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Publisher

Sripatum University Press, Bangkok, Thailand

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ISSN: 2408-1914

Welcome Address from President, Sripatum University

Welcome to the fifth volume of International Journal of Management, Business, and Economics (IJMBE). IJMBE is dedicated to increasing the depth of the subject across business disciplines with the ultimate aim of expanding knowledge of the subject. The IJMBE is a thrice peer-reviewed journal published by Graduate College of Management, Sripatum University; University of Greenwich; and Lincoln University.

In retrospect, Sripatum University, one of the oldest and most prestigious private universities in Thailand, was established in 1970 by Dr. Sook Pookayaporn by the name "Sripatum College." The name "Sripatum" meaning "Source of Knowledge Blooming like a Lotus" was conferred on the college by Her Royal Highness the Princess Mother. In 1987, the college was promoted to university status by the Ministry of University Affairs, and has since been known as Sripatum University. The university's main goal is to create well-rounded students who can develop themselves to their chosen fields of study and to instill the students with correct attitudes towards education so that they are enthusiastic in their pursuit of knowledge and self-development.

To strive to be among the best, this first issue of the IJMBE is therefore instrumental for the most important academic growths to extend a high quality tradition in the education field to the world. The journal welcomes the submission of manuscripts that meet the general criteria of significance and scientific excellence, and will publish original articles in basic and applied research, case studies, critical reviews, surveys, opinions, commentaries and essays. It is hoped that this first issue will set a new benchmark in terms of academic publications. Through the support of our Editorial and Advisory Boards, I hope this journal could provide academic articles of the highest quality to all readers.



Dr. Rutchaneeporn Pookayaporn Phukkamarn
President, Sripatum University

Welcome Address from Dean, Sripatum University

It is appropriate to celebrate the continuity of an exciting and esteemed journal. The IJMBE will serve and provide a forum for exchange of ideas among business executives and academicians concerned with Management, Business, and Economics issues. With the rapid evolution of corporate business from international to global in recent years, general business has been one of the areas of greatest added complexity and concern for corporate managers. The IJMBE will be an academic journal combining academic inquiry and informed business practices. It will publish empirical, analytical, review, and survey articles, as well as case studies related to all areas of Management, Business, and Economics. A sentiment often expressed by practitioners is that academic research in general may not be addressing the most relevant questions in the real world.

It is fair to say that the IJMBE will publish high-quality applied-research papers. Nevertheless, studies that test important theoretical works and shed additional light on the issue with some business implications will also be solicited. Each submitted paper has been reviewed by several members of the IJMBE international editorial board and external referees. On the basis, we would like to thank all of them for their support with review process of submitted papers.

I cordially invite papers with theoretical research/conceptual work or applied research/applications on topics related to research, practice, and teaching in all subject areas of Management, Business, and Economics, or related subjects. I welcome paper submissions on the basis that the material has not been published elsewhere. The ultimate goal is to develop a journal that will appeal to both management and business practitioners. I expect the IJMBE to be an outstanding international forum for the exchange of ideas and results, and provide a baseline of further progress in the aforementioned areas.



Assoc. Prof. Dr. Vichit U-on
Dean, Graduate College of Management
Sripatum University

The Editors

Editor-In-Chief



Dr. Ungul Laptaned is an Assistant Professor in the Graduate College of Management, Sripatum University. He graduated with a Ph.D. in 2003 from the University of Nottingham, United Kingdom in the field of Manufacturing Engineering and Operations Management. Ungul has published over 60 proceedings and journal papers; for instances, Industrial Engineering Network, Asia Pacific Industrial Engineering and Management, International Association of Science and Technology for Development, Operations and Supply Chain Management, Intelligent Manufacturing System, Business and Information, etc. He served as a program chair and a steering committee for several domestic and international conferences. He was a journal editor of International Journal of Logistics and Transport, and Thai Researchers' Consortium of Value Chain Management and Logistics Journal, and has consulted for several public organizations and industrial firms on logistics and supply chain management such as Thailand Research Fund, Phitsanulok Province, Public Warehouse Organization, Amatanakorn Industrial Estate, Wyncoast Industrial Park, Iron and Steel Institute of Thailand, Chacheongsao Province, JWD Infologistics Co., Ltd., Kerry Distribution (Thailand) Co., Ltd., TKL Logistics and Supply Chain Co., Ltd., and Ministry of Transport (Thailand).

Associate Editor



Dr. Ioannis Manikas holds a Bachelor in Agriculture and a Master of Science in the field of logistics from Cranfield University. He holds a PhD from the Department of Agricultural Economics in AUTH and his primary interest includes supply chain management, logistics and agribusiness management. Dr Manikas has conducted research for projects regarding supply chain modelling, development of IT solutions for agrifood supply chain management and traceability both in Greece and the UK. He has a wide experience in the elaboration of research proposals under FP6, FP7, and Eurostars-Eureka funding mechanisms; lifelong learning oriented programmes such as Leonardo; and Interregional development programmes such as Interreg III and Interreg IV. His work as a self employed project manager and consultant in the agrifood sector includes the design and development of regional operational programmes; analysis of regional needs and respective development policies focused on rural and food production; definition of funding areas and financing resources; definition of strategic goals for regional development and formulation of respective performance monitoring systems; and assessment (ex-ante, on-going, ex-post) of the implementation of EC and national funding mechanisms in national and regional levels.

Guest Editor



Dr. Gilbert Nartea is an Associate Professor in the Faculty of Commerce, Lincoln University, New Zealand. Dr. Nartea graduated a Master's Degree from New England and a Ph.D. from Illinois, USA. He is a senior lecturer in Finance. His teaching interests are in the area of investments, futures and options, and finance, futures and options. The area of research interests area asset pricing, investment management, decision-analysis and risk management, and microfinance and poverty alleviation. He has published several papers in such journals as of Property Investment and Finance, International Journal of Managerial Finance, Asian Journal of Business and Accounting, Australian Journal of Agricultural and Resource Economics, Pacific Rim Property Research Journal, Review of Applied Economics, Review of Development Cooperation, American Journal of Agricultural Economics, and Journal of the American Society of Farm Managers and Rural Appraisers.

Foreword

Welcome to the 1st issue of the 5th volume of International Journal of Management, Business, and Economics (IJMBE), the Editors received a number of papers from different countries such as Bangladesh, Netherlands, Pakistan, Taiwan, Thailand, Uganda, and United States of America. The received papers encompassed many areas of marketing, banking, economics, insurance and risk management, industrial and operation management, strategic management, and international and global business management. After the review process, a total of ten manuscripts were selected for publication.

The first article is authored by *Ali Muhammad Mohmand and Malik Shakeel Khan*, and named as “*Impact of HR Practices on Employee Turnover and Job Satisfaction: Evidence from Pakistan Universities*”. This research examines the impact of pertinent HR practices/policies upon a person’s job contentment and turnover in higher educational institutes. A special context of universities of KP have been chosen where numerous employees have developed job dissatisfaction and increased turnover because of deteriorating security conditions including but not limited to terrorism attacks, civil unrest, widespread diseases and uncondusive working environment.

The second paper is examined by *Daniel Tschopp, Doug Barney, and Passard C. Dean*. Their paper is entitled “*The Readability of Note Disclosures*”. The purpose of financial reporting is to help users make informed decisions. Over time the reporting process has become more and more complex. Reporting standards and rules have increased both in terms of quantity and sophistication. Because of this, it is important to ask the question about the basic premise of financial reporting – is the information being reported by companies useful to its intended users.

The third article is authored by *Dinh Tran Ngoc Huy*, and is entitled “*Changing Tax Policy Impact on the Risk Level of Vietnam Wholesale and Retail Firms*”. This study analyzes the impacts of tax policy on market risk for the listed firms in the wholesale and retail industry during this period as it becomes necessary. First, by using quantitative and analytical methods to estimate asset and equity beta of total 9 listed companies in Viet Nam wholesale and retail industry with a proper traditional model.

In the fourth article, entitled “*Dependency of Human Resource Planning on Human Resource Information System (HRIS): A Study on Banking Sector in Bangladesh*”, is written by *Farha Sultana*. This study focuses on the Dependency of Human Resource Planning on Human Resource Information System (HRIS): A Study on Banking Sector in Bangladesh. The objective is to identify the contribution of HRIS in HR planning through HRIS recruiting and training & development subsystems as apparent by HR executives in Bangladesh banking sector.

In the fifth article, entitled “*Logistics Crunch: Analysis of Intermodal Containers Resource in Pre and Post China Pakistan Economic Corridor’s Establishment*” conducted by *Maisam Ali and Shahzad Khurram*. The author stated that intermodal containers are largely neglected area in extant literature on logistics. This study contributes to the literature by highlighting the significance of intermodal containers particularly in context of Pakistan.

The sixth article is conducted by *Mohammad Milon*, and is entitled “*Organizational Citizenship Behavior (OCB) Practices among the University Teachers: Bangladesh Perspective*”. The purpose of this study was to examine the OCB practices among university teachers in Bangladesh considering altruism, courtesy, conscientiousness, sportsmanship and civic virtue etc. In this research, the structural questionnaire was used for primary data that includes five dimensions on OCB.

Article number seven is written by *Panot Asawachai*, and is entitled “*Management of Historic Site for Cultural Heritage Tourism: A Case Study of Wat Rajabopit Sathitmahasimaram Rajaworavihara, Bangkok*”. This research aimed to review the heritage values and cultural significance of Wat Rajabopit Sathitmahasimaram Rajaworavihara, and the potential for cultural heritage tourism.

The eight article is conducted by *Paradorn Khongmanee, Wuttipong Pongsuwan, and Suchai Thanawastien*, and is entitled “*Smart Bus Drivers: Fleet Management for Smart Workers*”. This research is a part of an initiative to improve bus services supporting workers in Thai Industrial Estates. The study aims to find smarter transportation using internet-based technology.

Article number nine is entitled “*The Impact of Human Resource Practices on Task Performance of Employees in Electrical, Electronics and Telecommunications Industry Group in Thailand*”, and is examined by *Praphan Chaikidurajai and Wassana Persalae*. The purposes of this research were to study about the impact of human resource practices on task performance of employees in electrical, electronics and telecommunications industry group in Thailand.

Last but not the least, the article entitled “*A Studio Based Approach for Enhancing Decisions of Poultry Farmers in East Africa*” is examined by *Rebecca Pearl Tumwebaze and Henk G. Sol*. This design science research aimed at enhancing the decision making processes of poultry farmers in the volatile and complex East African business environment with a decision enhancement studio.

It is hoped that you will enjoy reading these articles and that they will generate responses and discussions that will help advance our knowledge of the field of Management, Business, and Economics. The Editors and the Editorial Board of the IJMBE would like to welcome your future submissions to make this journal your forum for sharing ideas and research work with all interested parties.

Ungul Laptaned
Editor-In-Chief

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Impact of HR Practices on Employee Turnover and Job Satisfaction: Evidence from Pakistan Universities

by

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IJMBE International Journal of
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Abstract

This research examines the impact of pertinent HR practices/policies upon a person's job contentment and turnover in higher educational institutes. A special context of universities of KP have been chosen where numerous employees have developed job dissatisfaction and increased turnover because of deteriorating security conditions including but not limited to terrorism attacks, civil unrest, widespread diseases and uncondusive working environment. This has ultimately compelled them to leave their jobs and flee to other cities such as Islamabad and Karachi. More specifically, three HR policies i.e. employee participation, training and performance appraisal are analysed to affect job satisfaction and turnover. A quantitative survey was conducted to assess job outcomes of University teachers in multiple cities especially where living conditions have deteriorated in the recent past. Respondents were segregated on the basis of age, income per month, designation and gender basis. Frequency analysis and Mean Average Scores are reported for each construct. The regression results suggest a positive significant relation of employee participation and performance appraisal with that of job satisfaction while a significant negative relation is found with turnover ratio. The study concludes that universities should focus on implementing HR policies and practices effectively in workplace which will help retain employees and keep them motivated. This can be one of the many effective strategies to retain workforce and discourage brain-drain out of the country. The study ends with acknowledging limitations and offering future research directions.

Keywords: HR Practices, Job Satisfaction, Turnover, Performance Appraisal, Employee Participation

1. Introduction

Today's organisations are generally engaged in seeking more effective ways to increase productivity and to keep abreast with the enhanced competition to uphold its unique identity in the market. To achieve this very purpose they try to practically imply various tools and techniques including but not limited to accounting, financing and human resource decisions. Among all those techniques and practices, the Human Resource (HR) Practices hold a supreme position that can play a vital role in the overall effectiveness and efficiency of an organization.

The association between HR practices and work satisfaction is researched extensively in contemporary management world. Following other researchers in Europe and America, Belzen (2009) examines this association in a Dutch sample. Another study put forward by Brown and Hewood (2005) assert that employees' productivity can also be increased rapidly by providing them better opportunities for their career development. The literature also shows the importance of supervisor in organization (Gregersen and Black, 1999; Shaffer et al., 1999) Furthermore, Selmer (2001) state that the role of a supervisor is like a bridge that links the workers with the upper management of an organization.

The overall progress of the organization is one way or the other, influenced by prevalent HR practices (Stavrou, 2005). The key to success for an organization is to implement or adopt the ways and means how to satisfy the current employees. Existing research offers theoretical foundations and frameworks which can be the bases for bringing more holistic solution to a local personnel problem. (Arumugam and Mojtahedzadeh, 2011). The personal satisfaction of the employees will lead to a strong commitment towards organization and eventually will lead to lesser levels of turnover.

The concept of remuneration is vital because according to Aswathappa, (2008) it constrain the employees to stick to the job that yields more organizational productivity and less turn over. Remuneration is also another foundation building element that includes all the monetary and non-monetary incentives a worker receives in return of catering the services to an organization (Gary, 2008, p. 390). It may be concluded that the organizational endmost success is more or less dependent on the HR practices in use by the firm. The Human resource management if done effectively can ultimately lead to higher employee contentment and reduced turnover.

The focal point of research is to examine the impact of various HR practices and policies on employee turnover and to determine and suggest an appropriate mix of strategies that can be put into practice in order to reduce turnover in organizations. Job satisfaction is a vivid concept and is the foundation of any organization's success and prosperity. An organization flourishes only because of its employees. Therefore keeping employees satisfied is of prime importance to the success of organisations.

The proposed research inspects the impact of unmatched complementary HR practices that act as basis to employee's satisfaction and lead to a progressive organizational output. To put the concept into practice the study takes into account the teacher's satisfaction in the context of renowned universities in Khyber Pakhtunkhwa Pakistan. Narrowing the discussion into specific outlines, the research strives to achieve the following objectives.

- To find out an association between the different HR practices, policies and work outcomes such as work satisfaction and turnover ratios in higher education institutions (HEI's) of Pakistan.
- To examine as to what extent the levels of contentment and turnover ratios are determined by underlying factors in the human resource policies of training, employee participation and performance appraisal system.
- To draw suggestive measures to accomplish an enhanced levels of job satisfaction and reduced turnover ratio amongst university employees in an environment of chaos and conflict, such as the one in prevalent KP Pakistan.

2. Review of Literature and Hypothesis

Job satisfaction is a crucial element in general organizational behaviour and its impact on the employee's overall performance is unavoidable. There are many contributors which play their part actively to achieve the target including employee contribution, job specification, reimbursement, career management system, performance appraisements and selection criterion. A comprehensive research model is therefore formulated which encapsulates the general workforce practices and influence of job satisfaction on the productivity and outcome of Malaysian industries in particular (Arumugam & Mojtahedzadeh, 2011).

An investigation conducted by Olusegun, (2013) in South West Nigeria on the university employees revealed that there is an obvious distinctiveness in the linear combination effect of employee satisfaction and turnover intents. A research study carried out by Khan et al. (2012) took university instructors and considered the three distinctive sectors of Pakistan including the government, semi government and private sectors, revealed a gender bifurcated results. It was observed that female instructors are more likely to get influenced by the HR practices, whereas male teachers are more interested in their work and usually get satisfaction out of it.

Another study done by Huselid, (1995) suggested on the bases of sample gathered from around 1000 firms, exhibiting the significance of economical and statistical impression over transitional employee's outgrowth and the corporate financial growth in both short and long run respectively. The investigation regarding HR contribution reveals that the employee's approach and overall conduct is the outcome of HR practices and the way workers acknowledge the administration (Nishi, Iepak & Schneider, 2008). A constructive association can be observed in between salary strategies and work enhancement with job satisfaction/contentment, worker's devotion with job improvement strategies and strategies related with work balancing (Roberto & Jaquin, 2007).

The research also revealed the inverse relationship between worker's commitment and planned turnover. The influence of HRM practices with respect to HR outcomes targeting the Government banks operating in Sri Lanka was investigated by Rathana-weera (2010). The collection of data was done with the use of structured questionnaires in which the worker's approaches towards HR practices was analyzed. Sample based on 209 workers was gathered from various departments of two Sri Lankan Government banks. The conclusion reflected that HR practices are the foreseeing instruments of worker's contentment, commitment and withholding Rathana-weera (2010).

Belzen, (2009) also studied the relationship between job satisfaction and HR practices, according to him the improved HR practices powerfully influence the worker's built in relevant job contentment. The research indicates that the organizations with higher and more advanced HR practices finally yields to greater job satisfaction. An investigation done by Hussain and Rehman (2013) suggested that the association between HR practices and job security, training and inductions are strongly participating in the retention process and influences employees to retain their services with the organization. According to Mahmud and Idrish, (2011) the job related imbursements and in depth analysis of work are strong indicators predicting the intention of an employee to quit.

Another study carried out in Bangladesh by Absar, Azim, Balasundaram (2010) revealed a significant relationship between improved HR strategies and the number of satisfied and dedicated employees. A study done by Mumtaz, Aslam and Ahmad, (2011) to find out the influence of HR practices on job satisfaction of University instructors. The findings revealed that the mentioned set of HR practices did not influence the teacher's contentment which thus indicates that the other factors are still to get unveiled impacting teacher's satisfaction in general.

Success of the firm is highly motivated by the effective implementation of HR practices (Stavrou, 2005). The concept proposed by Locke in 1976 was used by Haque and Taher, (2000) they proposed that work satisfaction is an optimistic emotional feeling which can be attained from a comprehensive interpretation of the person's work. The major determinants of job satisfaction includes worker's necessities and wants, social affiliations, management practices, job structure and design, reimbursement, long term chances (Moorhead and Griffin, 2001).

Huselid, Jackson and Schular (1995) proposed in their studies that high-progressive work practices yields to lower turnover rate. Turnover is generally regarded as the number of employees leaving the job. HRM practices and policies also increase appraisements, for instance provision of financial incentives and opportunities of formal trainings enhances organizational output (Brown & Hewood, 2005). Mobley (1978) suggested that the intentions can fluctuate from the influence of an affiliation between job satisfaction and turnover. Majority of investigators accepts the fact that turnover intent is the last step of intentional turnover Mahmud and Idrish (2011).

3. Hypothesis

On the bases of the above literature the following hypothesis are developed for investigation.

H₁: There will be a compelling association between employee participation and turnover.

H₂: There will be a compelling association between training and turnover.

H₃: There will be a significant association between Performance appraisal system and turnover.

H₄: There will be a compelling relationship between employee participation and job satisfaction.

H₅: There will be a significant relationship between training and job satisfaction.

H₆: There will be a compelling relationship between performance appraisal system and job satisfaction.

4. Research Methodology

Sample and Data Collection

The research is based on taking into account all major sector universities operating in the province of KP. Hence all universities are taken as the universe of study. There were 6 participant universities namely Sarhad University, Iqra National University (INU), Peshawar University, Malakand University, Kohat University and Bannu University. These universities were selected to constitute a relatively representative sample of cities where there were increased incidences of terrorism and unrest in the recent past. The sample consisted of 125 teachers of the above mentioned reputable institutions. This sample size was achieved with the help of physically administered survey in each participating university. The process of data collection was performed with the support of colleagues in sister universities.

Statistical Model and Conceptual Framework

The representation is on the basis of ratios and percentages because the variables used were of subjective nature. The statistical package for Social Sciences (SPSS) has been used for

interpretation of the collected data. For establishment of relativity in between defined variables which include employee participation, performance appraisal system, job satisfaction, training and turnover, the statistical techniques of correlation and regression are used. Regression analysis incorporates methods for modelling and analysing different dependent and independent variables. It can mathematically be expressed as

$$Y=B_0 + B_1X +.....+e$$

The equation showing relationship between job satisfaction, employee participation, training and performance appraisal.

$$\text{Job satisfaction}= B_0 +B_1(\text{EP}) +B_2(\text{T}) + B_3(\text{PA})+.....e$$

Where,

EP represents Employee Participation

T represents training

PA represents Performance Appraisal

E represents the error term

And B_1 , B_2 and B_3 represents the coefficients of regression.

The equation defining the relationship between turnover, employee participation, training and performance appraisal.

$$\text{Turnover}= B_0 +B_1(\text{EP}) +B_2(\text{T}) + B_3(\text{PA})+.....e$$

EP represents employee participation

T represents training

PA represents performance appraisal

E represents the error term

And B_1 , B_2 and B_3 represents the coefficients of regression

5. Conceptual Framework

Based on the literature, our research framework is shown in figure 1. The model depicts the relationship between HRM practices, turnover and job satisfaction. The HRM practices acts as an independent variable (IDV) whereas turnover and job satisfaction reflects dependency on HRM practices. Hence they are dependent variables (DV).

