management. The outcome demonstrates the significance of each factor that affects the dependent variable, which are the cognitive components and behavioral components of attitude theory; these showed a significance of 0.017 and 0.001 respectively, which is less than the p value of 0.05.

Discussion and Conclusion

There are two hypotheses for this study. The researcher will start from the first and go on to the second hypothesis

Different demographic factors have intentions to change management in E-business systems of hotel management.

The conclusion states that different age levels, different work experience and different income levels affect the intentions to change management in E-business systems of hotel management. This study identified that the people who are always at the front-line and adapt to change are the group of people that like risks, young people, and wealthy people. Students and the workers also like to try new technology (Rogers, 2003 cited in Pollawan et al., 2014). Also in this research, the different genders and different education levels intentions to change E-business systems in hotel management accords with a study of acceptance of computer technology among police officers. That study showed that different gender and education levels do not have different intentions to accept the new technology (Panthong, 1997 cited in Luanwan, 2012). Everyone, regardless of gender and education level, has to learn to use the system to get his or her job done.

Different internal factors affect intentions to change management in E-business systems of hotel management.

In this research, the internal factors are divided into motivation and attitude. Motivation is divided into two main groups: intrinsic motivation and extrinsic motivation. Attitude is divided into three main groups: cognitive components, affective components, and behavioral components. The conclusion states that the cognitive components and behavioral components of attitude theory have intention to change management in E-business systems of hotel management. This identified that the acceptance of the new system is the most important factor that affects the intention of the changing the technology system (Ellitan, 2002 cited in Arkaphati, 2014). In this research, different motivations do not affect intention to change management in E-business systems in hotel management. Motivation directly affects work performance. It provides satisfaction when they are working, and when they are satisfied with their performance they will be happy to work (Luanwan, 2012).

Recommendations

This research proved that the cognitive and behavioral components in the theory of attitude are the major factors affecting change management in E-business systems in hotel management; the affective components are factors as well. The result is beneficial to help organizations concentrate on employee internal factors towards the change management in E-business system. The organization would be able to plan to invest in the E-business system. The outcome shows that if the organization makes the effort to learn about employee attitudes towards the system, the management team will know how to change the system. From the point of view of the executive

staff, the cost of investing in a hotel E-business system is very high, so the management team have to know exactly how the employees affect the system and also how the system affects the employee. So the team can find the best solution about changing and investing in the system in order to benefit the organization. When the team finds the best solution, it will also increase the employee's effort to make the company successful.

This model suggests the level at which factors can be most affective to the change. The result shows that attitude has the highest level among the two internal factors but all of them are important. If the organization knows their employees' abilities, the change will be easy and successful. Furthermore, the cost of changing the system will decrease from the existing system, because the executive team knows exactly about their employee, so they can find the most suitable system for them and the management can get the best performance from their employees.

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TAOBAO, THE MARKETING PROBLEM AND RECOMMENDATIONS FOR IMPROVING CUSTOMER SATISFACTION

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Abstract

This study encodes the online customer comments from Taobao based on content analysis, and through summarizing the comments categories. The data were 547 comments collected from review evaluation system pages of each of 100 Taobao's women's clothing stores. Content analysis and open-ended coding were used to process and analyze the data. The result of analysis showed that different categories have different frequencies. There are 6 problems with Taobao's women's clothing stores: quality of products, the product information accuracy, price of products, logistics service, quality of service, and others. For each problem solution, the researcher puts forward recommendations that the entrepreneur should ensure products quality, optimize the product strategy to ensure product information accuracy, optimize the pricing strategy to ensure a reasonable price, improve logistics service by fourth party logistics, improve quality of service, and improve customer satisfaction. And finally, recommendations for further study has been offered.

Keywords: Taobao, Marketing Problem, Online Marketing, Customer Satisfaction

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Introduction

Electronic commerce refers to using the Internet or other electronic tools (including telegraph, telephone, radio, television, fax, computer, computer network, mobile communication, etc.) in the global business trade, on the basis of the computer network of a variety of business activities, including goods and services providers, advertisers, consumers, intermediaries and other related parties. Relying on a relatively perfect credit system and safety certification, the development of online shopping has become more perfect, and is becoming mature. As a new kind of retail shopping mode, online shopping has become a powerful trend. Today, the traditional business model faces more challenges from online shopping, with online shopping becoming more mature, people choose to stay at home surfing the Internet, and enjoying how online shopping brings convenience and low prices.