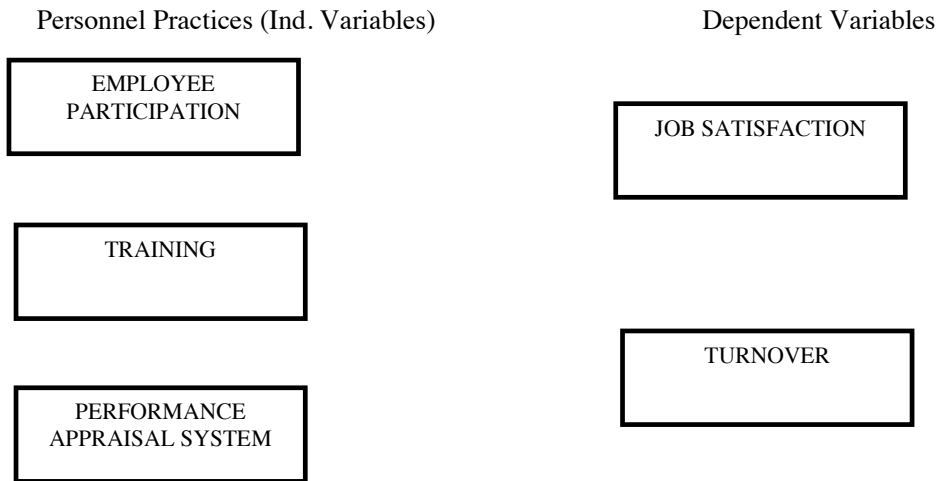


Figure 1 Association of HRM Practices, Job Satisfaction and Turnover

The variables that are considered in this research include HRM practices (performance appraisal system, training and employee participation), job satisfaction and turnover.

Constructs and Measures

All of related constructs along with their measuring techniques are discussed below:

HR practices:

The HRM practices reflect a positive relationship between organizational innovation, product innovation, process innovation and administrative innovation. HRM practices were measured using 5-items Likert scale ranging from 1 to 5 and representing two extreme ends of ‘strongly agree’ and ‘strongly disagree’ respectively.

Job satisfaction:

Job satisfaction is an integral part of HR practices as it influences and motivates employee to contribute to the fullest in the productivity and effectiveness of an organization. Job satisfaction was measured on 6-item scale formulated by Agho, Price and Mueller (1992). Each individual component was measured on 5-item Likert scale ranging from 1 (Strongly agree) to 5 (Strongly disagree).

Employee turnover:

The term refers to the ratio of workers left and replaced by the new workers. This construct has been measured by a 3-items scale invented by Vigoda in 1990. The scale ranging from 1 (Strongly disagree) to 5 (Strongly agree) has been used.

6. Analysis and Results

Correlation analysis between HRM practices, job satisfaction and turnover

Table 1 Pearson Correlation with Respect to Age, Designation, Job Experience and Income

	Gender.	Age.	Design.	Experience.	Income.
Gender.	1.				
Age.	0.05	1			
Design.	0.04	0.495	1.		
Experience.	0.00	0.667	0.443	1.	
Income.	0.05	0.557	0.548	0.396**	1.

Table 2 Pearson Correlation with Respect to Dependent and Independent Variables

	Employee Contribution	Training & Induction	Performance Appraisal System	Work Satisfaction	Employee Turnover
Employee Contribution	1				
Training & Induction	0.496**	1			
Per. app system	0.604**	0.601**	1		
Work satisfaction	0.713**	0.554**	0.679**	1	
Emp. turnover	-0.422**	-0.218*	-0.412**	-0.526**	1

* Significance at 0.05 level (two-tailed)

**Significance at 0.01 level (two-tailed)

Pearson Coefficient is a statistical tool for measuring the linear correlation between two variables X and Y , giving a value between +1 and -1 inclusive, where 1 is total positive correlation, 0 is no correlation, and -1 is total negative correlation. Table 1 and 2 demonstrates the Pearson Correlation Coefficient for the researched variables and is utilized to compare the mean in accordance with the designated demographic variables and all the other key factors with the confidence interval of ($p < 0.01$). The assumptions made about the variables correlation were stand significant having value less than 0.01 except one counted as -0.218*. The negative sign is an indication of diminished turnover if the worker is provided with significant appraisal system, is cooperative, well equipped with his skills and is happy with the working environment. In the research paper the stark on the figure symbolizes the significance of correlation w.r.t the achieved confidence interval which in our case is ($P < 0.05$).

Inspecting reliability

o understanding the reliability factor of this investigation, we performed reliability analysis technique using SPSS. Table 3 presents the results of each dependent/independent variable.

Table 3 Results of Reliability Analysis of Variables

Variable	Cronbach's alpha	Remarks
Worker's Contribution	0.794	Reliable
Training & Induction	0.839	Reliable
Performance Appraisal System	0.822	Reliable
Work Satisfaction	0.811	Reliable
Turnover	0.854	Reliable

The interpretation considers five distinguished variables including Employee contribution, Training& Induction, Performance appraisal criteria, Work satisfaction and employee's turnover in accordance to a cut-off value of Cronbach's alpha of 0.7 as suggested by Week (2000), and Cronbach (1951).

From above depicted table it is quite clear that employee participation is interpreted as the least reliable variable by possessing the Cronbach's alpha of 0.794. Whereas all the other consecutive variable including training, performance appraisal system, job satisfaction and employee turnover possess reliability in the order of 0.839, 0.822, 0.811 and 0.854 respectively. The positive part is all of these variables qualify in the range of Cronbach's alpha which makes the authenticity of data quite reliable and assures provision of exhibitivite and helpful framework for the issue under consideration.

Distributing respondents with respect to employee contribution, training, performance appraisal, job satisfaction and turnover

The respondents are distributed with respect to the factors including employee contribution, training, performance appraisal system, job contentment/satisfaction and turnover.

All of them are studied individually along with the tabular analysis to get a clearer picture.

Table 4 Distribution of Respondents with Respect to Employee Contribution

S.No	Item	Employee Perception					MAS
		1.	2.	3.	4.	5.	
1	You are a good contributor in your institution's affairs	6. (4.9)	5. (4.1)	17. (13.7)	66. (52.9)	31. (24.9)	3.8881
2	You are zealous regarding employment at your present institution.	1 (0.8)	10 (8.0)	28 (22.4)	62 (49.6)	24 (19.2)	3.7840
3	You show concern in making decisions/policies at your institution.	26 (20.8)	49 (39.2)	18 (14.4)	25 (20.0)	7 (5.6)	2.5040
4	Your institution provides you an opportunity to contribute in the formulation of academic policy.	30 (24.0)	34 (27.2)	17 (13.6)	38 (30.4)	6 (4.8)	2.6480

5	Your University gives you an opportunity to practice leadership skills.	27 (21.6)	35 (28.0)	29 (23.2)	23 (18.4)	11 (8.8)	2.6480
6	Your university work place supports team oriented working practices.	11 (8.8)	18 (14.4)	25 (20.0)	56 (44.8)	15 (12.0)	3.3680
7	Your institution welcomes creative feedback and suggestions of instructors.	27 (21.6)	34 (27.2)	24 (19.2)	31 (24.8)	9 (7.2)	2.6880
Aggregate Mean							3.0755

1 = strongly Disagree, 2 = Disagree, 3 = neutral, 4 = Agree, 5 = strongly Agree; MAS = mean average score

It is apparent from above findings that majority of the respondents lie in the 4th part of the Likert Scale. The result directs that the respondents from the universities of KP are in favour of employee contribution. The perception reflects a positive behaviour of employees which can finally be seen in the self-fulfilment and turnover.

On the other hand a substantial number of respondents with neutral perception can also be seen along with some having negative perceptions. The evaluation of items 2, 6 and 1 reflects the approval of the relevant perception as the MAS for that particular category is greater than 3. However items 3, 4, 5, and 7 with MAS<3 reflects a negative perception indicating a disagreement of employees about positive employee's participation perception. The greatest MAS (3.8881) have been observed for the respondent's perception with their contribution towards their job which will result in greater satisfaction and diminished employee turnover.

Category 2 on the other hand depicts MAS (3.7840) which enlightens the zeal of employees towards their workplace resulting in greater satisfaction and fewer intentions to leave the job. Followed by the category 6 with MAS (3.3680) which demonstrates the agreeableness of respondents towards their work and working environment in general. MAS (2.6880), MAS (2.5040), MAS (2.6480) highlights the idea of innovative feedback acceptance, involvement in strategic decision making, chance to show leadership qualities and involvement in general policy formulation. All of them are more or less responsible for noticeable employee satisfaction and turnover. Items 7, 3, 4 and 5 however represents negative recording of perception.

The general MAS picture though represents a positive feedback given by respondents in accordance with their participation, satisfaction and turnover. In addition, generally it is observed that greater empowerment, and involvement usually acts as motivational factors. A person will show greater enthusiasm towards work or will act more participative if he will get a chance to think good / bad for the organizations and a free hand to make decisions accordingly.

1. With respect to training:

Training plays a crucial part in employee's growth and satisfaction as it opens uncountable doors of success and polish work with unmatched skills. Table 5 illustrates the distribution criteria w.r.t training.

Table 5 Distribution of Respondents with Respect to Training

S.NO	Item	Employee Perception					MAS
		1.	2.	3.	4.	5.	
1	You can avail before-service assistance at your University	43 (34.4)	41 (32.8)	18 (14.4)	17 (13.6)	6 (4.8)	2.2160
2	Lecturers can benefit from innovative training at your University	38 (30.4)	46 (36.8)	16 (12.8)	16 (12.8)	9 (7.2)	2.2960
3	Fresh Lecturers can benefit from on-job training at your University	26 (20.8)	39 (31.2)	19 (15.2)	25 (20.0)	16 (12.8)	2.7280
4	Your University gives Inter-personal improvement assistance for instructors.	36 (28.8)	52 (41.6)	16 (12.8)	19 (15.2)	2 (1.6)	2.1920
5	Your University provides imperative guidance to the Instructors.	41 (32.8)	50 (40.0)	12 (9.6)	19 (15.2)	3 (2.4)	2.1440
	Aggregate Mean						2.3152

1 = strongly Disagree, 2 = Disagree, 3 = neutral, 4 = Agree, 5 = strongly Agree; MAS = mean average score

The findings inferred in table 5 indicates the perception of respondents w.r.t Training. It is quite apparent from the above tabular analysis that most of the asked queries regarding Training lie in the second category of Likert Scale. The conclusions depicts that the teachers from the selected Universities are against the process of giving training by their relevant organizations. This negative perception will ultimately affect employees overall satisfaction and turnover. In the same way, there are employees with positive perception towards the concept too while teachers with neutral perception may also be seen. If we analyze in detail, it is obvious from the above analysis that item 4 having maximum %age of 41.6% lies within second category of Likert scale representing majority of teachers taking up the inter-personal guidance at their relevant universities. Item 5 again with 40% reveals the absence of strategic training at their working place. On the other hand items 2, 3 and 4 indicates negative perception regarding pre-service, innovative and on job training. The aggregate MAS reflect negativity in perception regarding training and guidance manuals of the educational institutions. The negative perception thus reflects disappointment in teacher's behavior with regard to the provision of training methodologies by their relevant work places. In short the lack of training opportunities will raise the feeling of discouragement and de motivation amongst employees. They will see no ways via which they can enhance their current skills. The final impact can be seen in their job satisfaction feedback which for sure will reflect this lacking and increased employee turnover.

2. With respect to performance appraisal system

It is associated with human nature that he/she must be influenced by the encouragement and compensation they receive in return of services they offer. The perceptions may differ though. Some prefer monetary appraisals while some shows more attraction if provided with non-monetary benefits including promotions and more working empowerment.

From Table 6, the negative perception regarding appraisals can be seen. The feedback from the second category of Likert Scale apparently reveals that the average number of universities operating in KP is not efficient enough with their employee compensation plans. The impact

definitely can be observed by the job satisfaction and employee's turnover criterion. Item number 4 though indicates an exception with percentage yield of 36.0 and shows positive perception as it is within the fourth category of Likert Scale. The maximum percentage is the proof that evaluation is thoroughly done in all the institutes of KPS. Surprisingly the second highest figure 32.8 with items 2 and 5 indicates negative perception and lies in the second category of Likert Scale. This percentage asserts the investigated institutions seem productive in their response and appraisals given to the lecturers on the basis of their output. The inquired percentages 32.0 and 30.5 are in particular for items 1 and 3 which again assert lacking in reward and promotion systems. Hence the aggregate MAS relative to the figure 2.7964 confirm the absence of proactive appraisal systems based on merit and concrete performance, which in return will influence the employee satisfaction and turnover. Concluding, in order to attain reduction in turnover and to enhance teacher's output it is mandatory to remunerate them according to their skills and performance.

Table 6 Distribution of Respondents with Respect to Performance Appraisal

S.NO	Item	Employee Perception					MAS
		1.	2.	3.	4.	5.	
1	Your university provides planned returns to you.	27 (21.6)	40 (32.0)	25 (20.0)	28 (22.4)	5 (4.0)	2.5520
2	The management uplifts you on achieving the set targets and rewards you accordingly.	21 (16.8)	41 (32.8)	28 (22.4)	31 (24.8)	4 (3.2)	2.6460
3	Promotions are given on pure merit.	20 (16.0)	38 (30.4)	30 (24.0)	30 (24.0)	7 (5.6)	2.7280
4	Performance evaluation is the regular part of the process.	9 (7.2)	17 (13.6)	33 (26.4)	45 (36.0)	21 (16.8)	3.4160
5	Lecturers are given appraisals according to their output.	27 (21.6)	41 (32.8)	21 (16.8)	22 (17.6)	14 (11.2)	2.6400
Aggregate Mean							2.7964

1 = strongly Disagree, 2 = Disagree, 3 = neutral, 4 = Agree, 5 = strongly Agree; MAS = mean average score

3. With respect to job satisfaction:

Job satisfaction plays a crucial role in employee's satisfaction, productivity and employees turnover. A worker satisfied with his/her working conditions, satisfied with the received financial/non-financial appraisals and the overall response of an organization towards his/her work will definitely impact strong on the outcome of an organization.

Table 7 Distribution of Respondents with Respect to Job Satisfaction

N o	Item	Employee Perception					MAS
		1.	2.	3.	4.	5.	
1	You are contented with your work at your workplace.	6 (4.8)	20 (16. 0)	22 (17. 6)	58 (46. 4)	19 (15. 2)	3.512 0
2	You are contented with your Management.	14 (11. 2)	35 (28. 0)	25 (20. 0)	40 (32. 0)	11 (8.8) 2)	2.992 0
3	You are contented with your affiliation with your subordinates at your workplace.	4 (3.2)	6 (4.8)	12 (9.6)	69 (55. 2)	34 (27. 2)	3.984 0
4	You are contented with your remuneration at University.	21 (16. 8)	34 (27. 2)	26 (20. 8)	34 (27. 2)	10 (8.0) 6	2.824 0
5	You are contented with the available career development opportunities at your workplace.	20 (16. 0)	48 (38. 4)	17 (13. 6)	34 (27. 2)	6 (4.8) 12	2.664 0
6	All-inclusive there is contentment on your part at University.	15 (12. 0)	24 (19. 2)	28 (22. 4)	46 (36. 8)	12 (9.6) 8)	3.128 0
Aggregate Mean							3.184 0

1 = strongly Disagree, 2 = Disagree, 3 = neutral, 4 = Agree, 5 = strongly Agree; MAS = mean average score

Table 7 demonstrates the affirmative feedback of respondents in accordance of their job contentment. The maximum percentage which is 55.2% is observed for third number item which is visible in Likert scale's fourth category, this elaborates that the relational aspect of an employee towards other subordinates is satisfactory. 46.4 is the second highest percentage observed which is for number 1 item, visible in the Likert scale's fourth category that indicates that majority of respondents are actually contented with their organization.

The aggregate MAS depicts the positive feedback of workers which shows that they are happy with their working environment and the reimbursements they receive in return. Other relevant queries including interpersonal relations, overall contentment and work opportunities also reflected the efficiency of management towards their goals. Hence, if dealt with consistency and wisdom, the motive of increased satisfaction and reduced turnover can be successfully attained.

4. With respect of turnover:

Turnover also plays an important role in organization's overall success and productivity. A firm showing rising trend towards turnover reflects inefficient HR practices. Table 8 demonstrates the concept with respect of the study taken into account.

Table 8 Distribution of Respondents with Respect to Turnover

S.NO	Item	Employee Perception					MAS
		1.	2.	3.	4.	5.	
1.	You often consider leaving current job.	8. (6.5)	31. (24.9)	31. (24.9)	32. (25.7)	23. (18.5)	3.2481
2.	Next year you will join some other place to work.	9 (7.2)	19 (15.2)	26 (20.8)	45 (36.0)	26 (20.8)	3.4800
3.	Recently, you are interested in various job offers in newspapers.	11 (8.8)	20 (16.0)	20 (16.0)	39 (31.2)	35 (28.0)	3.5360
	Aggregate Mean						3.4214

1 = strongly Disagree, 2 = Disagree, 3 = neutral, 4 = Agree, 5 = strongly Agree; MAS = mean average score

Table 8 again demonstrates the positive feedback of respondents with respect to the turnover. The maximum percentage can be seen for item number 2 which is 36.0% and visible in Likert scale's fourth category, indicates that workers are looking for new opportunities around them. The second highest percentage seen so far is 31.2% representing item number 3 and lies in the fourth category of Likert scale indicating that workers are referring to the newspapers to search the new opportunities. 25.6% represents item number 1 and can be seen in the fourth category of Likert scale indicating the increased willingness of employees to change their workplace. In general the analysis depicts the positive perception and intention of employees to leave/ change their current jobs with MAS of 3.1243.

The aggregate MAS of turnover though illustrated the positive feedback, but the negativity in responses indicates that instructors would love to change their jobs if get a chance. The organizations thus need to revise their hR policies which are influencing their employees to get motivated towards other more attractive offerings. In short if universities make sure to take an initiative of improvement and tries to retain their teachers with more rewards/ promotions, empowerment, there would be fewer chances that instructors will change their workplace for material/immaterial benefits.

4. Overall MASS of variables:

Table 9 demonstrated the aggregate MAS of HR practices including employee participation, training and induction and appraisal system along with employee turnover and job satisfaction. As mentioned above, some of the asked queries were replied negatively.

MAS reflecting these queries thus represents the 'strongly agree' or 'strongly disagree' approaches of employees. The overall MAS as can be seen are slightly below 3. The overall perception of respondents was quite satisfactory except for two variables- Performance appraisal systems and training and induction.

Table 9 MAS of Variables

Attributes.	Mean Average Score (MAS)
Worker's contribution.	3.0754
Training & Induction.	2.3153
Performance appraisal system.	2.7965
Work contentment.	3.1841
Turnover.	3.4214

Regression analysis

The software of regression analysis SPSS v. 20 was used for assessment of causal regression between dependent and independent variables. In particular, the influences of HR practices such as employee contribution, job contentment and turnover were thoroughly analyzed. It is perceptible as data investigated was largely cross sectional in nature therefore the value of coefficient is anticipated to come low. Due to this reason the basic dependency is on f-value, p-value and t- ratio.

Regression results for Employee contribution, job satisfaction and turnover

Table 10 demonstrates the regression analysis in association with employee contribution, work satisfaction and employee turnover. This is apparent from the tabular analysis that there is positive affiliation amongst employee contribution and job satisfaction of the non-government institutions in KP. The evaluation of t-ratio is greater than 2 ($T > 2$), p-value is significant with $P < 0.05$ and the overall significance obtained is 126.125 which is larger > 3 .

Table 10 Regression Analysis between Employee Contribution, Job Satisfaction and Turnover

Independent variable	Dependent Variables						
	(Job Satisfaction)			(Turnover)			
	B.	T.	P value	B.	T.	P value	
Employee contribution		.713	11.232	.0000	-.422	-5.142	.0000
Job satisfaction R square= .507, F= 126.126							
Turnover R square= .178, F= 26.429							

Table 10 shows that adequate lead is given to employee contribution which influences the job satisfaction reflecting positivity and hence significant. In all-inclusive percentage, the value obtained for R square for employee contribution is .5071 which reflects that half of the employees' contentment is due to the workers participation and the remaining is caused by other factors. This evaluation clearly illustrates that the employee participation is a key contributor in enhancement of workers satisfaction. Contribution of workers increases workers motivation and faithfulness, which ultimately influences organization to achieve its goals successfully (khan et al., 2012). In similar vein, Scott, Bishop and Chen (2003) also assert that work satisfaction plays the role of intermediary between the ingredients of contributory and conducive working environment and worker's initiative to work professionally with other colleagues.

On the other hand employee contribution showed an inverse relation with job turnover. The obtained T-ratio is larger than 2 ($T < 2$) but negative, while p-value also reveals significance with $P < 0.05$ and the overall significance stands to be 26.429 which is > 3 . These calculations provide sufficient evidence regarding employee contribution that has significant negative causation toward turnover. The R square is observed as .178 which indicates that worker's contribution and turnover

are not affiliated directly with each other, which means if workers are empowered to contribute in university affair they will be more satisfied and would least look at other options. Employee's contribution is reflecting 17% change in turnover which reinforce the above explanation. In short lesser employee participation will influence the turnover to get increase drastically.

Regression results for Training, Job satisfaction and Turnover

Table 11 Regression Analysis between Training, Job Satisfaction and Turnover

Independent Variable	(Job Satisfaction)			Dependent variable (Turnover)		
	B.	T.	P-value.	B.	T.	P-value.
Training & Career dev.	.553	7.352	.000	-.219	-2.484	.014

Job satisfaction R square= .305, F= 54.045

Turnover R square= .048, F= 6.168

Table 11 assesses regression analysis in the light of training and development, job satisfaction and turnover. The analysis demonstrates a significant positive affiliation between training and induction, work satisfaction. The interpretation of T-ratio is larger than 2 ($T > 2$), p-value reflects significance with $P < 0.05$ and the total attained significance comes out to be 54.045, which again is larger than 3. From the above analysis a sufficient base is allotted to training which impacts work satisfaction which in this case is positive come significant. The value for R-square obtained is 0.305 that reflects 30% contribution in Job satisfaction. This finding illustrates that if institutions give teachers more career development opportunities in the form of training, the result will reflect greater satisfaction among teachers. The affiliation between employee's satisfaction and training were discussed several times in previous researches too. Bradley, Petrescu and Simmons (2004) assert that training and induction has quite significant influences on overall HR practices. Their investigation also reveals that training enhances working abilities of an individual that ultimately affect the overall productivity of an organization.

Unlike job satisfaction, training illustrates an inverse relationship with turnover. The attained T-ratio value is larger than 2 ($T < 2$) but is negative, p - value reflects significance $P < 0.05$ and the total significance achieved is 6.168 which is larger than 3. From these calculations, the sufficient base is given to training directing turnover that is significantly negative. The R- square for turnover is 0.48 that indicates a very less training impact on turnover which in this case is less than 1%. The inferences drawn thus depict that if provided with progressive career development options and trainings, employees will intent less to leave their current jobs. Batt and Valcour (2003) investigated that high-participative practices including collaboration, anatomy and training and inductions refer to less turnover and increased output.

Regression results for Performance Appraisal, Job satisfaction and Turnover

Table 12 Regression Analysis between Performance Appraisal, Job Satisfaction and Employee Turnover

Independent Variable	Dependent variables					
	(job satisfaction)			(employee turnover)		
	B	T	P value	B	T	P value
PAS	.679	10.243	.0000	-.412	-4.998	.0000
Job satisfaction R square= .461, F= 104.904						
Employee turnover R square= .168, F= 24.995						

Table 12 depicts regression results for the independent variable, performance appraisal and two dependent variables i.e. job satisfaction and employee turnover. The table illustrates a positive and significant affiliation between job satisfaction and performance appraisals which he receives in return. The value of T-ratio obtained is larger than 2 ($T > 2$). P value shows significance $P < 0.05$. Total significance seen so far is 104.904 ($F > 3$). The R square value is 0.460 which reflects that performance appraisal brings about 46% change in overall job satisfaction mechanism. This high yield of percentage depicts that if workers are provided with a rigorous appraisal system, they will be expected to display greater motivation and satisfaction levels. This finding is in line with contemporary research where for instance, Karimi et al. (2011) examined affiliation of worker's performance appraisal with satisfaction of employees and found a positive affiliation between the two.

When analysed with the second dependent variable, Performance appraisal depicted an inverse affiliation with turnover, however. The T - ratio value is larger than 2 ($T > 2$) but negative. P-value shows a significance $P < 0.05$ and the total significance obtained is 24.995 ($F > 3$). From the above interpreted calculations, sufficient base is allocated to performance appraisal directing employee turnover that is negative and significant. The calculated r- square is 0.168 which shows that there is around 17% change brought about by appraisal system in employee's turnover. This result infers that a stronger appraisal system will tend to lower the turnover rates among University employees. It should be noted here that these findings are based on presumption of fair, nepotism-free appraisal system which is expected to enhance employee's productivity and overall satisfaction.

7. Implications and Conclusion

In line with previous research on job satisfaction, this research too finds existence of significant relationship between employees' job satisfaction and employee turnover with that of several HRM practices. Nevertheless, this relationship is found in a unique context of KP where a number of factors such as terrorism, disasters, and deadly diseases have worsened security conditions thus exacerbating the employee satisfaction among universities. The results revealed that an average of 70% increase in job satisfaction and turnover is brought about by selected HR strategies like employee contribution, skill refinement, and performance appraisal system. This on the other hand confirmed the dependability of the data collection. The conclusion drawn after the statistical analysis of the facts and figures is that there is an affirmative strong relation between HR strategies and contentment of employees yet an adverse effect of HR strategies was found over the financial yield of professors of private and public sector universities of Peshawar and neighbouring cities.

The results obtained reveal that the professors of Universities of KP are passionate and enthusiastic to contribute in the university at their level best. Contrary to that, universities failed to provide proper skills refinement, opportunities and performance appraisal system to the teaching community. This kind of misconduct from the university side is bearing a negative impact on contentment of their employees and consequently, they are being pushed towards other job opportunities. In order to get the maximum output from their human resources, universities must apply specific HR strategies adequately and competently. It is also concluded from the figures that to make your employees contented and devoted towards the organization, performance appraisal and HR strategies (employee contribution and employee training) must be applied efficiently and effectively.

The current research therefore bears widespread implications for HR strategies and policies in a special context of higher educational institutions. First, the KP universities should make best possible use of HRM strategies and policies in order to derive maximum performance and retain employee turnover. Second, the stakeholders should focus on enhancing job satisfaction and reducing turnover to combat the negative perceptions in prevailing situations of terrorism and chaos in KP. It has been observed that faculty members in KP and Pakistan in general try to settle in any possible foreign universities in middle-east, Europe and North-America in an escape from terrorism and decreased peace and security in the region. The findings of this research offer a viable strategy, amongst many other effective ones to overcome the problem of brain-drain from important academic positions in the city. Third, the theoretical association of HR practices and job outcomes has shown diverging results to those of prior research. Moreover, this study has had several limitations too which are to be overcome by future researchers. For instance, the sample size need to be increased manifold so that wider generalizations can be offered. Finally, future research may also consider comparing the results across other cities of Pakistan and across international borders.

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The Readability of Note Disclosures

by

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Abstract

The purpose of financial reporting is to help users make informed decisions. Over time the reporting process has become more and more complex. Reporting standards and rules have increased both in terms of quantity and sophistication. Because of this, it is important to ask the question about the basic premise of financial reporting – is the information being reported by companies useful to its intended users?. This article examines the financial statement notes of the 30 companies that comprise the Dow Jones Industrial Average. Readability tests are performed on the financial statement notes for the years 2000, 2010 and 2015 to determine if the information being reported can be used by the average user and if the level of complexity has changed over time. The results revealed that the use of the passive voice in financial statement note disclosures have not changed over time. However, based on the Flesch Reading Ease score, the results revealed that over time the readability of disclosures notes has decreased. The declining trend in readability of financial statement note disclosures is a cause for concern because it is important the users of these statements are able to understand the information provided to them so they can make the best decisions.

Keywords: Accounting, Note Disclosures, Readability Test

1. Introduction

The American Accounting Association's Statement of Basic Accounting Theory describes the importance of communication in the reporting process and how vital it is that information being reported can be understood as part of the decision-making process (AAA, 1966). The Financial Accounting Standards Board's Statement of financial accounting concepts no. 1 states "Financial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions. The information should

be comprehensible to those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence” (FASB, 1978). These two basic guidelines are used as a starting point for this research to answer the question; is the information being reported by companies useful to its intended users? To be useful the users must be able to read and understand what is being reported. To determine if this is happening this research focuses specifically on financial statement note disclosures.

Financial statement note disclosures complement the financial statements providing additional information to users aiding them in the decision-making process. Each note is sequenced by a number. Financial statement notes are intended to provide clarity to the financial statements. Some give more specific detail on accounting policies, standards, and methods of accounting used. Some notes are required by the Securities and Exchange Commission (SEC). Some notes expand on a specific line item in the financial statements giving the user more information. The notes serve as a tool for users to examine additional information about a company instead of relying solely on the financial statements themselves.

The globalization of economies, the development of financial instruments to aid in risk management, and the increase in accounting scandals have resulted in an increase in financial statement note disclosures (Kieso et al., 2013). The increase in the amount of disclosures in terms of number of disclosures, length of disclosures, and complexity of disclosures, has brought their usefulness into question (Bloomfield, 2012; Lawrence, 2013; Morunga & Bradbury, 2012). There are also differing opinions on whether the increase in financial statement note disclosures is a result of the development and implementation of new accounting standards or a result of how preparers apply the standards (Barker et al., 2013). Regardless of the reason for the increase in note disclosures there remains a concern that the increase has made it difficult for the average user to interpret and make informed decisions from reading the notes. To assess this ability of financial statement users this article looks at the readability of the notes.

This article examines the financial statement notes of the 30 companies that comprise the Dow Jones Industrial Average. Readability tests are performed on the financial statement notes for the years 2000, 2010 and 2015 to determine if the information being reported can be used by the average user and if the level of complexity has changed over time. The readability tests used for analysis are the number of passive sentences, Flesch Reading Ease readability test, and Flesch-Kincaid readability test. If the readability levels are at the level of people “who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence” then there is no problem. If the readability levels have not changed significantly over time then there is no problem. However, if this is not the case then recommendations should be made to assist the intended user.

2. Research Methodology

The companies selected for this analysis were the 30 companies that comprised the Dow Jones Industrial Average (DJIA) in 2015. These companies were selected because they represent leading companies in a wide variety of industries and are representative of the stock market. In addition, most of the companies that comprise the DJIA have been around for many years, resulting in the availability of time series data.

After the companies were selected annual reports were obtained for these companies for the years 2015, 2010, and 2000. The annual reports were obtained from the SEC’s Edgar Database. The

SEC database only has annual reports dating back to the mid-1990s. Efforts were also made to obtain annual reports from 1990 and 1980 from ProQuest's Historical Annual Reports Database and from contacting the companies directly. Only a select few had annual reports available and most of those were not able to be converted to a Word document.

Once the annual reports were obtained and converted into Word documents if necessary, the researchers examined the readability of financial statement notes from each annual report using three measures – passive sentences, Flesch Reading Ease, and Flesch-Kincaid:

Passive Sentences (PS)

Passive sentences are not as clear and concise as active sentences. In a passive sentence the subject of the sentence does not perform the action identified by the verb. Therefore, writers should use passive sentences sparingly.

Flesch Reading Ease (FSE)

Rates text on a 100-point scale; the higher the score, the easier it is to understand the document. For most standard documents, aim for a score of approximately 60 to 70. The formula for the Flesch Reading Ease score is:

$$206.835 - (1.015 \times \text{ASL}) - (84.6 \times \text{ASW})$$

where:

ASL = average sentence length (the number of words divided by the number of sentences)

ASW = average number of syllables per word (the number of syllables divided by the number of words)

Retrieved April 4, 2017 from the Word Help Screen.

Flesch-Kincaid (F-KGL)

Measures the education level needed by readers as a necessary requirement to understand the document. This test rates text on a U.S. school grade level. For example, a score of 8.0 means that an eighth grader can understand the document. For most documents, aim for a score of approximately 7.0 to 8.0.

The formula for the Flesch-Kincaid Grade Level score is:

$$(.39 \times \text{ASL}) + (11.8 \times \text{ASW}) - 15.59$$

Where:

ASL = average sentence length (the number of words divided by the number of sentences)

ASW = average number of syllables per word (the number of syllables divided by the number of words)

Retrieved April 4, 2017 from the Word Help Screen.

Limitations of Readability Tests

These three readability tests are not flawless. There is no specific score that represents “those who have a reasonable understanding of business and economic activities”. There are no variables that take into account industry specific jargon or terminology. The limitations of their use are highlighted in the passage below:

“Existing readability indices have similar problems with interpreting the discourse used in most financial disclosures. For example, consider the words “management, “division,” and “company.” In some popular readability indices, these multi-syllable words would be considered “complex” and would increase the readability scores of the textual sample. However, most investors (either sophisticated investors or non-sophisticated investors) would likely correctly interpret the meaning of these words in almost any financial disclosure. Thus, in the context of financial disclosures, most preexisting readability indices also have flaws that could impede accounting and finance research” (Collins, 2012).

However, even with these limitations, the aforementioned readability tests are believed to be the most commonly used and accepted readability tests that can yield the most consistent and reliable information.

3. Research Questions

The business and regulatory environment has grown more complex during the time period examined in this study. Consider just the advent of Sarbanes Oxley and its ensuing increased regulation. After Sarbanes Oxley, publicly-traded companies, most certainly including the firms in the Dow Jones Industrial list, must provide more evidence of meeting SOX regulations. These regulations generally took effect after 2002. Therefore, we would expect that there is the distinct possibility that 10-K reports increased in disclosure complexity during the years following the passage of Sarbanes Oxley. For the purposes of this study, this means that we can expect significant differences between the complexity of financial statements between 2000 and 2010.

The use of passive sentences increases the difficulty of understanding financial statements. While it would be beneficial for companies to make more use of active voice, there is reason to believe that the use of passive voice has changed. In fact, the use of increased regulatory requirements may well result in an increase in the use of passive voice in 10-Ks.

H1: The use of passive voice will increase over the years 2000, 2010, and 2015.

Increased regulatory requirements, like Sarbanes Oxley, in the wake of significant financial and audit failures (think Enron, Global Crossings, HealthSouth) resulted in publicly-traded companies providing more information in their 10-Ks. This increased disclosure was significant and a subject of much ridicule by laissez-fair politicians. A move to reduce these regulatory burdens may decrease 10-K reporting complexity in coming years, but during the years from 2000 to 2015 regulatory burden increased. These increased regulatory requirements may lead to increased difficulty in readability and understanding.

H2: The Flesch Reading Ease score declined from 2000 to 2015.

H3: The Flesch-Kincaid Grade Level measure increased from 2000 to 2015.

4. Results Analysis

Table 1 30 Dow Jones Industrial Average Companies for 2015 with Data from 2000, 2010, and 2015

COMPANY	2000			2010			2015		
	<i>PS</i>	<i>FRE</i>	<i>F-KGL</i>	<i>PS</i>	<i>FRE</i>	<i>F-KGL</i>	<i>PS</i>	<i>FRE</i>	<i>F-KGL</i>
American Express Co	0.3 0	17.1 0	15.70	0.3 4	16.5 0	17.10	0.3 3	15.1 0	17.60
Apple Inc	0.2 8	18.8 0	15.60	0.3 1	14.5 0	17.90	0.3 4	14.9 0	17.90
Boeing Co	0.3 6	15.7 0	16.80	0.3 0	16.2 0	17.60	0.3 3	18.7 0	16.60
Caterpillar Inc	0.2 9	21.5 0	14.90	0.3 1	16.6 0	16.90	0.3 1	16.8 0	16.40
Cisco Systems Inc	0.3 2	21.1 0	15.00	0.3 3	15.3 0	17.6 0	0.2 9	15.0 0	17.80
Chevron Corp	0.1 9	22.4 0	15.20	0.3 0	15.9 0	16.60	0.2 9	15.2 0	17.00
DuPont	0.3 6	18.6 0	15.70	0.2 9	18.4 0	15.70	0.2 9	14.1 0	17.20
Exxon Mobil Corp	0.3 4	17.0 0	15.80	0.3 5	18.8 0	15.80	0.3 0	19.3 0	15.60
General Electric Co	0.3 4	16.8 0	15.50	0.3 4	16.9 0	15.80	0.2 7	14.9 0	16.90
Goldman Sachs Group Inc	0.3 1	17.6 0	16.40	0.2 1	18.3 0	16.70	0.3 0	15.5 0	17.10
Home Depot Inc	0.3 2	19.7 0	16.00	0.3 2	15.2 0	17.70	0.3 4	14.4 0	18.00
IBM	0.2 9	15.4 0	16.50	0.3 4	16.1 0	16.80	0.2 9	15.8 0	17.20
Intel Corp	0.3 2	15.4 0	16.40	0.2 0	18.8 0	16.70	0.2 3	17.3 0	17.00
Johnson & Johnson	0.1 9	9.50	15.80	0.3 3	20.4 0	15.80	0.2 9	16.9 0	16.80
Coca-Cola Co	0.3 0	13.4 0	16.80	0.2 5	18.3 0	16.20	0.2 5	17.9 0	16.60
JPMorgan Chase and Co	0.3 5	19.9 0	15.90	0.3 1	19.0 0	16.70	0.3 1	19.3 0	16.70
McDonald's Corp	0.3 3	18.0 0	16.10	0.3 7	12.6 0	17.00	0.3 2	14.6 0	16.60
3M Co	0.3 6	7.90	17.50	0.2 8	13.9 0	17.70	0.2 8	13.5 0	18.00
Merck & Co Inc	0.2 2	20.2 0	15.80	0.3 0	15.3 0	17.60	0.3 1	14.6 0	17.50
Microsoft Corp	0.2 8	18.1 0	17.10	0.3 2	19.9 0	16.00	0.3 6	18.7 0	16.10
Nike Inc	0.2 8	17.8 0	14.90	0.2 6	14.2 0	17.40	0.2 8	15.9 0	17.40

Pfizer Inc	0.2 5	21.5 0	16.10	0.2 5	16.4 0	17.40	0.2 2	3.80	20.10
Procter & Gamble Co	0.3 0	18.1 0	15.40	0.3 6	19.6 0	16.00	0.3 6	18.9 0	16.20
Travelers Companies Inc	#	#	#	0.2 9	13.7 0	17.80	0.3 1	11.7 0	18.30
UnitedHealth Group Inc	0.1 0	21.5 0	14.20	0.3 1	16.5 0	17.10	0.3 0	13.4 0	17.40
United Technologies Corp	0.3 5	13.3 0	16.40	0.3 1	15.4 0	16.80	0.3 0	10.2 0	18.10
Verizon Comm. Inc	0.2 8	15.8 0	16.90	0.3 1	14.0 0	17.60	0.3 2	12.9 0	18.10
Visa Inc	*	*	*	0.2 7	18.9 0	16.40	0.2 8	18.2 0	16.60
Wal Mart Stores Inc	0.3 9	18.4 0	15.90	0.3 0	16.6 0	16.80	0.2 9	17.2 0	16.90
Walt Disney Co	0.3 0	14.7 0	17.20	0.2 8	14.6 0	17.30	0.3 0	15.9 0	17.00

* Visa became a public company in 2007.

Travelers was St. Paul Companies prior to 2005.

Table 1 above provides the raw data for the study. The table lists the 30 Dow Jones Industrial Average companies for 2015 with data from 2000, 2010, and 2015.

Table 2 Descriptive Data on the PS, FE, and F-KGL Measures for Each of the Years 2000, 2010, and 2015

	2000	2000	2000	2010	2010	2010	2015	2015	2015
	PS	FRE	FKGL	PS	FRE	FKGL	PS	FRE	FKGL
Mean	.30	17.98	15.99	.30	16.56	16.88	.30	15.68	17.16
Median	.30	17.95	15.95	.31	16.45	16.85	.30	15.35	17.05
Mode	.30	21.5	16.40	.31	16.50	17.6	.29	14.90	16.60
Range	.29	9.1	3.3	.17	7.8	2.2	.13	9.1	2.7
n	28	28	28	30	30	30	30	30	30

Table 2 provides descriptive data on the PS, FE, and F-KGL measures for each of the years 2000, 2010, and 2015. While the results of the t-tests will show (below) that there was no significant change in the percentage of passive sentences over the three years, the range of percentages of passive sentences tightened. In 2000 the percentage of passive sentences in corporate 10-Ks ranged from 10 to 39 percent. This range was 20 to 37 percent in 2010 and 23 to 36 percent in 2015. Thus, while the mean of passive sentence use remained at 30 percent over all three years, the range of the percentage reduced from 29 percent to 17 percent to 13 percent.

Table 3 T-Tests of Passive Sentence Readability Measures

	observations	tStat	Significance
PS 2000 – PS 2010	28	-.10099	.45999
PS 2000 – PS 2015	28	-.02694	.48932
PS 2010 – PS 2015	30	-.16898	.43349

Table 3 provides the results of t-tests of Passive Sentence readability measures, comparing each pair of years. According to the statistical results, there is no statistical difference in the frequency of passive sentences between years. This result was expected based on an initial review of the descriptive data for passive sentence structure. The frequency of passive sentences was 30, 30.1, and 30 percent for the years 2000, 2010, and 2015 respectively. Thus, the results reject H1.

Table 4 FLESCH Reading Ease Score

	observations	tStat	Significance
FRE 2000 – FRE 2010	28	2.38990	.01022
FRE 2000 – FRE 2015	28	3.71505	.00023
FRE 2010 – FRE 2015	30	2.68393	.00595

Table 4 provides the results of Flesch Reading Ease Score. Flesch Reading Ease provides a score from 0 to 100, with easier reading documents displaying higher scores. Ideally, FRE scores would increase over the years. This did not happen. Flesch Reading Ease scores decreased significantly over the three years studied, indicating a significant increase in reading difficulty. The mean FRE scores for 2000, 2010, and 2015 were 17.98, 16.56, and 15.68. The decrease in scores was significant ($p < .01$) for each comparison and consistent over the years studied.

Extremely values in the disclosure notes are not unusual. Below is a paragraph taken from one of the company's financial statement note disclosures section of the financial report. The Flesch Reading Ease Score was 4.1. While this is an extremely low score, it is not unusual as the note disclosure section in financial reports discusses technical accounting information for a company.

“In April 2014, the Financial Accounting Standards Board (FASB) issued revised guidance to reduce diversity in practice for reporting discontinued operations. Under the previous guidance, any component of an entity that was a reportable segment, an operating segment, a reporting unit, a subsidiary or an asset group was eligible for discontinued operations presentation. The revised guidance only allows disposals of components of an entity that represent a strategic shift (e.g., disposal of a major geographical area, a major line of business, a major equity method investment or other major parts of an entity) and that have a major effect on a reporting entity's operations and financial results to be reported as discontinued operations. The revised guidance also requires expanded disclosure in the financial statements for discontinued operations as well as for disposals of significant components of an entity that do not qualify for discontinued operations presentation. The updated guidance was effective for the quarter ending March 31, 2015. The adoption of this guidance did not have any effect on the Company's results of operations, financial position or liquidity.”

Table 5 FLESCH KINCAID Grade Level Measure

	observations	tStat	significance
FKGL 2000 – FKGL 2010	28	-4.62276	.00001
FKGL 2000 – FKGL 2015	28	-6.03314	.00001
FKGL 2010 – FKGL 2015	30	-2.87959	.00370

Table 5 provides the results of the Flesch Kincaid Grade Level measure. The F-KGL measure identifies the level of education needed to understand the document examined. Therefore, lower scores indicate easier reading. It would be desirable to see the F-KGL scores decrease over the years, indicating that documents are getting easier to read. The F-KGL scores actually increased significantly ($p < .01$) over the years studied. Initially, the grade level needed to understand financial statement notes was the completion of an undergraduate college degree (16 years of education). Ultimately, 2015 financial statement notes require the equivalent of some (a little over one year) of graduate study for proper understanding.

The Flesch Kincaid Grade Level measure for the paragraph below taken from one of the companies in the research is 25.4. Like the paragraph shown in the Flesch Reading Ease, this is not unusual as accountants are writing about technical accounting issues.