Founded by Alibaba Group on May 10, 2003, Taobao is Asia's largest retail shopping site. Taobao has made rapid progress in recent years. Taobao is a Chinese website for online shopping similar to eBay or Amazon which is operated in China by Alibaba Group. Taobao facilitates the consumer to consumer (C2C) retail by providing a platform for small businesses and individual entrepreneurs to open online store that mainly cater to consumers in Chinese-speaking regions (Mainland China, Hong Kong, Macau and Taiwan) and abroad. At the end of 2010, the number of registered members on Taobao had reached over 370 million, around 80% of the Chinese online shopping market. With around 760 million product listings as of March 2013, Taobao is one of the world's top 10 most visited websites according to Alexa. For the fiscal year ending on March 31, 2013, the combined gross merchandise volume of Taobao exceeded 1 trillion yuan, more than that of eBay and Amazon combined. Taobao has more than 1.4 billion online goods, including appliances, clothing, home decorations, bags, cars, cosmetics, baby products, books and other industries, for a total of more than 30,000 brands (Wikipedia, 2017).

With the globalization of the market economy and e-commerce's rapid development, online shopping has broken geographical constraints through commodity circulation channels and become an important means of enterprise marketing. Online shopping marketing has changed the traditional form. The entrepreneurs have to take it into account (Jotikasthira & Onputtha, 2018). It helps enterprises to reduce costs, expand their market, improve work efficiency and bring more social and economic benefits.

Taobao online shopping marketing is in rapid development; however, it is still in the immature stage. Many people are paying attention to the issues of Taobao: the quality of products, credit index, online payment security, brand and pricing, logistics distribution, delivery service, after-sales service, customer satisfaction and laws and regulations, etc. Therefore, the researcher was interested in studying about the marketing problem and recommendations for improving customer satisfaction. With this study, the result can help improve the online shopping entrepreneurs' performance.

Research Objectives

1. To study the comments of Taobao's women's clothing store and find the problems in Taobao's marketing

2. To recommend solutions to the problems of Taobao's marketing

Research Limitations

The foremost limitation of this study is the representativeness of the sample. This research was a qualitative focus group survey, and selected secondary data for analysis from the Taobao website. It may not have produced results that can be generalized to a large population. In addition, the numbers of variables are growing rapidly every day, so the data of each sampling may be one-sided. The result of this study depends on the accuracy of participants who commented on their experiences on the Taobao website.

Research Contributions

On the one hand, through studying the problems in the process of Taobao's marketing, and the summary and analysis of these problems, and on the other hand, putting forward related recommendations aimed at current problems, this research not only promotes the development of Taobao, but also marketing activities will be more flexible with relevant theories in the future. By promoting China's e-commerce marketing innovation, we can achieve a win-win situation for both consumers and sellers and create more value for society.

Literature Review

1. Taobao's strategic management

Liu (2016) showed that Taobao is an acknowledged leader in both business to beusiess (B2C) and consumer to consumer (C2C) online shopping in China. Taobao had more than 190 million registered users at the end of April, 2010. It has built a strong brand and is recognized by more Netizens (which is defined as the Chinese population who have accessed the Internet in the past 6 months by the China Internet Network Information Centre). The company is well-thought-of by customers, which gives Taobao more advantages in competition. Yang and Liu (2009) stated that Taobao is at the top of the E-commerce market in recent years. The most important and effective strategies are operation strategies and service strategies. Li and Zhang (2012) reported that there are three main business strategies adopted by Taobao consisting of "completely free of charge" strategy, promotion strategies and cooperation with banks.

2. Taobao's product quality

Quality refers to the ability of a product or service to consistently meet or exceed customer requirements or expectations. Different customers will have different expectations, so a working

definition of quality is customer-dependent. Taobao sells most products at a low price, which would have been the advantage of e-commerce, but with Taobao's open policies and the price competition between small sellers and medium-size sellers, fake and imitation goods appeared on Taobao. This will seriously affect the consumers' views of Taobao, especially first-time online shoppers. Yan and Wang (2012) mentioned that Taobao has established a series of regulations that are used for administration. For instance, Taobao signed a consumer protection agreement with 6 million Taobao sellers and set up a fund of 200 million yuan to guarantee the security of online purchases. Taobao also established a security system to protect the customer's rights and other.

3. Taobao's product information accuracy

Product information plays a key role in online sales: it is important when making a purchase decision. In particular, product descriptions and images are critical, with the vast majority of consumers saying they are important. Product reviews are also important in the online sales process. Li (2015) survey showed that the Taobao shop and user purchase channels continue to increase, leading to customer loyalty decline. Factors influencing online shopping customer satisfaction include product properties, product information description and service quality. Product information description includes: product size, picture color discrepancy, product description differences and other.