“In preparing the consolidated financial statements, we use certain estimates and assumptions that affect reported amounts and disclosures, including amounts recorded and disclosed in connection with acquisitions. These estimates and underlying assumptions can impact all elements of our financial statements. For example, in the consolidated statements of income, estimates are used when accounting for deductions from revenues (such as rebates, chargebacks, sales allowances and sales returns), determining the cost of inventory that is sold, allocating cost in the form of depreciation and amortization, and estimating restructuring charges and the impact of contingencies. On the consolidated balance sheets, estimates are used in determining the valuation and recoverability of assets, such as accounts receivable, investments, inventories, deferred tax assets, fixed assets and intangible assets (including acquired in-process research & development (IPR&D) assets), and estimates are used in determining the reported amounts of liabilities, such as taxes payable, benefit obligations, accruals for contingencies, rebates, chargebacks, sales allowances and sales returns, and restructuring reserves, all of which also impact the consolidated statements of income.”

5. Conclusion and Recommendation

The results support acceptance of H2 and H3, but not H1. The use of passive voice did not change over the years examined. Apparently, there is no reason to anticipate that increased regulation and the resulting increased regulatory disclosure will also result in the increased use of passive voice.

The data supported H2. The Flesch Reading Ease score decreased significantly over the years examined. The FRE score decreased from 17.98 to 16.56 to 15.68 over the years 2000, 2010, and 2015 respectively, representing decreased readability. Not only was the decrease in readability significant, but it was consistent over the three years.

The data supported H3. As with H2, the Flesch-Kincaid Grade Level score indicated reduced readability over the years studied. The score increased from 15.99 to 16.88 to 17.16 over the years 2000, 2010, and 2015 respectively. Again, as with the FRE, the decreased readability was significant and consistent over the three years studied.

Apart from the results shown here, there is cause for concern with the trend. Readability steadily decreased over the years examined in this study. If the trend continues then financial statement readability will continue to decline.

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Changing Tax Policy Impact on the Risk Level of Vietnam Wholesale and Retail Firms

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Abstract

Many financial markets including but not limit to, the emerging stock market in Viet Nam, have been affected by the financial crisis 2007-2009. This study analyzes the impacts of tax policy on market risk for the listed firms in the wholesale and retail industry during this period as it becomes necessary. First, by using quantitative and analytical methods to estimate asset and equity beta of total 9 listed companies in Viet Nam wholesale and retail industry with a proper traditional model, we found out that the beta values, in general, for many companies are acceptable. Second, under 3 different scenarios of changing tax rates (20%, 25% and 28%), we recognized that there is not large disperse in equity beta values, estimated at 0,646, 0,653 and 0,657. These values are much lower than those of the listed VN construction firms. Third, by changing tax rates in 3 scenarios (25%, 20% and 28%), we recognized both equity and asset beta mean values have positive relationship with the increasing levels of tax rate. Finally, this paper provides some outcomes that could provide companies and government more evidence in establishing their policies in governance.

Keywords: Equity Beta, Financial Structure, Financial Crisis, Risk, Tax Rate, Wholesale and Retail

1. Introduction

Together with the development of real estate and banking industry, during many recent years, Viet Nam wholesale and retail industry is considered as one of active economic sectors, which has certain positive effect for the economy. This paper is organized as follow. The research issues and literature review will be covered in next sessions 2 and 3, for a short summary. Then, methodology and conceptual theories are introduced in session 4 and 5. Session 6 describes the data in empirical analysis. Session 7 presents empirical results and findings. Next, session 8 covers the analytical results. Then, session 9 presents analysis of risk. Lastly, session 10 will conclude with some policy suggestions. This paper also supports readers with references, exhibits and relevant web sources.

We mention some issues on the estimating of impacts of tax rates on beta for listed wholesale and retail companies in Viet Nam stock exchange as following:

Issue 1: Whether the risk level of wholesale and retail firms under the different changing scenarios of tax rates increase or decrease so much.

Issue 2: Whether the disperse distribution of beta values become large in the different changing scenarios of tax rates estimated in the wholesale and retail industry.

2. Literature Review

Smith (2004) mentions in Chicago, properties located in a designated TIF (tax increment financing) district will exhibit higher rates of appreciation after the area is designated a qualifying TIF district when compared to those properties selling outside TIF districts, and when compared to properties that sell within TIF district boundaries prior to designation.

Robert et al (2011) recognized a significant positive relation between changes in intercorporate investment and changes in corporate marginal tax rates on ordinary income. Next, Ruud et al (2013) said that greater tax bias is associated with significantly higher aggregate bank leverage, and this in turn is associated with a significantly greater chance of crisis. Steven (2013) indicated that international tax reform is a major part of Business Tax Reform of the US President. And Both OECD and Europe Commission have recently released projects designed to address corporate tax evasion and profits shifting. Next, Omri (2013) suggested the US should adopt a two-pronged corporate tax –residence test: the place where the corporation’s securities are listed for public trading, or the place of the corporation’s central management and control.

Then, Sung, Mark and Laura (2013) also indicated that business property values are more responsive to changes in tax rates as compared to residential property. Finally, tax rate can be considered as one among many factors that affect business risk of real estate firms.

3. Conceptual Theory

The impact of fiscal policy on the economy

Tax policy is one among major fiscal policies. Corporate taxation might affect the output, income or compensation, as well as the revenue-raising capacity of both the tax system and the company.

In a specific industry such as wholesale and retail industry, on the one hand, using tax policy with a decrease or increase in tax rate could affect tax revenues, profit after tax and financial results and compensation and jobs of the industry. On the other hand, using tax policies could increase the financial results of this industry and therefore, affect the tax revenues, compensation and jobs.

During and after financial crises such as the 2007-2009 crisis, there raises concerns about fiscal policies or public policies of many countries, in both developed and developing markets.

4. Research Methodology

The impacts from the financial crisis happened during the period 2007-2011; therefore, in this study, we use the live data from the stock exchange market in Viet Nam (HOSE and HNX) during the four or five years period to estimate systemic risk results and tax impacts. In this study, analytical research method is used and specially, tax rate scenario analysis method is used. Analytical data is from the situation of listed wholesale and retail firms in VN stock exchange and current tax rate is 25%. Finally, we use the results to suggest policy for both these enterprises, relevant organizations and government.

5. General Data Analysis

The research sample has total 9 listed firms in the wholesale and retail market with the live data from the stock exchange. Firstly, we estimate equity beta values of these firms and use financial leverage to estimate asset beta values of them. Secondly, we change the tax rate from 25% to 28% and 20% to see the sensitivity of beta values. In 3 cases (rate = 20%, 25%, and 28%), asset beta mean is estimated at 0,349, 0,352 and 0,355. Also in 3 scenarios, we find out var of asset beta estimated at 0,031 (almost the same, with a little decrease if tax rate increases to 28%) which shows small risk dispersion. Tax rate changes almost has no effect on asset beta var under financial leverage.

6. Empirical Research Findings and Discussion

In the below section, data used are from total 9 listed wholesale and retail companies on VN stock exchange (HOSE and HNX mainly). In the scenario 1, current tax rate is 25% which is used to calculate market risk (beta). Then, two (2) tax rate scenarios are changed up to 28% and down to 20%, compared to the current corporate tax rate.

Market risk (beta) under the impact of tax rate, includes: 1) equity beta; and 2) asset beta.

Scenario 1: current tax rate is 25%

In the case of tax rate of 25%, all beta values of 9 listed firms on VN wholesale and retail market as following:

Table 1 Market Risk of Listed Companies on VN Wholesale and Retail Market (t = 25%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)
1	HHS	0,728	0,479
2	IMT	0,399	0,386
3	TH1	0,409	0,160
4	BSC	0,420	0,342
5	PET	1,273	0,351
6	BTT	0,829	0,640
7	CMV	0,391	0,126
8	PIT	1,012	0,514
9	VT1	0,411	0,175

Scenario 2: tax rate increases up to 28%

If corporate tax rates increases up to 28%, all beta values of total 9 listed firms on VN wholesale and retail market as below:

Table 2 Market Risk of Listed Wholesale and Retail Firms (t = 28%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)
1	HHS	0,736	0,485
2	IMT	0,399	0,386
3	TH1	0,409	0,160
4	BSC	0,423	0,344
5	PET	1,273	0,351
6	BTT	0,835	0,644
7	CMV	0,401	0,129
8	PIT	1,012	0,514
9	VT1	0,423	0,180

Scenario 3: tax rate decreases down to 20%

If corporate tax rate decreases down to 20%, all beta values of total 9 listed firms on the wholesale and retail market in VN as following:

Table 3 Market Risk of Listed Wholesale and Retail Firms (t = 20%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)
1	HHS	0,715	0,470
2	IMT	0,398	0,385
3	TH1	0,409	0,160
4	BSC	0,416	0,338
5	PET	1,273	0,351
6	BTT	0,819	0,632
7	CMV	0,376	0,121
8	PIT	1,012	0,514
9	VT1	0,393	0,167

All three above tables and data show that values of equity and asset beta in the case of increasing tax rate up to 28% or decreasing rate down to 20% have small fluctuation.

Comparing statistical results in 3 scenarios of changing tax rate:

a. tax rate = 25%

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,273	0,640	0,6334
MIN	0,391	0,126	0,2657
MEAN	0,653	0,352	0,3002
VAR	0,1069	0,0307	0,0761
Note: Sample size : 9			

b. tax rate = 28%

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,273	0,644	0,6287
MIN	0,399	0,129	0,2705
MEAN	0,657	0,355	0,3022
VAR	0,1058	0,0308	0,0750
Note: Sample size : 9			

c. tax rate = 20%

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,273	0,632	0,6410
MIN	0,376	0,121	0,2553
MEAN	0,646	0,349	0,2970
VAR	0,1086	0,0305	0,0781
Note: Sample size : 9			

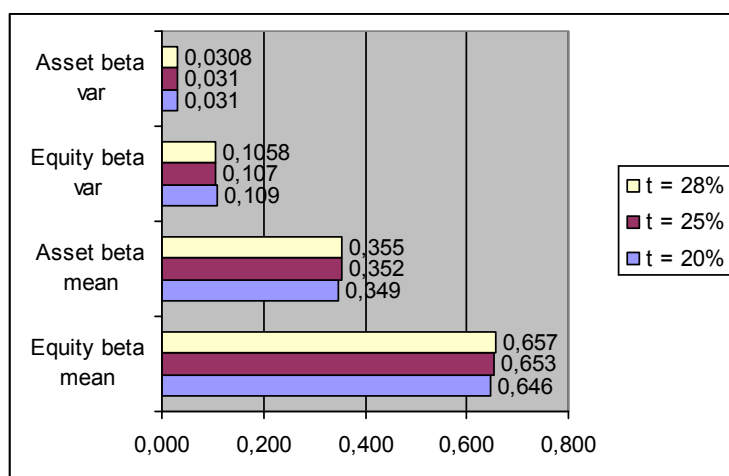
Based on above results, we find out:

Equity beta mean values in all 3 scenarios are little low ($< 0,7$) and asset beta mean values are small ($< 0,4$). In the case of current tax rate of 25%, equity beta value fluctuates in a wide range from 0,391 (min) up to 1,273 (max) and asset beta fluctuates from 0,126 (min) up to 0,640 (max). We note there is a big decrease in max asset beta value here. If corporate tax rate increases to 28%, equity beta moves from 0,399 (min) up to 1,273 (max) and asset beta moves from 0,129 (min) up to 0,644 (max). Hence, we note that there is a little increase in equity beta min value if corporate tax increases. When tax rate decreases down to 20%, equity beta value changes from 0,376 (min) up to 1,273 (max) and asset beta changes from 0,121 (min) up to 0,632 (max). So, there is small decrease in equity/asset beta min values when tax decreases in scenario 3.

Beside, Exhibit 7 informs us that in the case 28% tax rate, average equity beta value of 9 listed firms increases up to 0,004 while average asset beta value of these 9 firms increase slightly up to 0,002. Then, when tax rate reduces to 20%, average equity beta value of 9 listed firms reduce to 0,007 and average asset beta value down to 0,004.

The below chart 1 shows us : when tax rate decreases down to 20%, average equity and asset beta values decrease slightly (0,646 and 0,349) compared to those at the initial rate of 25% (0,653 and 0,352). At the same time, when tax rate increases up to 28%, average equity and beta increases slightly (to 0,657 and 0,355). However, the fluctuation of equity and asset beta values (0,109 and 0,031) in the case of 20% tax rate is higher than or equal to (\geq) the results in the rest 2 tax rate cases.

Figure 1 Comparing Statistical Results of Three (3) Scenarios of Changing Tax Rate



7. Risk Analysis

In the case of decreasing tax rate, (20%), the market and companies can receive more benefits such as generating more jobs and compensation, but the government budget can have deficit and the government has to cut expenses. Changes in tax rates can have both positive and negative impacts on the local market.

In the case of increasing tax rate (28%), the government will have budget to finance public expenditures but the tax could reduce both demand and supply. Moreover, both the company and the firm owner will have to pay taxes.

8. Conclusion and Policy Suggestion

In summary, the government continues to increase the effectiveness of building the legal system and regulation and macro policies supporting the plan of developing both the construction together with the real estate market. The Ministry of Finance Continue to increase the effectiveness of fiscal policies and tax policies which are needed to combine with other macro policies at the same time, although we could note that in this study when tax rate is going to increase from 20% to 28%, the value of equity beta mean also increases. The State Bank of Viet Nam continues to increase the effectiveness of capital providing channels for both construction and real estate companies. Finally, this paper suggests implications for further research and policy suggestion for the Viet Nam government and relevant organizations, economists and investors from current market conditions.

Acknowledgements

My sincere thanks are for the editorial office and Lecturers/Doctors at Banking University and International University of Japan. Through the qualitative analysis, please kindly email me if any error found.

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EXHIBIT

Exhibit 1 – Interest rates in banking industry during crisis
(source: Viet Nam commercial banks)

Year	Borrowing Interest rates	Deposit Rates	Note
2011	18%-22%	13%-14%	
2010	19%-20%	13%-14%	Approximately (2007: required reserves ratio at SBV is changed from 5% to 10%) (2009: special supporting interest rate is 4%)
2009	9%-12%	9%-10%	
2008	19%-21%	15%-16,5%	
2007	12%-15%	9%-11%	

Exhibit 2 – Basic interest rate changes in Viet Nam
(source: State Bank of Viet Nam and Viet Nam economy)

Year	Basic rate	Note
2011	9%	
2010	8%	
2009	7%	
2008	8,75%-14%	Approximately, fluctuated
2007	8,25%	
2006	8,25%	
2005	7,8%	
2004	7,5%	
2003	7,5%	
2002	7,44%	
2001	7,2%-8,7%	Approximately, fluctuated
2000	9%	

Exhibit 3 – Inflation, GDP growth and macroeconomics factors
(source: Viet Nam commercial banks and economic statistical bureau)

Year	Inflation	GDP	USD/VND rate
2011	18%	5,89%	20.670
2010	11,75%	6,5%	19.495
	(Estimated at Dec 2010)	(expected)	
2009	6,88%	5,2%	17.000
2008	22%	6,23%	17.700
2007	12,63%	8,44%	16.132
2006	6,6%	8,17%	
2005	8,4%		
Note		approximately	

Exhibit 4: GDP growth Việt Nam 2006-2010 (source: Bureau Statistic)

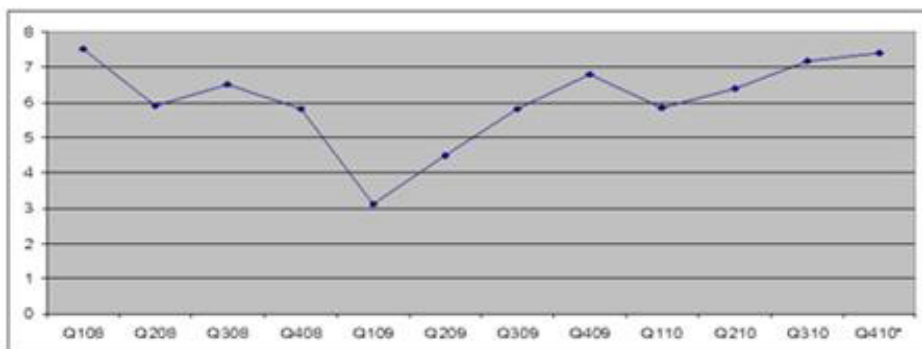


Exhibit 5: Top 40 among top 500 SMEs with the highest growth speed in 2012 (source: Vietnamnet and Viet Nam report)

Order	Rank	Company name	CEO	Tax code	Industry
1	1	CÔNG TY CP LÂM SẢN PISICO QUẢNG NAM	Phan Văn Cường	4000405162	Kinh doanh nông, lâm sản
2	2	CÔNG TY CP VÀNG BẠC ĐÁ QUÝ SJC CẦN THƠ	Lê Phát Vinh	1800636290	Vàng, bạc, đá quý
3	3	CÔNG TY CP SỢI PHÚ NAM	Hoàng Văn Thám	3300491474	Sản xuất sợi, dệt
4	4	CÔNG TY CP VÀNG BẠC ĐÁ QUÝ BẾN THÀNH	Tê Trí Dũng	300847936	Vàng, bạc, đá quý
5	5	CÔNG TY CP MAY CHIẾN THẮNG	Ninh Thị Ty	100101058	Ngành may
6	6	CÔNG TY TNHH DU LỊCH TRẦN VIỆT	Nguyễn Mạnh Cường	301069809	Du lịch, khách sạn
7	7	N.A		2012701	
8	8	CÔNG TY TNHH TRUYỀN THÔNG ADT	Đặng Huy Thắng	100905796	Sản xuất khác
9	9	CÔNG TY CP KẾT NỐI NHÂN TÀI	Tiêu Yến Trinh	305202145	Kinh doanh tổng hợp khác

10	10	CÔNG TY TNHH THIẾT LẬP	Nguyễn Hoàng Ân	1500441413	Sản xuất, kinh doanh, chế biến gạo, bột mỳ, ngũ cốc...
11	11	CÔNG TY TNHH-CHẾ BIẾN THỦY SẢN VÀ XNK TRANG KHANH	Trần Tuấn Khanh	1900287501	Nuôi trồng, chế biến, kinh doanh thủy sản và các sản phẩm thịt
12	12	CÔNG TY SẢN XUẤT THƯƠNG MẠI VÀ ĐẦU TƯ TAM MINH	Lưu Tuấn Anh	4300327589	Sản xuất đồ gỗ, nội thất
13	13	CÔNG TY TNHH THƯƠNG MẠI SẢN XUẤT HÙNG HUY	Voòng A Hoa	302259111	Sản xuất và gia công giấy, dếp
14	14	CÔNG TY TNHH THƯƠNG MẠI HOÀNG ĐẠO	Hồ Hoàng Bách	301434963	Sản xuất, kinh doanh thuốc lá, nguyên liệu thuốc lá
15	15	CÔNG TY TNHH THƯƠNG MẠI XÂY DỰNG ĐIỀU LONG	Đặng Thị Linh Phương	302000905	Kinh doanh tổng hợp khác
16	16	CÔNG TY CP XÂY DỰNG NHÀ VÀ PHÁT TRIỂN HẠ TẦNG HÀ NỘI	Phạm Thanh Nam	101370536	Xây dựng nhà và các công trình kỹ thuật dân dụng; hoạt động xây dựng chuyên dụng
17	17	CÔNG TY CP XĂNG DẦU THƯƠNG MẠI SÔNG TRÀ	Nguyễn Anh	4300334642	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
18	18	CÔNG TY CP SỢI PHÚ THANH	Nguyễn Văn Cường	3300471069	Sản xuất sợi, dệt
19	19	CÔNG TY TNHH DU LỊCH VÀ THƯƠNG MẠI SÔNG HỒNG	Lê Công Hoàng	100237411	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
20	20	CÔNG TY CP DẦU THỰC VẬT BÌNH ĐỊNH	Nguyễn Thị Thùy Giao	4100399995	Sản xuất thực phẩm chế biến: sữa, đường, cà phê, dầu ăn, bánh kẹo...
21	21	CÔNG TY CP VẬT TƯ MỎ ĐỊA CHẤT	Lê Nhật Tân	101453768	Kinh doanh tổng hợp khác
22	22	CÔNG TY TNHH MTV SÀI GÒN BẾN TRE	Nguyễn Ngọc Minh Hùng	1300419650	Bán lẻ, kinh doanh siêu thị
23	23	CÔNG TY TNHH HẢI VIỆT	Nguyễn Văn Ri	3700443193	Kinh doanh nông, lâm sản
24	24	CÔNG TY TNHH MAY PHÙ ĐỔNG	Dương Đức Thanh	100598947	Ngành may
25	25	CÔNG TY TNHH THƯƠNG MẠI VÀ DỊCH VỤ KỸ THUẬT	Trần Thanh Bình	101507773	Sản xuất, kinh doanh ô tô, phụ tùng ô tô

		TESCO			
26	26	CÔNG TY TNHH THƯƠNG MẠI PHÚC THÁI	Bùi Xuân Huy	600346391	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
27	27	CÔNG TY TNHH MINH ĐĂNG	Nguyễn Thị Cẩm Nhung	2200258144	Nuôi trồng, chế biến, kinh doanh thủy sản và các sản phẩm thịt
28	28	CÔNG TY TNHH THƯƠNG MẠI VÀ DỊCH VỤ VÂN TÀI NGỌC KHÁNH	Trần Ngọc Huân	4000377194	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
29	29	CÔNG TY TNHH THƯƠNG MẠI DỊCH VỤ VÂN PHÁT	Cao Ngọc Anh	303332212	Kinh doanh tổng hợp khác
30	30	CÔNG TY CP VÂN TÀI VÀ DỊCH VỤ PETROLIMEX NGHỆ TĨNH	Võ Văn Tân	2900428497	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
31	31	CÔNG TY TNHH THƯƠNG MẠI SẢN XUẤT TÂN BÌNH	Trần Trí Thức	3900326063	Sản xuất đồ gỗ, nội thất
32	32	CÔNG TY TNHH NGUYÊN LIỆU GIẤY DUNG QUẤT	Nguyễn Nị	4300308498	Sản xuất đồ gỗ, nội thất
33	33	CÔNG TY TNHH BỆNH VIỆN ĐA KHOA TỪ NHÂN AN SINH	Ngô Đăng Sơn Anh	302774433	Sản xuất khác
34	34	CÔNG TY TNHH IN LƯA NHẤT PHƯƠNG	Huỳnh Thị Thanh Thủy	301441840	Sản xuất giấy, in ấn, xuất bản
35	35	CÔNG TY CP DẦU KHÍ SÀI GÒN-PHÚ YÊN	Trần Công Chường	4400344901	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
36	36	CÔNG TY CP BÊ TÔNG ĐĂNG HẢI	Phan Văn Khanh	400619838	Sản xuất, kinh doanh vật liệu xây dựng: xi măng, gạch xây, đá, cát...
37	37	CÔNG TY CP GIÀY BÌNH ĐỊNH	Võ Ngọc Thủy	4100258761	Sản xuất và gia công giày, dép
38	38	CÔNG TY CP ĐẦU TƯ PHÁT TRIỂN THIÊN	Vũ Văn Tuyên	101536301	Sản xuất, kinh doanh vật liệu xây dựng: xi

		SON			măng, gạch xây, đá, cát...
39	39	HTX THƯƠNG MẠI ĐÔ THÀNH	Hàng Thanh Dân	302804374	Kinh doanh thực phẩm chế biến: sữa, đường, cà phê, dầu ăn, bánh kẹo.....
40	40	CÔNG TY CP XÂY DỰNG TỔNG HỢP 269	Trương Duy Niệm	3000244523	Xây dựng nhà và các công trình kỹ thuật dân dụng; hoạt động xây dựng chuyên dụng

Exhibit 6: Risk and financial leverage of 9 listed wholesale and retail firms on VN stock exchange period 2007-2011

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	HHS	0,728	0,479	PIT as comparable	34,2%
2	IMT	0,399	0,386	TH1 as comparable	3,4%
3	TH1	0,409	0,160		60,8%
4	BSC	0,420	0,342	FBA as comparable	18,7%
5	PET	1,273	0,351		72,4%
6	BTT	0,829	0,640	PIT as comparable	22,8%
7	CMV	0,391	0,126	PIT as comparable	67,9%
8	PIT	1,012	0,514		49,2%
9	VT1	0,411	0,175	BTT as comparable	57,5%
Average					43,0%

Exhibit 7 – Increase/decrease risk level of listed wholesale and retail firms under changing scenarios of tax rates : 25%, 28%, 20% period 2007 - 2011

Order No.	Company stock code	t = 25%		t = 28%		t = 20%	
		Equity beta	Asset beta	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)
1	HHS	0,728	0,479	0,008	0,005	-0,013	-0,009
2	IMT	0,399	0,386	0,000	0,000	-0,001	-0,001
3	TH1	0,409	0,160	0,000	0,000	0,000	0,000
4	BSC	0,420	0,342	0,002	0,002	-0,004	-0,003
5	PET	1,273	0,351	0,000	0,000	0,000	0,000
6	BTT	0,829	0,640	0,006	0,005	-0,010	-0,008
7	CMV	0,391	0,126	0,010	0,003	-0,015	-0,005
8	PIT	1,012	0,514	0,000	0,000	0,000	0,000
9	VT1	0,411	0,175	0,012	0,005	-0,018	-0,008
Average				0,004	0,002	-0,007	-0,004

Exhibit 8- Comparing statistical results of three (3) scenarios of changing tax rate of 104 listed construction firms

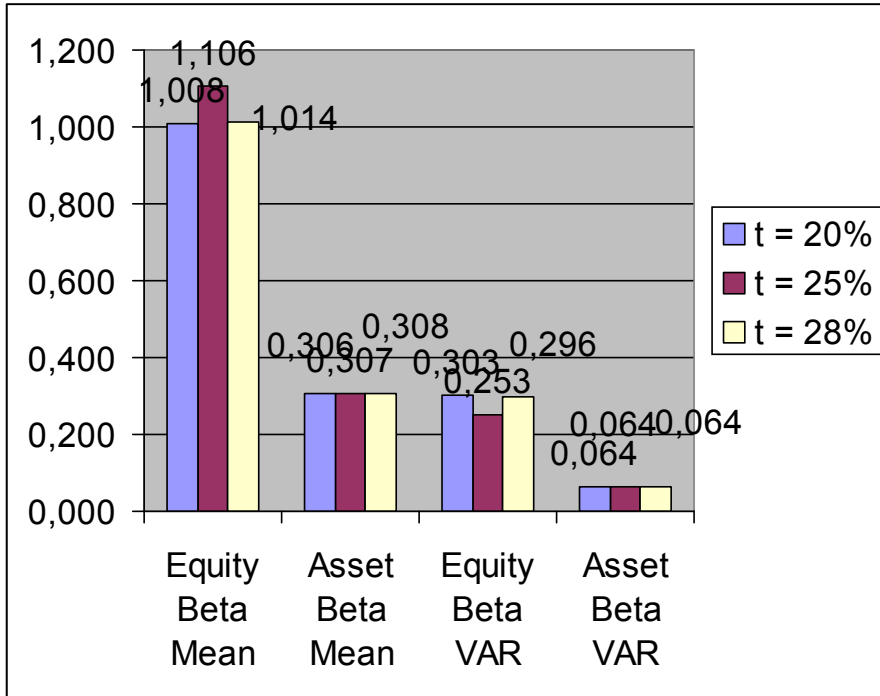
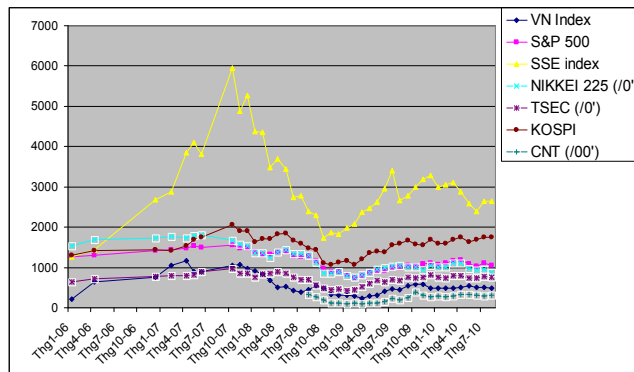


Exhibit 9- VNI Index and other stock market index during crisis 2006-2010



Dependency of Human Resource Planning on Human Resource Information System: A Study on Banking Sector in Bangladesh

by

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IJMBE International Journal of
Management, Business, and Economics

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Abstract

Human resource information system (HRIS) is not new perception. Its major role is in human resource planning (HRP) which is required for selecting right people for the right place in any organization. Human Resource Information System (HRIS) has become one of most crucial systems in the market. This study focuses on the Dependency of Human Resource Planning on Human Resource Information System (HRIS): A Study on Banking Sector in Bangladesh. The objective is to identify the contribution of HRIS in HR planning through HRIS recruiting and training & development subsystems as apparent by HR executives in Bangladesh banking sector. Answers received from 60 respondents have been analyzed. Data have been collected using a structured questionnaire based on five point Likertscale. To test the hypotheses of the study some statistical analyses have been performed. These are Pearson correlations, Cronbach's alpha reliability test and Multiple Regression Analysis. This study demonstrates HRIS requirements that increase the efficiency of HR planning.

Keywords: Human Resource Information System, Recruitment, Training and Development, Human Resource Planning

1. Introduction

Human Resources are the most key elements to any organization. Using of HRIS, HR staff relieve out of paper related work when it is related to service sector and skilled related organizations. In Bangladesh, managing human resources plays a crucial role. The main purpose of Human resource department is to manage people in a more efficient way. In the era of global transformation, service industries in Bangladesh have shown an incredible development over the last decade. For this reason we have required huge number of efficient, competent, knowledgeable, energetic and enthusiastic staffs. With the development of science and technology, the world has shift towards a more integrated and interdependent global economy on continuous innovation to make work life easier and new technology is continually being developed. This change requires organizational evolve of the different types of technology which could improve the organizational success. It's not responsibility for HR to be the dusty repository of information locked in the office file which is not converted into functional data. If organizations effectively manage HRIS than organizations, it will easily keep more accurate and up-to-date information. An HRIS will help to increases in efficiency and effectiveness when it comes to making any decisions in HR. This study conducted to find out the weather HRIS influence of human resource planning throughout recruitment, selection, training and development within the organization in private sector in Bangladesh.

2. Literature Review

Human Resource Information System (HRIS)

HRIS is one of the most significant Management Information Systems, which contributes to human resource administration functions of an organization. HRIS initiatives have been worldily accepted as the best chance for improvement in any organization as well as in the banking and financial sector to accommodate the increasing demand and supply of fundamental services or banking services in both the developed and developing countries (Ahmer, 2013)

HRIS, aptly claimed by Noe et al., (2007), as a computer system used to acquire, store, manipulate, analyze, retrieve, and distribute information related to human resources. According to Beadles et al. (2005), the use of HRIS has been advocated as an opportunity for human resource HR professionals to become strategic partners with top management.

HRIS and Human Resource Planning (HRP)

Pattanayak (2009) claimed that, the role of human resource planning is to integrate the planning and control of human resources into the corporate level plans. As a consequence, all capitals such as human capital, customer capital, and technological capital are used together in the greatest possible combination. HR planning plays a vital part in an organization hiring the right person in the right job at the right time. If HRIS helps HR planning functions such as recruitment and selection, training and development and succession planning, organizations would increase a competitive gain. HRIS or Human Resource Management Systems (HRMS) can support in identifying skilled, competent and capable workers. Organizational recruiting sources such as direct applications, advertisements, public or private employment agencies, colleges, universities, etc. are going to be replaced by HRIS electronic recruiting facilities reducing the cost of the organization HRIS skill inventory facilities can be used to store data in a skill database facilitating the selection of the most suitable candidates after analyzing their skills and qualifications according to the job requirement. Tao et al., said that (2006) training a significant strategic practice in the progress of internal capability. HRIS helps for Training Needs Analysis (TNA) to choose what training and development program might best meet the need, saving time and cost. TNA allows individuals to acquire at their own level, as well as learning only what they need to know in order to benefit their work said Eighteen, 1999. TNA is an outstanding HR tool, which assistances the organization to keep a training record for each delegate, viewing skill levels before and after the training. Succession planning is another important part of training and development which used to classify and record high-potential employees who is working in the organization in order to fulfill the top management positions whenever they become vacant.

HRIS benefits and obstacles

Considering the last few decades, we can easily observe that the organization is monitoring, collecting, storing, and analyzing the human resources information with the use of HRIS software or anything that involves functionality for HRIS (Ball, 2001; Hussain, Wallace, & Cornelius, 2007). Many studies mentioned HRIS benefits as an example of improvement in accuracy, the cost saving and the timely and quick access to information through HR reports claimed by Ngai and Wat, 2006. They also found how HRIS reduced the cost of an organization. How it maintained customer satisfaction, improved quality, and innovations. Almost all the HR applications involve the powering of HRM activities (Ngai et al., 2006). Furthermore, Ngai and Wat (2006) found how the accuracy

and timeliness of HRIS varied according to operating, controlling, and planning HR activities. The key component in the support HRIS delivers for the firm's HR strategy is the accessibility of information as input for HR-relating decision-making processes (Beulen, 2009). Ngai and Wat (2006) listed benefits of HRIS: increases competitiveness by improving HR operations, shifts the focus of HR from the processing of transactions to strategic HRM, makes employees part of HRIS and reengineers the entire HR function of companies. Alvarez-Suescun (2007) pointed out that, HRIS as a competitive tool which can be used in the organizational HR department. Teo et al. (2007) found some same findings, departmental relative advantage, compatibility, top management support, size of the organization and HRIS expertise emerged as important variables discriminating between adopters and non-adopters of HRIS.

HRIS usage

According to DeSanctis, 1986 explore that human resource planning, recruiting, and training are less common users within employee's possibly reflecting greater use of the system for routine reporting than for decision support. If the strategy were to reduce cost, the system would have been based on management purposes. According to Kovach and Cathcart (1999), HRIS information could be used for administrative purposes, which reduced cost and time, and supported more logical decisions as well. HRIS functionality includes corporate communication, recruitment, selection, training, employee opinion survey, compensation, payroll services and employee verification as well as general information (Ngai and Wat, 2006).

Training and development

The training and development involvement needed to be cautiously planned and applied and related to organizational goals and strategy, for the training investment to pay-off said Glaveli and Kufidu, 2005. There are differences between training and development practices relative to organization size, and small firms face unique barriers, including access to, time for, and the cost of training claimed by Sambrook, 2005.

Recruitment and selection

Recruitment represents the main employment activities that need to be efficiently and effectively planned and directed for organizations to achieve achievement (Darrag et al., 2010). He identified recruitment as the process of determining potential applicants for real or expected organizational vacancies or, from another viewpoint, it is a link activity-bringing together those with jobs to fill and those seeking jobs. According to Selden et al. (2000) a number of research emphases on the performance effects of human resource management practices, such as training, and selection. Darrag et al. (2010) and El-Kot and Leat (2008) have all studied recruitment and selection methods in detail they have not focused their attention on how new technology, specially HRIS could enhance and strengthen the recruitment and selection process of an organization. Selden et al. (2000) focused on assessing the efficiency of human resource management system, present a framework and methodology filling this knowledge gap. They addressed the ability to design an effective evaluation system given a set of criteria and made a survey instrument associated with the certain standards but they did not try to measure the effectiveness of recruitment and selection features of Human resource management system. In consideration of little research in the adoption of HRIS that has been done previously, particularly in developing nations such as Bangladesh, exploratory studies were more justifiable (Zikmund, Babin, Carr, & Griffin, 2010). The research has followed the convenience

sampling method which is cost effective and widely applied in information systems research (Eze, Manyeki, Yaw, & Har, 2011).

3. Research Objectives

Main Objective

The main objective of this study is to” Dependency of Human Resource Planning on Human Resource Information System (HRIS): A Study on Banking Sector in Bangladesh. There are some specific Objectives of this study. The specific objectives of this study are as follows:

1. To determine the contribution of HRIS recruitment subsystem of an organization.
2. To explore the contribution of HRIS training and development subsystem of an organization.
3. To find the overall contribution of HRIS in HR planning through HRIS recruiting and training and development subsystems of an organization.

Hypotheses

For research purposes, null and alternative hypotheses are developed as follows:

Hypothesis-1: H_0 : There is no association between HRIS recruitment and the Human Resource Planning (HRP)

H-1: There is association between HRIS recruitment and the Human Resource Planning (HRP)

Hypothesis-2: H_0 : There is no association between HRIS training and development and the Human Resource Planning (HRP)

H-2: There is association between HRIS training and development and the Human Resource Planning (HRP)

Hypothesis-3: H_0 : There is no association between HRIS in HR planning through HRIS recruiting and training & development and the Human Resource Planning (HRP)

H-3: There is association between HRIS in HR planning through HRIS recruitment and training & development and the Human Resource Planning (HRP)

4. Data and Research Methodology

This study has a conclusive type of research. For the purpose of the study primary data has been used. The variables which have been selected for the study as follows:

1. **Independent variables:** HRIS recruitment, HRIS training and development, HRIS in HR planning through HRIS recruitment, training and development
2. **Dependent variable:** Human Resource Planning (HRP).

Population of the study comprised of HR executives who use HRIS to extract information to assist the top management of private bank in Bangladesh.

The sample consisted of 60 HR executive of different private banks in Bangladesh. There are more than 57 Private banks in Bangladesh. It has very difficult for the researcher to visit each bank of Bangladesh. Hence four private banks have been conveniently selected and included in the sample. Researcher had to visit of the selected four branches of the private banks again and again. Researcher personally met with them to collect data.

A questionnaire consisting of fifty-three items to be responded on five-point Likert scale has been used to collect data. Questionnaire has to prepared based on prior researches. The data collection stage has very difficult for the researchers. The researchers distributed questionnaire to 120 respondents but the researchers have able to get response from 60 respondents. In order to analyze the data Cronbach's alpha coefficient has been used to test the reliability of responses. To test the hypotheses of the study some statistical analyses have been performed. These are Pearson correlations and Multiple Regression Analysis.

5. Data Analysis, Discussion, and Findings

Multiple Regression Analysis, Results and Interpretation

Table 1 in Appendix A demonstrates the outcomes of the multiple regression analysis in this study. The table shows the association between dependent variable and independent variables. The coefficient of determination R-square, F ratio, beta coefficient and t-statistics for the regression model and summarized results of the dependent variable on the independent variables are described below.

Table 1 in Appendix A demonstrates the outcomes an R-square of 0.679, which shows that the model is capable of explaining 67.90 percent of the variability of the human resource planning in the sample of banking sector under study. The adjusted R-square indicates that 62.30 percent of the variation in the dependent variable in the model used that is explained by variations in the independent variables. The F value of 98.519 (which is significant at the 0.000 levels) indicates that the model significantly explained the variations in the efficiency of human resources planning. All of these values propose that a significant percentage of the variation in the efficiency of human resources planning can be explained by the variations in the whole set of independent variables.

Hypotheses testing

Hypothesis 1:

The coefficient for HRIS recruitment is 0.829 which is statistically significant at the 0.000 level ($P < 0.01$, two tailed). The outcome recommends that HRIS recruitment & selection has significant positive impact on HRP. Thus, null hypothesis is rejected and alternative hypothesis is accepted.

The outcomes display in table 1 in Appendix A, R-square of 0.679, which shows that the model is capable of explaining 67.90 percent of the variability of the human resource planning in the sample of banking sector under study. The adjusted R-square indicates that 62.30 percent of the variation in the dependent variable in the model used here is explained by variations in the independent variables. The F value of 98.519 (which is significant at the 0.000 levels) indicates that the model significantly explained the variations in the efficiency of human resources planning. All

values recommend that a significant percentage of the variation in the efficiency of human resources planning can be explained by the variations in the whole set of independent variables.

Hypothesis 2:

The coefficient for HRIS training & development is 0.747 which is statistically significant at the 0.000 level ($P < 0.01$, two tailed). The outcome suggests that HRI Straining & development has significant positive impact on HRP. Thus, null hypothesis is rejected and alternative hypothesis is accepted.

The results show in Table 2 in Appendix A, R-square of 0.943, which indicates that the model is capable of explaining 94.30 percent of the variability of the human resources efficiency in the sample banking companies under study. The adjusted R-square indicates that 88.80 percent of the variation in the dependent variable in the model used here is explained by variations in the independent variables. The F value of 468.056 (which is significant at the 0.000 levels) indicates that the model significantly explained the variations in the efficiency of human resources.

Hypothesis 3:

The coefficient for HRIS training & development is 0.723 which is statistically significant at the 0.000 level ($P < 0.01$, two tailed). The result suggests that common role in HRIS training & selection has significant positive impact on HRP. Thus, null hypothesis is rejected and alternative hypothesis is accepted.

To test the research hypotheses Pearson correlation and multiple regressions were used. The result in Table -3 in Appendix A demonstrate that, HRIS recruitment, HRIS training & development and HRIS in HR planning through HRIS recruitment and training & development has positive relationship with Human resource planning (HRP). This study attempted to find the relationship between the components of HRIS and HRP of banking sector in Bangladesh. To realize the role of HRIS in banking sector, three research hypotheses were constructed. Pearson correlation was used to test the proposed research hypotheses of the study. The result of the study illustrated that each of the components of HRIS is positively related to the HRP of banking sector in Bangladesh. As indicated by the value of correlation coefficient 0.943, the findings showed that HRIS role in Recruitment appeared as the most important component of HRIS in influencing HRP of Banking sector in Bangladesh. The correlation coefficient of the were 0.793 and 0.760 respectively, and they were significant at 1% level. Thus, this appears to indicate that HR training and common role in training & development tend to have lower influence on the HRP of banking sector in Bangladesh than. Overall, the results illustrated that their components have positive relation with HRP. Therefore, the correlation findings of the study supported the proposed first three research hypotheses.

6. Conclusion

In Bangladesh HRIS is in its initial stages. It is because; lot of reforming is going on in the industry such as technological, infrastructure, and knowledge. Collected data presented that the available HRIS functions support the efficiency of organizational HR planning. In Bangladesh most organizations use HRIS for TNA and skill inventory. The widespread use of HRIS in Bangladeshi organizations HRIS proved to be very effective in record keeping and daily reporting functions. But it will be more effective if we are using HRIS in decision making process. Still, organizations are

unwilling to allocate high budget for HRIS development. The study intended at discovering the role of Human Resources Information System (HRIS) in private banks in Bangladesh. The study exposed that HRIS plays significant role in recruitment and selection, training & development in private banks. Use of HRIS is not used in vast in Bangladesh because lack of infrastructural development, high cost and insufficient training. The abolition of the difficulties in terms of infrastructure, cost and training would enable the private banks to recruit and select right people for the right place, deliver appropriate training to them and to ensure better quality and sustainable growth.