4. Taobao's product price

Many Taobao online stores depended on the advantage of the supply chain to implement sales promotions, through a high-volume, low-margin business strategy. Gao (2016) stated that current pricing of Taobao sellers included experience of the pricing method, based on past experience. This method has advantages and disadvantages. The advantages can include saving time and quick decisions. However, the disadvantages can be about the insufficient market analyses lead to no profit. Wang (2013) explored influential factors of Taobao's pricing strategy pricing targets, product costs, product properties, market shifts and demands, competitors' price and logistics factors. Therefore, it is very important to consider about the pricing strategies.

5. Taobao's logistic service

Zhang (2010) stated that Taobao cooperated with many logistics companies, but the logistics companies' service quality and service prices are different. If customers found problems in the logistics distribution segments, they associated them with Taobao sellers, thus affecting the Taobao sales and corporate image. Wang (2013) mentioned that Taobao is an online marketplace, in which all of the sellers have to send their products by logistics companies. Taobao does not just provide the local products, but also offers the procurement of overseas products, which means staffs

from overseas purchase products that are only sold in foreign countries. For these reasons, the logistics companies play a key role in delivery.

6. Taobao's service quality

According to Yue (2008), Taobao provides many kinds of customer service to meet both sellers' and buyers' needs. Customers can ask questions or make complaints through their call center, live chat or emails. A call center is available 24 hours, seven days a week and Taobao promises that any questions and complaints will be settled within 24 hours. Customers can also enter the "Taobao Helping Community" to have a live chat with other members to give and receive help. Taobao's top management executives frequently communicate with their customers in order to better understand their needs and requirements. When Taobao discovered its customers were willing to negotiate with sellers before purchasing, the company quickly provided an online messaging service called "Ali-Wangwang." Ali-Wangwang provides instant communication between buyers and sellers and enables buyers to get thorough product knowledge in a short time and a chance to negotiate before they decide to purchase.

Research Methodology

1. Research design

This research takes customers' comments about Taobao's women's clothing stores as the research object, analyzes the customer's comments by content analysis, concludes the major categories and frequency of comments, and proposes solutions and suggestions to improve customer satisfaction with Taobao. "China's online shopping user behaviour research" (China Daily, 2012) reported that the "Top five of Taobao sales" included: Women's clothing, Men's clothing, Mobile phones, Cosmetics and skincare and Digital accessories. Herewith, the researcher chose the first ranked stores by sales, which is women's clothing, and obtained secondary data from the evaluation system web page of Taobao.

2. Sampling selection

Donald and Pamela (2014) stated that a non-probability sample that conforms to certain criteria is called purposive sampling. Purposive sampling occurs when a researcher selects sample members to conform to some criterion. When one wishes to select a biased group for screening purposes, this sampling method is also a good choice. It is also used to improve representativeness. The logic behind purposive sampling is that certain relevant characteristics describe the dimensions of the population. If a sample has the same distribution on these characteristics, then it is likely to be representative of the population regarding other variables over which we have no control.

The sample for this research study was a purposeful selection of comments about Taobao women's clothing stores. The criterion is that each Taobao online store must be of the type women's

clothing. The researcher chose the purposive sampling method. The results indicated that there were 547 comments regarding the types of women's clothing, which they were 170 comments regarding coats, 159 comments regarding pants, 106 comments regarding skirts and 112 comments regarding underwear.

The researcher viewed each store's evaluation page to find the negative comments, collected secondary data and classified it. It is quick and easy to obtain the sample feedback, because it does not require direct contact with a study participant or group.

3. Data collection

People demand more personalized service, offline store coverage and many types of the goods. This study collect some online customer comments data, and these comments are targeted which representing customer satisfaction with products and services. The Taobao evaluation system records each member's comment and requires feedback after each transaction made. The feedback list contains the overall ratio of customers' positive feedback, and the separate data of recent week, month and half year, etc. Every Taobao store has an evaluation page, and every customer can read comments before decide purchase.

For this qualitative research, there was a purposive selection of comments from each women's clothing store's evaluation page of the first ranked sales. The researcher recorded the comments about the store, customers insight, their purchase experiences, and their expectation about each product, as well as including service quality on the evaluation system page.

4. Data analysis

Donald and Pamela (2014) stated that content analysis measures the semantic content or aspect of a message. Its breadth makes it a flexible and wide-ranging tool that may be used as a stand-alone methodology or as a problem-specific technique. Content analysis may be used to analyze written, audio, or video data from experiments, observations, surveys, and secondary data studies. The obvious data to be content-analyzed include transcripts of focus groups, transcripts of interviews, and open-ended survey responses. But, researchers also use content analysis in advertisements, promotional brochures, press releases, speeches, Web pages, historical documents, and conference proceedings, as well as magazine and newspaper articles.