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Appendix A

Table 1 Model Summary (HRIS Role in Recruitment and Selection)

Model	R	\bar{R} Square			$A = \pi r^2$ Square	Std. Error of the Estimate		Durbin- Watson
	0.793	0.629			0.623	0.31792		1.781
ANOVA								
Model			Sum of Squares		df	Mean Square	F	Sig.
	Regression		9.958		1	9.958	98.519	0.000
	Residual		5.862		58	.101		
	Total		15.820		59			
Coefficients								
Model	Unstandardized Coefficients					Standardized Coefficients	t	Sig.
	B			Std. Error		Beta		
(Constant)	.567			0.340			1.665	0.101
HRIS Recruitment& Selection	0.829			0.084		0.793	9.926	0.000**
*P < 0.05, two tailed, **P < 0.01, two tailed								
Cranach's Alpha = 0.959						N = 53		

Model	R			R Square		Adjusted R Square		Std. Error of the Estimate				Durbin-Watson
ANOVA	0.869			0.755		0.751		0.25854				1.818
Model			Sum of Squares		df		Mean Square		F	Sig.		
	Regression		11.943		1		11.943		98.519	0.000		
	Residual		3.877		58		.067					
	Total		15.82		59							
Coefficients		Unstandardized Coefficients									t	Sig.
Model								Standardized Coefficients				
(Constant)		B	1.189			Std. Error		Beta			5.746	0.000**
HRIS training&development			0.747			0.207					13.367	0.000**
*P < 0.05, two tailed, **P < 0.01, two tailed						0.056						

Table 2 Model Summary (HRIS Role in Training and Development)

Table 3 Model Summary (Common HRIS role in Recruiting and Training and Development)

Model		R			R Square		Adjusted R Square	
		0.943			0.890		0.888	
ANOVA								
Model				Sum of Squares		df		Mean Square
	Regression			14.076		1		14.076
	Residual			1.744		58		.030
	Total			15.820		59		
Coefficients								
Model			Unstandardized Coefficients					
			B			Std. Error		
(Constant)			.983			0.138		
Common role Recruitment & Training			0.723			0.033		
*P < 0.05, two tailed, **P < 0.01, two tailed								

Logistics Crunch: Analysis of Intermodal Containers Resource in Pre and Post China-Pakistan Economic Corridor's Establishment

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IJMBE International Journal of
Management, Business, and Economics

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Abstract

China Pakistan Economic Corridor would link Gawadar (a deep sea port on the southwestern coast of Pakistan) with China, Central Asian States, Russia, Turkey and several other countries. Pakistan will, therefore, replace Hong Kong as an entrepôt. In addition to it, as a sixth most populous country, Pakistan's domestic consumption is on rise. Resultantly, the overall trade particularly the transit trade is expected to enormously grow in post China Pakistan Economic Corridor era. Notwithstanding, Pakistan appears less prepared in so far as international logistics is concerned. Having analyzed data retrieved from focus group and a variety of archival records, it can be safely suggested that the quantity and quality of the intermodal containers is not sufficient to fulfill the exponentially rising trade needs. We also found Pakistan does not produce intermodal containers locally. This area needs immediate attention from both public and private sectors, as shortage of intermodal containers can potentially disrupt the regional trade.

Keywords: Intermodal Containers, Transportation, International Logistics

1. Introduction

International logistics is about designing and managing a co-ordinated system to control the flow of materials and products throughout the firm. Strategically, international logistics constitutes a very important area of the firm because these expenses can account for 10 per cent of their total costs (Rugman et al., 2006). Moreover, lack of reliability and trust caused by poor management of logistics can have adverse consequences for the salability of the product (Mayinger, 2001). One mentionable development that helped international businesses resolve these and related issues is the introduction of the intermodal container (Stern, 2010). Inter-modality helped to transfer goods in a continuous flow through the entire transport chain, from origin to final destination, in the most cost- and time-effective way (Hayuth, 1994) thus, changed the landscape of entire international logistics (Arjen and Berg, 1998; Levinson, 2006).

Undoubtedly, in recent years Intermodal Containers sector witnessed a boom of research and development in terms of new intermodal techniques (Rugman et al., 2006). Notwithstanding, international logistics literature in this area is quite scarce. Intermodalism, in particular, has been rarely examined in emerging economies context. This article fills this gap by examining the situation of intermodal containers in context of Pakistan. Such an examination is crucial for the field of international logistics when trade pattern between East and West are drastically changing and similar patterned change is taking place in terms of intermodal containers resource.

This study will, therefore, contribute to the extant literature on international logistics and particularly Intermodalism. We draw on previous research to establish the significance of intermodal containers for international businesses. Moreover, data gathered through Focus group and archival records helps us analyze the intermodal container resource in pre and post China Pakistan Economic Corridor's establishment. Our study has important implications for Academia, Government of Pakistan and China, MNEs and several other important stakeholders.

We have structured our study in the following format: In section titled Literature review, we discuss the various types of transportation and issues therein. This helps us understand the significance of intermodal containers. In second section on methodology we briefly describe the data collection and analysis through focus group and archival records. In section titled Research site, we try to map the important stakeholders in intermodal sector of Pakistan and quantify the available intermodal resource. Then we discuss the changing pattern of international and domestic trade and its implications for intermodal containers sector of Pakistan. We conclude with final remarks at towards the end.

2. Literature Review

While reviewing the literature we mainly focus on issues in traditional transport and significance of intermodal containers. We will first present the literature that deals with logistics and types of transportation.

Logistics: Global innovation management and knowledge management are seen to be increasingly important to the long-run performance of all firms. The terms distributed innovation and differentiated networks are used to characterize how firms should learn globally and exploit this learning globally to improve production processes and products in all markets (Nohria and Ghoshal, 1997).

In recent years management of distribution as a branch of business science emanated as logistics management (Graham, 1998), which is the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services and related information from point of origin to point of consumption for the purpose of conforming to customer requirements. It is like a cradle-to- grave analysis of the ordering, transport, and storage of the product or service being produced and of the inputs required producing it (Allen, 1997).

To benefit from the logistics management, countries have developed international logistics system which is the designing and managing of a system to control the flow of materials and products throughout the firm. This includes the inflow of materials, movement through the production process, and outflow to the wholesale/retail firm or final consumer. International logistics is an important area of strategic consideration because these expenses can account for 10 per cent of their total costs (Rugman et al., 2006).

Transportation and its types: As a part of logistics the transportation has been explained as a process of conveying different types of goods from one point to another. Quantitatively, it is just one largest of many functions that make up logistics and is the largest component of logistics costs estimated to be more than 40 percent of the distribution cost (Allen, 1997). Moreover, in terms of production and distribution activity, it accounts for large movements of freight in all economies (Pisarski, 1981).

The transport network is made up of links like roads, railways or waterways on which vehicles move and it also includes air mode which is more efficient. These links connect at their nodes—i.e., infrastructures like terminals or logistics platforms where goods are loaded, unloaded, transhipped or processed in different ways (Rugman et al., 2006, and Marchis et al., 2011). Road freight transport is an important transport mode because of its excellent door-to-door performance in terms of service quality (Wiegmans, 2010). Rail freight transport companies transport freight by using rolling stock (wagons and locomotives) and the rail transport product market can be divided according to the way the freight is transported (Wiegmans, 2007).

In ocean transportation mode firms can choose from a fairly wide variety of ocean carriers (Rugman et al, 2006). The three most common carriers are as follows:

- Unconventional cargo vessels are used for shipping oversized and unusual cargoes.
- Roll-on-roll-off (RORO) vessels are ocean-going ferries that can carry trucks that drive onto built-in ramps and roll off at the point of debarkation.
- Lighter aboard ship (LASH) vessel which consists of barges that are stored on the ship and lowered at the point of destination.

However, one of the major problems in planning an ocean shipping strategy is the limitations caused by the lack of ports and port services. In developing countries, for example, seaports sometimes lack the equipment necessary to load or unload container cargo, thus limiting the country's ability to export and import. To cope up with this situation, in recent years a number of third world countries are working to improve their ports so they can become more active in the international trade arena (Rondinelli and Berry, 2000).

The third mode of transportation is the air transportation. Most countries have airports that can accommodate air freight. But the problem with this mode of transportation is its high cost. Although international air freight has grown dramatically over the last 30 years, it still accounts for less than 1 percent of the total volume of international shipments. It is used in trade more commonly among industrialized nations, and it is usually restricted to high-value items that must reach their destination on time.

Issues in traditional transport: Due to the modern technologies the traditional transportation—i.e., transportation before the Intermodalism—has failed to help firms meet their objectives. There are several reasons for traditional transportation to turn ineffective. For example, the period between departure and arrival of a carrier can vary significantly, so one of the questions a firm must answer is: How quickly a delivery has to be made? A number of factors have to be taken into consideration while answering this question. One is the perishability of the product like Exotic flowers and time to replenish the current stocks, for instance, in case of auto industry is another factor. Moreover, political considerations must also be taken into account when formulating the transportation strategy (Jackson et al., 2014).

Reliability and trust are extremely important for shipments, where the difference of one day could significantly influence the salability of the product (Rugman et al, 2006). Typically, an MNE will use air shipments only when time is critical and/or the product has high value (Mayinger, 2001). Besides, the expense associated with shipping is a major consideration when choosing an international transportation mode. A major cost in break bulk shipping is time and labor spent because of loading and unloading ships at portside in ways that avoid damage to the goods (Levinson, 2006).

Intermodalism: To resolve the aforementioned issues innovation is needed. Innovation could be broadly divided into product/service development and process development. Former refers to new product/service development while the latter refers to innovation activities that improve the way products/services are produced, making them quicker, cheaper, or better quality (Khan, 1989).

Continuous innovation lies at the heart of sustained competitive advantage, and managing it effectively has a strong effect on international business (Rugman et al., 2006). Explaining the innovation, Stern (2010) suggested that the first big thing that changed the landscape of international logistics was the introduction of the container. When we think about technology that changed the world, we think about splendid things like the Internet. But if you try to figure out what happened to world trade, there is a really strong case to be made that it was the container, which could be hauled off a ship and put onto a truck or a train and moved on.

Following the container development, innovation brought more sophisticated form of containers—i.e., intermodal containers. The intermodal containers are large size steel/iron boxes built in different sizes and then join together in standard sizes to allow transportation of goods through numerous mode of transportation like shipping, trucking, train and, rarely by airplane. It is a simple technology whose use is enormously increased and it has a profound social and economic impact in the environment (Arjen and Berg, 1998; Levinson, 2006).

The concept of intermodal freight transport provides an innovative solution for realizing efficient and sustainable transport systems. By integrating and coordinating the use of different transport modes available in an intermodal freight transport network through an efficient ICT (information and communication technology) system, intermodal freight transport provides the opportunity to obtain an efficient use of the physical infrastructure as well as providing cost and energy efficient transport services (Li et al., 2015). The objective of inter-modality is to transfer goods in a continuous flow through the entire transport chain, from origin to final destination, in the most cost- and time-effective way. (Hayuth, 1994).

Mahoney (1985) and Rugman et al. (2006) described that there had been a boom in the sector of research and development of new intermodal techniques for movement of goods in the recent years. That had been due primarily to the deregulation and computerization. One of the new techniques is the modern container-port which is a factory where scale strains the limits of the imaginations. Every single day at major's ports of the world thousands of containers arrive and depart through truck or train. Loaded trucks stream through the gates and each gate have the scanners which read the unique number of each container and computers compare it against shipping and then display it before the truck driver who gets information where to deliver the load. Tractor units arrive to hook up chassis and haul away containers that have just come off the ship and trains carrying double-stacked containers roll into an intermodal containers terminal which must be near the dock, where giant cranes straddle the train to remove containers one by one. Out bounded containers destined for the rail yard to go more than 2,000 miles away with only the briefest of stops on the route are assembled on the same track and loaded by the same cranes. And the same procedure is

repeated for the whole day even some times the 24hrs working have been observed on some terminals due to the load of work on those ports or terminals. This is the result of nearly seamless system in shipping freight around the world (Lun et al., 2010).

Describing the intermodal containers in terms of cost, it is suggested that the intermodal containers system provides shippers with the opportunities to cut cost or save their money from transportation and spend that cost on other functions—e.g., to improve their marketing and distribution (Mahoney, 1985; Rugman and Collinson, 2006). In addition to it, the intermodal containers freight is based on the principle of economies of scale that reduces cost per transported unit. But it is also providing solution to the freight of low density and high quality goods when the quality requirements have to be met (Jackson et al., 2014).

Intermodal transport has a large market share for commodity flows over long distances, for seaport hinterland flows, for flows between production plants and to depots and for bulk commodities and dangerous goods (Cardebring et al., 2000) with a focused used in surface transport – i.e., seaborne transport, road transport and railways (Jarzemskiene, 2007). Intermodal containers are providing one another cost effective tool that is packaging. It is important in ensuring that a product is shipped in a safe container and arrives undamaged. When goods are transported over a long distance or to areas with climates different from the one where they are manufactured, the container can prevent spoilage or leakage. Packaging is also important in reducing loading and unloading costs and minimizing theft and pilferage. As more goods are shipped internationally, packaging will continue to be a focal point of attention. Such considerations can help an MNE maximize shipping space and minimize transportation costs (Rugman et al., 2006). Container ships are used to carry standardized containers that can be simply loaded onto the carrier and then unloaded at their destination, without any repackaging of the contents of the containers (Lewandowski, 2016).

Although, intermodal container carries substantial significance, we may not be able to precisely quantify how much the container matters to the world economy and therefore to the Pakistani economy. How much did it cost to send 1,000 Tons of wool from Punjab Pakistan to Europe in 1955 and how did that cost change as containerization came into use? Clearly the containerization has reduced the cost of moving freight from one place to another within the country or worldwide. For example, the transportation cost is \$8205 from Germany to China using hinterland transportation, but it is \$4620 using multimodal transportation. In 1961, before the container was internationally used ocean freight costs accounted for 12 percent of the value of U.S. exports and 10 percent of the value of U.S. imports. According to the staff of the Joint Economic Committee of Congress these costs are more significant in many cases than governmental trade barrier (TR News, 2001; Siddiqui, 2016).

3. Research Methodology

As suggested above, most of the research in international logistics has mainly examined the benefits accrued to the national and global economy because of the use of Intermodal Containers. However, research that examines the changing patterns of global or regional trade vis-à-vis change in container resource has remained scarce. More importantly, this phenomenon has not been explored in the context of emerging economies particularly China and Pakistan. This study, therefore, fills this gap by reporting the key information of the sector and predicting the quantity and quality of intermodal containers in Post CPEC scenario, on the basis of recorded current situation of trade and intermodal containers resource in Pakistan.

This descriptive qualitative research mainly answers “What is going on in Intermodal Containers Sector of Pakistan?” We mainly relied on Focus group and analysis of archival records to answer this question. Lead researcher had conducted a Focus group with key representatives of All Pakistan Shipping Association (APSA) at their central office (Please See Annexure 1). Before Focus group, a detailed review of archival records (including but not limited to) minutes of meetings, annual reports, articles, websites, news articles, press releases etc. was conducted. This review helped us in identifying major stakeholders in Intermodal Containers sectors and in mapping their relationships.

A blend of archival record analysis and Focus group was chosen as it helped us a lot in understanding how major stakeholders think and provide deeper understanding of this phenomenon. There are several research strategies that can be employed to answer a descriptive question like the one that we have. One such strategy is Survey that generally poses respondents to closed ended questions. This well-known research strategy has one important drawback that it limits the detailed feedback that can be gained from respondents. Another method that can potentially supplement archival record analysis and surveys is interviews. But conducting interviews was found quite expensive proposition exceeding the available resources. Therefore, group interview—i.e., Focus group (Krueger and Casey, 2009) gave us the opportunity to capture detailed information on intermodal containers sector of Pakistan more economically than individual interviews. Apart from economy, group interaction was another important benefit of focus group. Secondary data on intermodal containers in Pakistan is virtually non-existent. Therefore, group interaction with representatives of APSA gave us the opportunity to several key statistics and information.

Focus group was conducted for around two hours with APSA managing committee that consisted of members of executive council and industry representatives. Total of five person’s focus group was held at central office of APSA. Membership of APSA consists of shipping agents, consultants, chandlers, surveyors and consolidators among other entities. APSA has its representation on Pilotage Authority and also provides a commissioner for the Port Authority. Complying with advice of Krueger and Casey (2009), every effort was made to avoid dichotomous—i.e., Yes/No and right/wrong questions. Moreover, open-ended and think back questions were more emphasized. Serendipitous questions were posed towards the end.

4. Results Analysis

According to information retrieved from focus group and archival material, the containers sector in Pakistan involves variety of stakeholders. The key stakeholders to mention here include: Port authorities, Container handling companies, Shipping services providers, Hinterland transporters, Freight forwarding agencies and Inland Container depot service providers.

Karachi International Container Terminal (KICT), Pakistan International Container Terminal (PICT), DP World Karachi (DP World), South Asia Pakistan Terminal (SAPT) and Gawadar Internationals Limited (GIT), handle containers at Karachi port, Gawadar port and port Qasim in Karachi (Marine Group of Companies) (Please See Exhibit 1). The four categories of the government bodies that involve intermodal transport network are (1) Sea- Karachi port trust, Port Qasim Authority and Gawadar Port Authority, (2) Road- National Highway Authority, (3) Railway- Pakistan Railway and (4) Air- Civil Aviation Authority.

Table 1 Container Handling Firms at Gawadar, Karachi and Qasim Ports in Pakistan

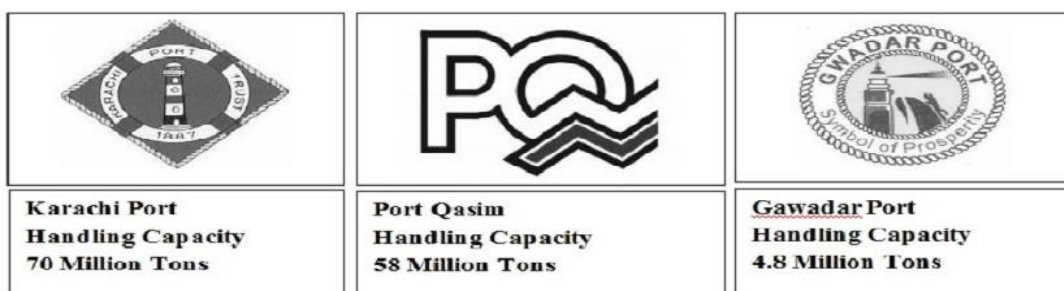
Type of Company	Container Handling Capacity (TEUs)
KICT	1,000,000
PICT	750,000
DP World	850,000
SAPT	1,000,000
Total	3,600,000

Note: Gawadar International Limited is not yet fully operational and carries handling capacity of 500,000 TEUs.

This is in addition to the variety of firms involved in intermodal service infrastructure. Following constitutes the detail of these firms under various functional headings:

- I. **Port services:** Pakistan International Container Terminal (PICT), Premier Mercantile Services (Pvt.) Ltd (PMS) and Pakistan International Bulk Terminal (Pvt.) Ltd (PIBT).
- II. **Shipping services:** Portlink International Services (Pvt.) Ltd (PIS).
- III. **Hinterland Transport:** Pakistan Intermodal limited (PIL) handle freight train and Marine Logistics (Private) Limited (MLPL) handle road transport.
- IV. **Freight forwarding:** AMI Pakistan (Pvt.) Ltd (AMI).
- V. **Inland container depot services:** Marine International Container Terminal (Pvt.) Limited (MICT)

Pakistan has three main ports– Karachi, Port Qasim, and Gawadar. However the Gawadar is under construction but it is operational to some extent. The total handling capacity of these Ports is estimated at about 133 million tons, but investment in expansion is already under way.

**Figure 1** Port Handling Capacity

ISO 6346 standard classifies a broad spectrum of container types with their specifications and attributes. Presently, the container type being used in Pakistan is the twenty foot equivalent Units chamber. A twenty-foot equivalent unit is a measure of containerized cargo capacity equal to one standard 20 foot (length) × 8 foot (width) × 8 foot in (height) container.

Information obtained through focus group and archival records shows that aside from different size options, the most important container types used in Pakistan are General-purpose dry vans, for boxes, cartons, cases, sacks, bales, pallets, drums, etc. So the containers in use in Pakistan are also classified in terms of their special interior layouts such as:

- Rolling-floor containers, for difficult-to-handle cargo
- Garmentainers, for shipping garments on hangers (GOH)
- Ventilated containers. Essentially dry vans, but either passively or actively ventilated. For instance for organic products requiring ventilation
- Temperature controlled – either insulated, refrigerated, and/or heated containers, for perishable goods
- Tank containers, for liquids or gases. Frequently these are dangerous goods, and in the case of gases one shipping unit may contain multiple gas bottles
- Bulk containers (sometimes bulkainers), either closed models with roof-lids, or hard or soft open-top units for top loading, for instance for bulk minerals. Containerized coal carriers and "bin-liners" (containers designed for the efficient road and rail transportation of rubbish from cities to recycling and dump sites) are used in Europe.
- Open-top and open-side containers, for instance for easy loading of heavy machinery or oversize pallets. Open sides are also used for ventilating hardy perishables like apples or potatoes.

Platform based containers such as:

- Flat-rack and bolster containers, for barrels, drums, crates, and any heavy or bulky out-of-gauge cargo, like machinery, semi-finished goods or processed timber. Empty flat-racks can either be stacked or shipped sideways in another ISO container
- Collapsible containers, ranging from flush folding flat-racks to fully closed ISO and CSC certified units with roof and walls when erected.
- Containers for Offshore use have a few different features, like pad eyes, and must meet additional strength and design requirements, standards and certification, such as the DNV2.7-1 by Det Norske Veritas and the European standard EN12079: Offshore Containers and Associated Lifting Sets.
- A multitude of equipment, such as generators, has been installed in containers of different types.

The rising importance of intermodal containers in Pakistan: In recent years, economic corridors have emerged as an important tool of regional cooperation and development in a globalized world. Following the experience of regional economic integration through a network of transnational economic corridors in the Greater Mekong Sub-region (GMS), similar initiatives are now being promoted in different parts of Asia to accelerate economic growth by linking backward regions with more developed industrial centers and to improve access to markets through the integration of trans-border production networks (Ranjan, 2015). By 1979, the power center had shifted in China and the Chinese economy was opening up under the new leadership of Deng Xiaoping. Deng's main plank—i.e., the economic relation precedes all other forms of relationship—changed the dynamics of Chinese foreign policy, which shifted closer to Pakistan. By the 1980s, China had become the most trusted ally of Pakistan (Kayani et al., 2013). The relationships between the two countries became stronger and stronger which resulted in the enhanced trade which was \$1 billion in 1998, and after FTA in year of 2006 the trade eventually reached \$15.5 billion. So, this enhanced cooperation laid the foundation of China-Pakistan economic corridor (VANDEWALLE, 2015).

In order to understand the significance of the CPEC and Intermodalism, the trade volume before the CPEC and when the CPEC is operationalized will have be considered. Not only the total trade of Pakistan is continuously growing (Please See Table 2) but a little fluctuation in the trend is also being observed. Moreover, it is forecasted that the exports of Pakistan will rise to \$76 Billion by 2025 from the current level of approximately \$25 Billion (Pakistan vision 2025, and SBP annual report 2014, 2015).

Careful review of archival material shows the solid economic relationships between Pakistan and China evident from multiple free trade agreements and \$ 48 Billion projects relating CPEC. The total trade volume between the two reached to \$15.15 billion marking an annual growth of 12.57% in 2015 from \$1 billion in 1998. Further both the governments have plans to increase the trade up to \$18 billion till 2018. The trade will grow by 24% with china after the CPEC is being functional (Salman, 2015).

Most important here is transit trade (the trade which arises from the passage of goods through one country or region to another). As suggested by one member of focus group “although the exact monetary forecasts are not yet available but a good guestimate suggests an exponential rise in transit trade via Pakistan once the CPEC gets functional. For several economic and political reasons, Pakistan is going to replace Hong Kong as an entrepôt to China.” Declining trends are already there, in the past few decades the china physical goods export was high through Hong Kong but it is gradually declining with the passage of time. In 2012, for instance, while the Mainland's exports expanded by 28% year-on-year, Hong Kong's re-export growth was only 12%. At Hong Kong's container ports, there has also been a sharp slowdown of throughput growth - from 8% in 2002 to only 2% in 2012. According to the HKSAR government statistics, in 2015, 61% of re-exports were of China origin” (Hong Kong Trade Development Council, 2007 and 2016).

Table 2 Trade Volume of Pakistan (2011-2016)

Year	Exports	Imports	Balance of Trade	(Million Rupees)
				Total volume
2011-2012	2,110,605.5	4,009,093.0	(1898487.5)	6119698.5
2012-2013	2,366,477.8	4,349,879.5	(1983401.7)	6716357.3
2013-2014	2,583,463.2	4,630,520.8	(2047057.6)	7213984.0
2014-2015	2,397,513.0	4,644,151.6	(2246638.6)	7041665.4
2015-2016	2,433,471.6	4,865,174.0	(2431702.4)	7298645.6

Source: SBP annual reports (2014, 2015).

Our focus group participants suggested that another factor that will contribute to the rise in transit trade through Pakistan is China's oil needs being fulfilled through CPEC. Over 40% of the world's oil is extracted from the Gulf region and Persian Gulf is used for its transportation. By linking Kashghar region in Western China with Gawadar in Southwest of Pakistan, China will reap number of economic and political benefits in terms of oil trade.

Our focus group discussion also revealed that, of the two major transit trade categories of Pakistan—i.e., CIS (Commonwealth of Independent States) and ECO (Economic Cooperation Organization)—where CIS transit has the capacity to transport 24.19 million tons while ECO transit has the capacity to handle and transport 74.09 million tons, will be routed through Pakistan. All these factors combined together will lead to exponential rise in transit trade and more use and handling capacity of intermodal containers.

As discussed above, the trade of Pakistan in pre CPEC era was less and it will remarkably grow once CPEC is fully functional. Our focus group discussion is in line with the forecasts that exports will exponentially grow in post CPEC era to reach \$76 Billion implying that they will be three times the exports today. Similarly the imports will increase in some proportion but the guestimates are not yet available (Pakistan vision, 2025). The trade with China alone, excluding transit trade, is expected to increase by 24%. Therefore, imports, exports and transit trade will

exponentially grow and Pakistan would need approximately three times more intermodal containers of what it possess today.

Our focus group also revealed that “Total national container capacity of Pakistan is currently about 3.6 million Twenty-foot-equivalent units (TEUs), but this is likely to grow to about 10 million TEUs in the next five to ten years”. Moreover, focus group elaborated that although the intermodal containers capacity is increased yearly to meet the need, but with construction of Gawadar, Pakistan’s overall total national container handling capacity will grow sharply.

Presently, Pakistan offers twenty foot equivalent units’ capacity intermodal containers. One of the focus group participant suggested that “there are several high quality intermodal containers available with different sizes—e.g., 40, 45, 48 and 53 feet high cube containers with added features—e.g., temperature control mechanism, ventilation, shock absorption, water proofing etc. that are being used in developed countries.” These containers are also useful in multimodality and their demand is expected to rise in post CPEC era.

Summing it up, Pakistan will be playing role of bridge in South Asia for the transit trade. Also Pakistan is also signatory to several regional, free and preferential trade agreements. Resultantly, the country’s trade will grow sizably creating logistics crunch as available quantity and quantity of intermodal containers is sufficient to meet the future trade volumes. It is therefore, recommended, that government should immediately involve major stakeholders and prevent any crises to emerge. We also recommend that a detailed feasibility study should be conducted to analyze the prospects of domestic production of intermodal containers. As informed by our focus group there is no intermodal production facility currently existing in Pakistan. High in unemployment and short in foreign direct investment, this country can benefit from installation of such facility.

5. Conclusion

Intermodal containers are largely neglected area in extant literature on logistics. This study contributes to the literature by highlighting the significance of intermodal containers particularly in context of Pakistan. This sixth most populous country that is seen as one of world’s biggest consumer market is replacing Hong Kong as an entrepôt to China. In post China Pakistan Economic Corridor era, transit trade is expected to exponentially grow putting immense pressure on already weak intermodal sector of the country. To understand the state of intermodal containers sector, we collected and analyzed data that is collected from focus group and a variety of archival records. Our analysis suggests that the quantity and quality of the intermodal containers is not sufficient to fulfill the exponentially rising trade needs.

Acknowledgements

We are thankful to officials and members of All Pakistan Shipping Association for their support.

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Appendix

Focus Group Participants

1. Chairman, Executive Council, APSA
2. Senior Vice Chairman, APSA
3. Vice Chairman, APSA
4. Representative, Pakistan International Container Terminal (Ltd).
5. Representative, Pakistan Shaheen Container Services.
6. Lead Author

Focus Group Questionnaire

- 1) How do you see the regional trade changing?
- 2) How Pakistan China relationships may evolve in terms of trade?
- 3) Who are major stakeholders of shipping industry?
What are existing shipping related facilities?
How they are being upgraded?
What is the capacity of each of these facilities?
- 4) Why Containers are growing important?
What is the current amount of intermodal containers?
- 5) How CPEC would affect the intermodal containers?
What is it expected in the future to increase?
- 6) Which kind of intermodal containers are operated in our country?
- 7) Are these suited to the need of the transportation?
- 8) Are these produced within country or bought from abroad?
Is it expected that the Intermodal Containers shall be produced within Pakistan?
- 9) How much work has been done on intermodal containers to fulfill the future need when the CPEC is functional?
- 10) Does the intermodal containers sector has the capacity to manage the trade when CPEC is fully functional?
- 11) How intermodal containers would affect GDP of the country?

Organizational Citizenship Behavior (OCB) Practices among the University Teachers: Bangladesh Perspective

by

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IJMBE International Journal of
Management, Business, and Economics

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Abstract

Organizational citizenship behavior (OCB) is crucial for university teachers to understand the key dimensions that significantly and positively aid in creating the favorable behavior within the organization. However, few comprehensive studies have shown how OCB can be practiced among the university teachers in Bangladesh. The purpose of this study was to examine the OCB practices among university teachers in Bangladesh considering altruism, courtesy, conscientiousness, sportsmanship and civic virtue etc. In this research, the structural questionnaire was used for primary data that includes five dimensions on OCB. The study also uses secondary data for theoretical development of the paper. For finding the result, the necessary statistical measures include 5 point Likert scale, mean, and rank are used in this study. The research results show that the OCB practices among the university teachers are not enough satisfactory level. Under altruism the respondents were found to have the highest scale of OCB practices regarding the statement: “I talk to other colleagues before taking actions that might affect them” (1.89); under Courtesy, the statement was “I try to adjust the work schedule to other colleagues’ requests for time off” (2.13); under Conscientiousness the statement was “I spend extra time to help my students for preparing a presentation or paper” (1.91); under Sportsmanship the statement was “I always say good things about my colleagues in front of others” (1.86); under Civic Virtue the statement was “I attend actively in different events or picnic arranged by the organization” (1.56). The study concluded that organizational citizenship behavior is pivotal factor for enhancing teaching performance.

Keywords: Organizational Citizenship Behavior, University Teacher

1. Introduction

In today’s cutthroat competitive world, non-tasks behaviors (OCBs) are one of significant factors for organizational survival. Those organizations are more successful whose employees perform duties beyond their formal contract. These altruistic acts are not part of any formal contract and have no any reward for this, yet, these acts are essential for smooth functioning of organizations to enhance effectiveness (Bidwell, 1965). Therefore, today’s the concept OCB practice in teaching profession (Izhar Oplatka, (2009) refers to all helping behaviors extended to colleagues, supervisors, and students, such as lending a colleague a hand with work overload or preparing special assignments for higher and lower level students; and extended to the university at large, such as suggesting improvements in pedagogical issues or building a positive image to outsiders.

Organizational citizenship behavior (OCB) was first introduced by (Organ, 1988) and he defined OCB as an employee's discretionary behaviors that directly promote the effective functioning of an organization, independently of an employee's objective productivity. Moreover, Katz and Kahn (1978) pointed out that OCB is an ethical and self-justification tool that can play an important role in any organizations. In the words of (Somech & Drach-Zahavy, 2000) OCBs are those behaviors that go beyond specified role requirements and are directed toward the organization as a unit, the team, and the individual, to promote organizational goals. This definition of teachers' OCBs practice emphasizes three main features of extra-role behavior (ERB). First, the behavior must be voluntary, that is, neither role-prescribed nor part of formal job duties. Second, the focus is on behaviors that do not simply happen in an organization but are directed toward or seen as benefiting the organization (Van Dyne, Cummings, & Parks, 1995). Third, by this definition, OCBs are multidimensional by nature. Although most scholars agree on the multidimensionality of this construct, a review of the literature reveals a lack of consensus about its dimensionality.

This study adopted the five-dimension construct of Organ (1988), which was developed specifically for the context of university teaching. The five dimensions are (a) Altruism (helping new colleagues and freely giving time to others), (b) Conscientiousness (efficient use of time and going beyond minimum expectations), (c) Sportsmanship (avoids complaining and whining), Courtesy (advance notices, reminders, and communicating appropriate information), Civic Virtue (serving on committees and voluntarily attending functions) promotes the interests of the organization.

Practicing OCBs among the university teachers are essential because only university cannot anticipate the entire array of behaviors needed for achieving goals through formally stated in-role job descriptions (George & Brief, 1992). Moreover, today, as educational systems move into an era of globalization and are required to work in a competitive and complex environment (Bruce Macfarlane, 2007), the success of university mainly lean on teachers who are committed to university goals and values (Oplatka, 2006; Somech & Ron, 2007) and are more willing to go above and beyond the call of duty to contribute to successful change, that is, to engage in such OCBs. In addition, teachers can contribute to enhance university effectiveness though performing in-role behavior along with extra-role behavior. In this case, Burden (1982) state that OCBs consist of positive types of behavior that are not part of the formal job description, OCBs should be limited to ERBs and be distinguished from IRBs. This distinction is meant to draw a line between the types of "behaviors which are required or expected as part of performing the duties and responsibilities of the assigned role" (IRB) (VanDyne et al., 1995) and the types of behavior that go beyond the formal contract (ERB). In summary, OCBs as psychological issues are difficult to measure empirically because they are not stable, hard to quantify, and defined variously by different people (Bruce Macfarlane, 2007)

Objectives of the Study

The main objective of this paper was to investigate the practice of OCBs among the university teachers in Bangladesh. However, the most concrete directions covered in this study are:

1. To describe concept of Organizational Citizenship Behaviors (OCBs)
2. To describe the dimensions of Organizational Citizenship Behaviors (OCBs).
3. To know the perceptions of teachers about OCB practices
4. To investigate the tendency of university teachers about OCB practices
5. To provide some relevant suggestions on the basis of findings of the study.

Research Questions

To address the above stated research objectives, the following research questions are kept in mind throughout this study:

1. What is the latest definition of OCBs?
2. What are the best dimensions of Organizational Citizenship Behaviors (OCBs)?
3. What are the teachers' perceptions about OCBs in university level?
4. What are the behavior patterns with the working environment of the university teachers?
5. How to make OCB effective and why?

Statement of the Problem

As a university teacher and researcher, I have personally observed the fewer application of OCB among the teachers who are working in different universities in Bangladesh. Lately, we have around 140+ universities included both private and public according to the University Grand Commission (UGC) Website in our country. Moreover, as the universities are keeping a pivotal role in higher education, it should be required a strong OCB practices among the teachers to assure a safe and sound academic environment for learning and creating a pool of talent with the global demand. But it is a matter of regret that, most of the universities' teachers are not concern enough to apply the five dimensions of OCB in their academia profession such as altruism (helping new colleagues and freely giving time to others), courtesy (advance notices, reminders, and communicating appropriate information), conscientiousness (efficient use of time and going beyond minimum expectations), sportsmanship (avoids complaining and whining) and civic virtue (serving on committees and voluntarily attending functions). As a result, the learning environment of university is getting hampered due to less application of OCB.

Consequent of this situation, this study was conducted to examine the OCB practices among the university teachers in Bangladesh considering the five dimensions of OCB such as altruism, courtesy, conscientiousness, sportsmanship and civic virtue etc. for assuring effective learning environment.

2. Literature Review

Definition of Organizational Citizenship Behavior

Organizational Citizenship Behaviors (OCBs) are those discretionary behaviors that employees are willing to exhibit without expecting any kind of reward in return (Raghoebarsing, 2011). It is one of the most important concepts in organizational effectiveness and efficiency on quality and productivity (Corcoran, 1981). In the word of (Organ 1988), OCB is defined as work-related behaviors that are discretionary, not related to the formal organizational reward system, and, in aggregate, promote the effective functioning of the organization. In addition, in the words of (Farahbod, Azadehdel, Rezaei, Nezhadi, 2012), OCB extends beyond the performance indicators required by an organization in a formal job description. Moreover, according to (Lovell, Kahn, Anton, Davidson, Dowling, et al., 1999) OCB reflects those actions performed by employees that surpass the minimum role requirements expected by the organization and promote the welfare of co-workers, work groups, and/or the organization. In this regard, Williams and Anderson (1991) argue that OCB is into two types: (1) behaviors directed at specific individuals in the organization, such as courtesy and altruism; and (2) behaviors concerned with benefiting the organization as a whole, such as conscientiousness, sportsmanship and civic virtue. In view of (DiPaola. et al, 2005) OCBs include some behaviors which are not imposed or stated in the job description of an employee, the behavior

is relatively a matter of individual choice, such that its negligence is not commonly penalized. OCBs are usually beneficial organizational behaviors that cannot be enforced upon employees as obligations nor acquired by rewards or recompense from employees' gestures in the organization (Oplatka and Stundi, 2010).

It is recommended by Oplatka (2006) that employee who perform OCB are willing to do extra tasks and do not expect anything from their organizations, yet they will be happy by the progress of their organization for instance punctuality, employees' volunteering for activities that are not required helping others etc. (Magdalena, 2014)). Sevi, E., (2010) inform that OCB has a positively relationship with the effective functioning of an organization. Magdalena (2014) considers that OCBs are originally defined as extra work behaviors that are not listed among the traditional job performance measures which overly affect organizational success in the long run. According to O'Connor (2008), there are three types of citizenship behaviors in the organization: organizational obedience, organizational loyalty, and organizational participation. OCB is defined by Daniels *et al.*, (2006) as extra behavior of doing tasks in work place other than routine employee tasks. OCB helps organization to increase its performance in long run as compared to short term. Ras, (2015) in his study identified that OCB helps to encourage the employees to apply their maximum knowledge, skill and abilities in workplace which is closely related to achieve organizational goals effectively and efficiently.

Key Dimensions of OCB

Altruism

Altruism in simple words means helping or helpfulness (Organ, 1997). Altruism means helping other members of the organization in their tasks. For instance, voluntarily helping new employees, helping co-workers who are overloaded, assisting workers who were absent, guiding employees to accomplish difficult tasks et al. Smith, Organ, and Near (1983) defined altruism as voluntary behaviors where an employee provides assistance to an individual with a particular problem to complete his or her task under unusual circumstances. In the words of Podsakoff et al. (1997), altruism refers to a member helping other members of the organization in their work. Podsakoff et al. (2000) has demonstrated that altruism was significantly related to performance evaluations and correspondingly, positive affectivity.

Conscientiousness

Conscientiousness is a discretionary behavior that goes well beyond the minimum role requirement level of the organization, such as obeying rules and regulations, not taking extra breaks, working extra-long days (MacKenzie et al, 2006). According to Organ et al. 2011), conscientiousness is a prototype of going well beyond minimally required levels of attendance, punctuality, and housekeeping, penchant towards conserving resources, and overall giving an impression of being a responsible citizen of the organization. If the employee is highly conscientious it implies that he is highly responsible and needs less supervision (Podsakoff and MacKenzie, 1997). In the word of Organ, et al. (2006), conscientiousness is used to indicate that a particular individual is organized, self-disciplined, accountable and hardworking. O'Reilly & Chatman (1986) defined it as dedication to the job which exceed formal requirements such as working long hours, and volunteer to perform jobs besides duties.

Sportsmanship

Sportsmanship is defined as a willingness to tolerate the inevitable inconveniences and impositions of work without complaining (Organ, 1990). It refers to person's desire not to complain when experiencing the inevitable inconveniences and abuse generated in exercising a professional activity. Morrison (1994) state that sportsmanship refers to avoid complaining unnecessarily about the difficulties faced in the workplace, being positive and tolerant towards problems experienced in the workplace. In the word of (DiPaola, et al. 2001) sportsmanship is exhibition of willingness to tolerate minor and temporary personnel inconveniences and impositions of work without grievances, complaints, appeals, accusations, or protest. This helps to conserve organizational energies for accomplishment of task and to a large extent relieves managers of unnecessary load/stress (Organ and Ryan, 1995, Organ, 1990). Organ (1988) defined sportsmanship as the behavior of warmly tolerating the irritations that are an unavoidable part of nearly every organizational setting. Podsakoff and MacKenzie (1997) publicized that good sportsmanship would enhance the morale of the employees at the workplace and consequently reduce employee turnover.

Courtesy

Courtesy refers to the gestures that help others to prevent interpersonal problems from occurring, such as giving prior notice of the work schedule to someone who is in need, consulting others before taking any actions that would affect them (Organ, 1990). Courtesy or gestures are demonstrated in the interest of preventing creations of problems for co-workers such as leaving the copier or printer in good condition for other workers' use is an example of courtesy at work (Organ, Podsakoff, & MacKenzie, 2006). A courteous employee prevents managers from falling into the pattern of crisis management by making a since effort to avoid creating problems for co-workers (Podsakoff and MacKenzie, 1997). According to Belogolovsky and Somech (2010), courtesy includes behaviors, which focus on the deterrence of problems and taking the necessary and timely steps in order to lessen the effects of the problem in the future. In simple words, Bogler & Somech, (2005), state that courtesy means the encouragement given by a member to other member/s of the organization when they are demoralized and feel discouraged about their professional development. Research has shown that employees who exhibit courtesy would reduce inter group conflict and thereby abating the time spent on conflict management activities (Podsakoff et al., 2000). The main idea of courtesy is avoiding actions that unnecessarily make colleagues' work harder. It also includes giving them enough notice to get prepared when there is an addition to their existing work load.

Civic virtue

Civic virtue refers to the constructive involvement in the political process of the organization and contribution to this process by freely and frankly expressing opinions, attending meetings, discussing with colleagues the issues concerning the organization, and reading organizational communications such as mails for the well-being of the organization (Podsakoff et al, 1990). It shows willingness to participate actively in organization's events, monitor organization's environment for threats and opportunities, to work out the best alternative for the organization. These behaviors occur when employees reckon themselves with the organization and consider themselves to be part of the organization. (Podsakoff et al, 2000). In other word civic virtue is defined as subordinate participation in organization political life and supporting the administrative function of the organization (Vey & Campbell, 2004). Civic virtue refers to the responsibility of the employees to actively and willingly participate in the life of the firm such as attending meetings which are not required by the firm and keeping apprised with the changes in the organization (Organ, 1988). These behaviors reflect an employees' recognition of being part of organization and accept the

responsibilities which entail as a result of being citizen of the organization (Podsakoff et al., 2000). Other researchers have found that civic virtue enhances the quantity of performance and help to reduce customer complaints (Walz & Niehoff, 1996).

3. Research Methodology

Materials and Methods

Research Design

Exploratory research design was used for the study. The design was intended to give a fair description of the variables under study using descriptive statistic.

Sample Size

Data for this study was collected from 173 teachers working in 15 renowned universities in Bangladesh. The questionnaires regarding the OCB were personally handed to teachers after personal communication concerning the topic and the goals of the study.

Survey instrument

The five dimensions of OCB was used in this study proposed by Organ (1988) since some researchers have acknowledged this five dimensions are the most widely used dimensions in organizational related studies (Gonzalez & Garazo, 2006). The total 38 items were used to determine the level of citizenship behaviors among university teachers based on five main dimensions. Likert-scale was used to measure the OCB elements ranged from 1 (strongly disagree) to 5 (strongly agree).

4. Results Analysis

Demographic figure of the respondents

In the questionnaires, there was a section of respondents' profile which helped us to get a general notion about the respondents' gender, age, material status, designation and job experience etc. A profile of respondents is presented in the following table.

Table 1 Demographic Figure of the Respondents

Particulars	Frequency	Percentage
Gender		
Male	122	70.5
Female	51	29.5
Total	173	100.0
Age		
25-35	105	60.7
35-45	46	26.6
45-55	22	12.7
Total	173	100.0

Marital status		
Single	99	57.2
Married	74	42.8
Total	173	100.0
Designation		
Lecturer	105	60.7
Assistant professor	28	16.2
Associate professor	23	13.3
Professor	17	9.8
Total	173	100.0
Job experience		
Less than one year	21	12.1
1-3	85	49.1
3-10	50	28.9
Above 10 years	17	9.8
Total	173	100.0

Source: Field Survey

The above table shows the demographic figure of the respondents. It shows that most of them were male (70.5%) and other were female, most of them were found in the age of 25-35 years (60.7%), a large amount of the respondents was in the position of lecturer (60.7%) and about half of the respondent were having the job experience of 1 to 3 years (49.1%)

Descriptive Statistics

In this study the descriptive statistics such as means, standard deviation, frequency and percentages etc was done to process and analyze the collected data for finding the best possible results.