Results

One of the primary reasons for using open-end coding is that insufficient information or lack of a hypothesis may prohibit preparing response categories in advance. Researchers are forced to categorize responses after the data are collected (Converse & Presser, 1986). Through managing and analyzing the collected data to explore the concept, this research derived 6 categories of comments including quality of products, product information accuracy, product information

accuracy, price of products, logistics service, quality of service and others. Through analyzing the content of customer's comments it was found that different categories have different frequency.

Table 1 Frequency of comments in each category

Code	Category of comments	Frequency	Rank
1	Quality of products	196	1
2	Product information accuracy	115	2
3	Price of products	28	6
4	Logistics service	59	4
5	Quality of service	112	3
6	Others	37	5
	Total	547	

From the Table 1, the finding showed that the frequency of comments in each category. The most common complaint is about the quality of products (total 196 comments), the second is product information accuracy (total 115 comments), the third is quality of service (total 112 comments), the fourth is logistics service (total 59 comments), the fifth is others (total 37 comments), and the last one is price of products (total 28 comments).

Table 2 Frequency of comments in each category classified by type of women's clothing

Types of women's clothing	Code	Frequency	Rank
	1	58	1
	2	39	2
	3	8	6
Coats	4	21	4
	5	31	3
	6	13	5
Total		170	1
	1	61	1
	2	33	3
	3	5	5
Pants	4	20	4
	5	36	2
	6	4	6
Total		159	2

Table 2 Frequency of comments in each category classified by type of women's clothing (Cont.)

Types of women's clothing	Code	Frequency	Rank
Skirts	1	39	1
	2	19	3
	3	10	4
	4	7	5
	5	26	2
	6	5	6
Total		106	4
Underwear	1	38	1
	2	24	2
	3	5	6
	4	11	5
	5	19	3
	6	15	4
Total		112	3
Total of all types of women's clothing		**547**	

From the Table 2, the study showed that for coats, the rank 1 is quality of products, total 58 comments, rank 2 is product information accuracy, total 39 comments, rank 3 is quality of service, total 31 comments, rank 4 is logistics service, total 21 comments, rank 5 is others, total 13 comments and rank 6 is price of products, total 8 comments. For pants, rank 1 is quality of products, total 61 comments, rank 2 is quality of service, total 36 comments, rank 3 is product information accuracy, total 33 comments, rank 4 is logistics service, total 20 comments, rank 5 is price of products, total 5 comments and rank 6 is others, total 4 comments. For skirts, rank 1 is quality of products, total 39 comments, rank 2 is quality of service, total 26 comments, rank 3 is product information accuracy, total 19 comments, rank 4 is price of products, total 10 comments, rank 5 is logistics service, total 7 comments and rank 6 is others, total 5 comments. For underwear, rank 1 is quality of products, total 38 comments, rank 2 is product information accuracy, total 24 comments, rank 3 is quality of service, total 19 comments, rank 4 is others, total 15 comments, rank 5 is logistics service, total 11 comments and rank 6 is price of products, total 5 comments.

Conclusion and Recommendations

1. Conclusion

The 547 comments data were collected from the evaluation system pages of each of 100 Taobao women's clothing stores, then content analysis and open-ended coding were used to process and analyze. The results of the analysis showed that different categories have different frequencies. From the study, there are 6 problems with Taobao's women's clothing stores that can be discussed in this part.

In terms of product quality, in online shopping, the customers cannot touch and feel the real quality of products, but they can only identify it through advertising: it is uncertain. However, the price of Taobao's product is mostly cheaper than a bricks-and-mortar shop, and the requirements for opening a Taobao store is less, so the competition is fierce. Thus, fake and shoddy products become more and more common. The quality of products is the foundation of the long-term development of the sellers, and also the important factor which affects customer satisfaction in online shopping. Many customers prefer to consider the quality of the product (Chienwattanasook & Onputtha, 2018). Quality of product includes the material, performance, workmanship, durability of product and other.

In terms of product information accuracy, the customers need product information to determine whether the products meet their needs. The size of products, whether they are the same as standard size, whether the product description is inaccurate, or the pictures are a different color from the actual product, will all affect customer satisfaction. The customers' negative comments about product information were: "the color of clothes is different from the pictures", "size of clothes is not standard", "the clothes is not same as the pictures" and so on. This finding matches with the study by Filieri & McLeay (2014) who found that the information, especially, on website is crucial for customer to refer it for decision making of purchase. In additon, this result also corresponds with Suwanna, Nilapornkul, and Jantarakolica (2016) who found that the information about the products can be beneficial to the customers, especailly in using mobile banking in Thailand.

In terms of price of products, the current sellers on Taobao's online store have a limited knowledge of marketing theory and most sellers do not have a pricing strategy, so there are more and more problems with pricing. For example, when the cost of logistics is high, the price is high. So the attractive price of Taobao is difficult to maintain and the sellers have difficulty getting positive comments from customers (Wang, 2013). When customers receive products and compare with the quality of another online store they give negative comments like: "it is not worth this price".

In terms of logistics service, the logistics service is very important for online transactions because of the different locations of the seller and the buyer. Customers want to receive their products as soon as possible, want to see the product's logistics information in real time, and also to experience quality service from logistics personnel. The logistics service is also important for the

customers' comments after purchasing. This includes logistics speed, logistics information and logistics service attitude.

In terms of quality of service, the customers cannot experience and touch the products when purchasing from an online store, so the customers will have more questions, and will also want to be able to receive the right product at the right time (Yue, 2008). They want to solve products' problems as soon as possible. Therefore, the seller should create the quality of service which it can include seller's attitude to service, seller's delivery speed, after-sale service, and correction if the seller sends the wrong products and packaging problems with products. With these, the service quality has strong influence on customer's decision (Chienwattanasook & Sukortprommee 2016).

2. Recommendations for implication

For recommendations for solving problems, the sellers should ensure the quality of products, optimize product strategy to ensure product information accuracy, optimize pricing strategy to ensure reasonable price, improve logistics service by fourth party logistics, improve quality of service and improve customer satisfaction.

3. Recommendations for further study

For recommendations for further study, firstly, researchers should conduct the focus group study in order to gain indepth of information. Secondly, researchers should diversify the type of products and expand the scope of study, they will find more problems and put forward better recommendations in the future. Lastly, researcher should select more types with 1-2 years comments data to analyze because this research selected only 5 months of comments data (January-May, 2017).

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Book Review: *Essentials of Marketing*
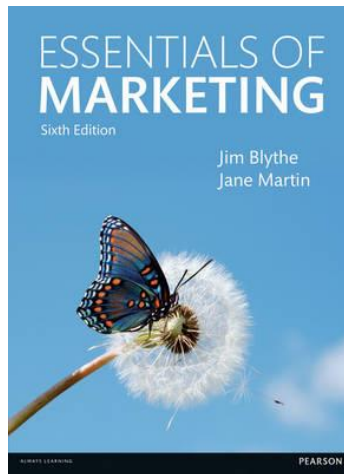
Author: Blythe, J., & Martin, J. (2016).

Reviewed by: Assoc. Prof. Sudaporn Kuntonbutr, Ph.D.

The "Essentials of Marketing" by Jim Blythe and Jane Martin from Pearson Education Limited is an essential book for all players in marketing field. The feature of this book is considered in terms of the authors simplify complexity substantial knowledge in marketing to all reader and marketer for applying in any circumstances of marketing environment. The book starts with basic concept of marketing concerning to the roles that marketers perform daily work. Then, the psychological factors in marketing such as consumer behavior, segmentation, targeting, and positioning are explained in the easy understanding by readers from all level of knowledge. The crucial influences on the decision to buy are presented as personal factors, psychological factors, and social factors. Then, the marketing technique for access to the customers are explained in detail, accompanied with some case study in Europe. Those techniques are segmentation, targeting, and positioning (STP). The readers can earn benefit by good experiences from simple explanation and appropriate examples before proceeding to apply for marketing activities in every occasion. In addition, the readers who have less experiences in marketing can learn all marketing activities concerning to marketing mixed like product, price, place, and promotion. The highlight of this book is not only its simplification for anyone to read, but also encourages the readers in term of critical thinking. Every chapter provides some part to practice for critical thinking that will connect between various marketing functions. Moreover, the important issue in current business today is presented. The sustainable marketing is mentioned. Currently, the marketing aspect has been undergoing some rapid growth of new technology in communication which finally affect marketing technology. Therefore, every readers will have experiences in marketing connect from nowadays to the future.

In conclusion, the book suits for any audiences who have little experiences in business and marketing to understand the holistic picture of marketing. Therefore, everyone who come from other areas can become marketer and overcome any problems in their marketing task. Moreover, the book inspires any audiences to develop their knowledge to marketing creativity behaviors, which is the purpose of authors.