Table 2 Descriptive Statistics

Particulars	Mean	Std. Deviation
A. Altruism (helping new colleagues and freely giving time to others)		
I give time to help colleagues with work related problems.	1.9075	.81598
I support colleagues who have problems at work.	1.9306	1.19876
I take time out of my day to help my new colleagues.	2.3121	1.34498
I talk to other colleagues before taking actions that might affect them.	1.8960	1.17663
I share my knowledge and expertise with other colleagues	2.0636	1.06285
I highly welcome and assist my new colleagues in my organization.	2.1908	1.21690
I help my new colleagues get oriented to the job.	2.3815	1.18817
I give time to advice, coach, or mentor to my colleagues.	2.1098	1.29604
B. Conscientiousness (efficient use of time and going beyond		

minimum expectations)		
I always try to spend extra time for my organization's benefit	2.2832	1.24153
I am punctual and attentive to my work	2.3353	1.35233
I come in early or stay late without pays to complete my task.	2.2486	1.23964
I am enthusiastic person to complete my office's extra work and assignments	2.2428	1.41792
I work weekends or other days off to complete my task.	2.5260	1.27392
I spend extra time to help my students for preparing a presentation or paper	1.9133	1.20488
I do not take unnecessary time off work and extra breaks.	2.3064	1.23600
I always obey organization's rules and regulations even when no one is watching	2.2139	1.31866
C. Sportsmanship (avoids complaining and whining)		
I sometimes tolerate the irritations of others as an unavoidable part of my organizational setting	2.3699	1.29022
I usually do not complain when experiencing the inevitable inconveniences and abuses generated in exercising a professional activity	2.1156	1.19516
I usually do not complain unnecessarily against my co-worker about the work difficulties	2.2081	1.27249
I help my colleagues to learn new skills or share job knowledge	2.0694	1.17426
I always tolerate minor and temporary personnel inconveniences and impositions of work without grievances, complaints, appeals, accusations, or protest.	2.2659	1.29347
I avoid consuming a lot of time complaining about trivial matters	2.1965	1.34536
I always show a compassionate ear when someone in a personal and work problem.	2.2312	1.31351
I always say good things about my colleagues in front of others.	1.8613	1.00195
D. Courtesy (advance notices, reminders, and communicating appropriate information)		
I try to avoid creating problems for colleagues	2.2775	1.18783
I try to help my colleagues when they are absent in organization	2.3006	1.39844
I do not like to talk any negative that can hurt my colleagues	2.4913	1.26958
I discuss with my colleagues before taking actions against others.	2.1387	1.33092
I encourage my colleagues when they are down.	2.3642	1.34263
I am always ready when any of my colleagues need someone to speak out their problem.	2.2254	1.30341
I try to adjust the work schedule to other colleagues' requests for time off.	2.1329	1.15119
E. Civic Virtue (serving on committees and voluntarily attending functions)		
I attend training sessions that I am encouraged to, but not required to attend.	2.2717	1.19162
I always tell outsiders good news about the organization	2.1965	1.08724
I am willing to stand up to protect the reputation of the organization	2.1850	1.15154

I attend and actively participate in company meetings	2.2486	1.28115
I am strongly committed to work in my organization	2.1387	1.39907
I attend functions that are not required but help the company's image	2.3584	1.20508
I attend actively in different events or picnic arranged by the organization	1.5665	.89080
Valid N (listwise)		

Note: The scale is: 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree

The above table shows the descriptive statistics of the respondents' tendencies to practice in the organization.

Under altruism the respondents were found to have the highest scale of organizational citizenship behavior practices regarding the following statements: I talk to other colleagues before taking actions that might affect them (1.89); I give time to help colleagues with work related problems (1.9); I support colleagues who have problems at work (1.93) and the scales regarding the rest of the statements of altruism are given in the table.

Under Conscientiousness the respondents were found to have the highest scale of organizational citizenship behavior practices regarding the following statements: I spend extra time to help my students for preparing a presentation or paper (1.91); I always obey organization's rules and regulations even when no one is watching (2.21); I am enthusiastic person to complete my office's extra work and assignments (2.24) and the scales regarding the rest of the statements of Conscientiousness are given in the table.

Under Sportsmanship the respondents were found to have the highest scale of organizational citizenship behavior practices regarding the following statements: I always say good things about my colleagues in front of others.(1.86); I help my colleagues to learn new skills or share job knowledge (2.06); I usually do not complain when experiencing the inevitable inconveniences and abuses generated in exercising a professional activity (2.11) and the scales regarding the rest of the statements of sportsmanship are given in the table.

Under Courtesy the respondents were found to have the highest scale of organizational citizenship behavior practices regarding the following statements: I try to adjust the work schedule to other colleagues' requests for time off. (2.13); I discuss with my colleagues before taking actions against others. (2.14); I am always ready when any of my colleagues need someone to speak out their problem. (2.22) and the scales regarding the rest of the statements of Courtesy are given in the table.

Under Civic Virtue the respondents were found to have the highest scale of organizational citizenship behavior practices regarding the following statements: I attend actively in different events or picnic arranged by the organization (1.56); I am strongly committed to work in my organization (2.14); I am willing to stand up to protect the reputation of the organization (2.18) and the scales regarding the rest of the statements of Civic Virtue are given in the table.

5. Conclusion and Recommendation

The objective of study was to investigate the OCB practices among the university teachers in Bangladesh. In this study, five dimensions of OCBs have been considered, suggested by the Organ (1988) to investigate OCB practices among the university teachers. The study reveals that all OCB dimensions were not exercised in the academia profession in Bangladesh. Most of the university teachers are reluctant to carry on their extra works for the advancement of academic learning environment. It is obvious that OCB practices in the teaching area of Bangladesh has not been developed now and there is the pressing need to create awareness among university teachers to establish OCB practice with fairly for ensuring an efficient and effective learning environment. The following recommendations can be suggested for establishing perfect OCB practices among the university teachers in Bangladesh.

1. The teachers can acquire lucid knowledge on organizational citizenship behavior to assure its unanimous application for the betterment of learning environment.
2. The university can inspire to the teachers for being more reliable in their daily tasks by practicing the main essence of altruism, conscientiousness, sportsmanship, curtesy and civic value.
3. Both the university and teachers can ensure a good participation in the OCB practice to bring balance learning in the academic environment.
4. In altruism, teachers can be more co-operative to others being more reliable to work for maintaining conscientiousness. They can avoid complaining and whining as being sportsmanship. In addition to, they can show the greater curtesy in communication and information dissemination to acquire a good civic virtue by doing voluntary functions.
5. Finally, the teachers should be spontaneous and clear hearted individual for practicing altruism, conscientiousness, sportsmanship, curtesy and civic virtue.

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Research Questionnaire

Part I: Necessary Information, please (✓)

1. Gender: • Male • Female
2. Age: • 25-35 • 35-45 • 45-55
3. Marital Status: • Single • Married
4. Professional Status: • Lecturer • Assistant professor
 • Associate professor • Professor
5. Job Duration: • less than 1 year • 01 to 3 years • 3 to 10 years
 • More than 10 years

Part II. Organizational Citizenship Behavior Checklist (OCB-C) 38-Items

1= Strongly Disagree	2= Disagree	3= Neutral	4 = Agree	5= Strongly Agree
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A. Altruism (helping new colleagues and freely giving time to others)					
1. I give time to help colleagues with work related problems.	1	2	3	4	5
2. I support colleagues who have problems at work.	1	2	3	4	5
3. I take time out of my day to help my new colleagues.	1	2	3	4	5
4. I talk to other colleagues before taking actions that might affect them.	1	2	3	4	5
5. I share my knowledge and expertise with other colleagues	1	2	3	4	5
6. I highly welcome and assist my new colleagues in my organization.	1	2	3	4	5
7. I help my new colleagues get oriented to the job.	1	2	3	4	5
8. I give time to advice, coach, or mentor to my colleagues.	1	2	3	4	5
B. Conscientiousness (efficient use of time and going beyond minimum expectations)					
9. I always try to spend extra time for my organization's benefit	1	2	3	4	5
10. I am punctual and attentive to my work	1	2	3	4	5
11. I come in early or stay late without pays to complete my task.	1	2	3	4	5
12. I am enthusiastic person to complete my office's extra work and assignments	1	2	3	4	5
13. I work weekends or other days off to complete my task.	1	2	3	4	5
14. I spend extra time to help my students for preparing a presentation or paper	1	2	3	4	5
15. I do not take unnecessary time off work and extra breaks.	1	2	3	4	5

16. I always obey organization's rules and regulations even when no one is watching	1 2 3 4 5
C. Sportsmanship (avoids complaining and whining)	
17. I sometimes tolerate the irritations of others as an unavoidable part of my organizational setting	1 2 3 4 5
18. I usually do not complain when experiencing the inevitable inconveniences and abuses generated in exercising a professional activity	1 2 3 4 5
19. I usually do not complain unnecessarily against my co-worker about the work difficulties	1 2 3 4 5
20. I help my colleagues to learn new skills or share job knowledge	1 2 3 4 5
21. I always tolerate minor and temporary personnel inconveniences and impositions of work without grievances, complaints, appeals, accusations, or protest.	1 2 3 4 5
22. I avoid consuming a lot of time complaining about trivial matters	1 2 3 4 5
23. I always show a compassionate ear when someone in a personal and work problem.	1 2 3 4 5
24. I always say good things about my colleagues in front of others.	1 2 3 4 5
D. Courtesy (advance notices, reminders, and communicating appropriate information)	
25. I try to avoid creating problems for colleagues	1 2 3 4 5
26. I try to help my colleagues when they are absent in organization	1 2 3 4 5
27. I do not like to talk any negative that can hurt my colleagues	1 2 3 4 5
28. I discuss with my colleagues before taking actions against others.	1 2 3 4 5
29. I encourage my colleagues when they are down.	1 2 3 4 5
30. I am always ready when any of my colleagues need someone to speak out their problem.	1 2 3 4 5
31. I try to adjust the work schedule to other colleagues' requests for time off.	1 2 3 4 5
E. Civic Virtue (serving on committees and voluntarily attending functions)	
32. I attend training sessions that I am encouraged to, but not required to attend.	1 2 3 4 5
33. I always tell outsiders good news about the organization	1 2 3 4 5
34. I am willing to stand up to protect the reputation of the organization	1 2 3 4 5
35. I attend and actively participate in company meetings	1 2 3 4 5
36. I am strongly committed to work in my organization	1 2 3 4 5
37. I attend functions that are not required but help the company's image	1 2 3 4 5
38. I attend actively in different events or picnic arranged by the organization	1 2 3 4 5

**Management of Historic Site for Cultural Heritage Tourism:
A Case Study of Wat Rajabopit Sathitmahasimaram Rajaworavihara, Bangkok**

by

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IJMBE International Journal of
Management, Business, and Economics

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Abstract

This research aimed to review (1) the heritage values and cultural significance of Wat Rajabopit Sathitmahasimaram Rajaworavihara, and (2) the potential for cultural heritage tourism. Critical to the aims was the assumption of acknowledging the importance of promoting better understanding for tourists and community of the place, the associated role of conservation management plans, cooperation between the stakeholders, and appropriate interpretation and presentation of heritage resources. Wat Rajabopit Sathitmahasimaram Rajaworavihara is a valuable historic site that still maintains its cultural significance which is one important key factor to indicate why such place is worth conserving. The temple is located on the Rattanakosin island in Bangkok. It was built by King Chulalongkorn (King Rama V) in 1869 following the royal tradition that each monarch would have a temple marking his reign. This temple reflects the historical evidence of prosperity in architecture influenced by the west while Thai identity was not distorted. Its significances were identified and analyzed to understand its congenital values to the tourists and local residents of the place in terms of aesthetic, historic, social and scientific perspectives. These values support the notion of Wat Rajabopit Sathitmahasimaram Rajaworavihara sustaining its identity. However, there are no management plans to promote cultural heritage tourism and conserve cultural heritage significance in Wat Rajabopit Sathitmahasimaram Rajaworavihara today. There is, therefore, a need to provide better understanding of the temple's significance to tourists through the inception of management plans which will provide for tourism, conserve the significance of cultural heritage values, and also enhance community involvement as well as providing economic benefit. Proposed management plan for cultural heritage tourism at Wat Rajabopit and its communities is also proposed for creating sustainable tourism. Finally, Wat Rajabopit Sathitmahasimaram Rajaworavihara is encountering a number of problems threatening its significance including garbage, noise and air pollution, insufficient knowledge of conservation, and erecting tall buildings that block the view of historical temples. Therefore, the government, all members in the community and stakeholders are major participants for future actions to address those problems. In order to get achieve a stronghold of the community in the sustainable way. Wat Rajabopit Sathitmahasimaram Rajaworavihara has a very high potential for Cultural Heritage Tourism as well as Historical Tourism, because of its cultural heritage value.

Keywords: Cultural Heritage Tourism, Local Heritage, Management of Historic Site, Management Plan

1. Introduction

Bangkok, Thailand's capital, is a famous destination of cultural heritage tourism. Many cultural and historical resources in Bangkok such as religious buildings, museums and palaces are grabbed the interest from international visitors around the world. Wat Phrasirattana Sassadaram, or the temple of the Emerald Buddha, situated within the Grand Palace, is the most famous and important attraction site in Bangkok. This temple could be considered to be primary or "Icon" attraction that will bring tourists to Bangkok. Moreover, primary attraction sites can be also denoted as major sites of the first rank architecturally and their importance in cultural significance. Secondary attraction sites are appealed to tourists once they are already at a destination and are examined as the options or choices for their time. Secondary attraction sites also can be of considerable interest, definitely worth seeing if in town and worth half a day's travelling if outside the town. Wat Rajabopit is one of Buddhist temples in Bangkok which are considered as a secondary attraction site.

Wat Rajabopit Sathitmahasimaram Rajaworavihara (Wat Rajabopit) is located between Fuang Nakorn Road and Usadang Road. It is also near the Ministry of Interior. This temple was built by King Chulalongkorn in 1868 (B.E.2412) – the second year of his reign – when he was 17 years old. He wished to follow the ancient custom of his predecessors. This means it has been an ancient custom for a king to have a temple built during his reign. He also intended to erect new monasteries in compensation for the loss of the old ones which means he intended to bring prototype of temple's plan from Ayutthaya period back to his reign. King Rama V founded this monastery of the ancient Thai and European styles to be distinguished from others and dedicated it to the monks of the Dhammayut Order, the strict new sect, founded by his father, King Mongkut (King Rama IV). Thus, he gave the temple's name as "Wat Rajabopit" which means the temple is constructed by the king.

Wat Rajabopit does not have a very large compound. The temple is divided into 3 sections which are the ordination hall (Ubosot), chapel (Phra Viharn) and main stupa (Phra Chedi) in the north, the monk's living quarters in the south, and royal cemetery (the garden) in the west close to Usadang Road. The layout makes the principal stupa the focal point, with the ordination hall in the north, the chapel in the south, and two entrance ways in the east and west. All four buildings are connected by a circular gallery that encloses the terrace round the principal stupa. The whole group stands on the same platform raised to about one meter in height and enclosed within a low boundary wall. At the edges of the platform are found eight small pavilions.



Source: Panot Asawachai (2017)

Figure 1 Layout of Wat Rajabopit

Figure 1 illustrates the layout of Wat Rajabopit which the principle stupa is the focal point, the ordination hall in the north, the chapel in the south, and two entrance ways in the east and west. All four buildings are connected by a circular gallery that encloses the terrace round the principal stupa.

However, tourism at Wat Rajabopit is only operated by the monks who live at this temple. It has not been seriously boosted as cultural heritage tourist attraction. Nowadays, there is no any process to manage this historic site in order to support tourists as well as conserve the authenticity of the place and the community. According to there is no any mangement plan at this temple, it is caused the negative impacts such as environmental problems and insufficient knowledge of conservation of historic site. Therefore, management of historic site for cultural heritage tourism is essential for promoting Wat Rajabopit sustainbly.

Objectives

1. To review and analyze cultural significance and heritage values of Wat Rajabopit as it is one of Thailand's heritage and cultural sources.
2. To study the process of management for cultural heritage tourism at Wat Rajabopit.
3. To outline conservation and management plans for collaboration between the stakeholders.

Scope of the study

1. Area of study: This research focused on Wat Rajabopit Sathitmahasimaram Rajaworavihara and its community.

Wat Rajabopit Sathitmahasimaram Rajaworavihara is located in 90 Fuang Nakorn Road, Wang Burapha Phirom Sub District, Phra Nakorn District in Bangkok. It is suited between Fuang Nakorn Road and Usadang Road (Khlong Ku Muang Derm Road), near the Ministry of Interior. This temple is surrounded by two major communities which are Ti Thong community and Trok Mor community. Its community landscape is located at the east of Ku Muang Derm canal, with the site boundaries connecting close to Chao Phraya River.

2. Focus of the research: investigating and outlining cultural heritage management toward cultural heritage tourism in Wat Rajabopit and its community.

3. Target groups: spilted into three groups of stakeholders which are consisted of monks who live in Wat Rajabopit and local residents, private and government agencies, and tourists.

4. Examining and discovering: addressing both tangible and intangible heritage values. Tangible includes heritage buildings and infrastructure. Intangible includes culture, beliefs, way of life, and other related aspects.

2. Research Methodology

This research was focused on qualitative method. Qualitative method aims to gather an in-depth understanding of issues studied. In this case, research instruments of this research were carried out as follows:

- (1) Literature research
- (2) Field observation
- (3) In-depth interview
- (4) Interview, focus group meeting, participatory research

Literature research: The researcher had conducted a through literature search from books, academic journal, research reports, government data, daily newspapers and the Internet. The research was focused on topics relevant to the study. This literature research helps for basic understanding and background of temples' contexts from the past until today. Furthermore, information or data of what this temple was involved into the government policy of promoting cultural heritage tourism were also observed.

Field observation: The research had made an inventory of cultural heritage significance that had relevance to cultural heritage tourism at this temple and its communities by observation and photographic recordings. Field data sheets had prepared to facilitate field data collection. Relevant temple's antique collections, if available, were examined to determine the changes in cultural heritage significance and values of this temple and the temple's communities over time.

In-depth interview: This was undertaken with the abbot, monks, leaders of local communities, government organizations' officers, academics, private-sector operations, visitors and people working in architecture. All interviews were recorded by using a portable tape recorder (if permitted by the respondents) to avoid any disruptions caused by note taking.

Interview / focus group meeting / participatory research: The research approached local residents in the communities that are nearby the temple to solicit their personal opinion about the cultural heritage significance and values of the temple. The researcher also participated in religious and cultural ceremonies and festivals that reflect the communities' cultures.

3. Analysis of Data

As all interviews were undertaken in Thai language, the collected data was transcribed and translated into English. To reduce bias and misunderstandings arising from translations, the researcher referred translation-related concerns to some English native speakers in Thailand. Analysis the results were comprehend into these topics:

- Analysis of value and cultural significance of the temple which is including aesthetic, historic, social and scientific values.
- Determining the positive and negative impacts of cultural heritage tourism development on cultural heritage significances and values of the temple.
- Consideration and development of policies for the management recommendations on developing and managing the cultural heritage significances and values of the temple and its communities.

Cultural significance analysis

According to Australia ICOMOS (1999, p.12), Cultural significance is a concept which helps in estimating the value of places. The places that are likely to be of significance are those which help an understanding of the past or enrich the present, and which will be of value to future generations. The adjectives used in definitions of cultural significance are aesthetic, historic, scientific and social values. For this temple, cultural significance is found in each value as follows:

Value	Wat Rajabopit
Aesthetic Value	<p>1.) The outer walls of the ordination hall, principle stupa and chapel are covered with beautiful glazed coloured tiles. These glazed coloured tiles are consisted of 5 colours which are called in Thai as “Benjarong”. The design of these glazed coloured tiles was designed by Thais and they were sent to China for producing. Moreover, the designs of these tiles are floral and Tepanomoms (angles in the posture of paying respect) designs.</p> <p>2.) Doors and windows of the ordination hall are decorated on the outside with mother-of-pearl inlays in symmetrical designs showing 5 royal insignias such as Knight of Ancient and Auspicious Order of the Nine Gems and Knight of The Most Illustrious Order of The Royal House of Chakri. The workmanship is exquisite.</p> <p>3.) The interior of the ordination hall is decorated in Western style (Gothic architecture). The decoration of the ceiling and walls can be seen as in the palace at Versailles in France. The walls are made of stucco with designs showing King Chulalongkorn’s initial, and the symbol of the supreme power.</p>



Source: Panot Asawachai, 2017

Figure 2 Beautiful Glazed Coloured Tiles

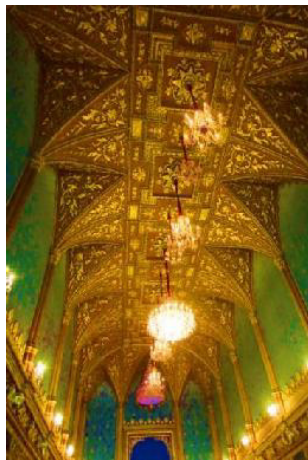
Figure 2 illustrates the beautiful glazed coloured tiles are designed in pattern of floral and Tepanomoms designs.



Source: Panot Asawachai (2017)

Figure 3 Doors and Windows of the Ordination Hall

Figure 3 illustrates doors and windows of the ordination hall are decorated on the outside with mother-of-pearl inlays in symmetrical designs showing 5 royal insignias.



Source: Panot Asawachai (2017)

Figure 4 Interior of the Ordination Hall

Figure 4 illustrates the interior of the ordination hall is decorated in Western style (Gothic architecture).

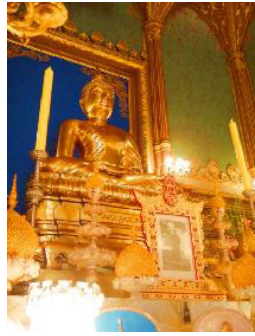
Value	Wat Rajabopit
Historic Value	<p>1.) Found west of the temple, this has a great number of memorials in various styles such as Thai and Cambodian stupas and some are in Gothic style. These memorials are repositories for the ashes from the cremations of the royal family members who are of direct descent from King Chulalongkorn. These royal family members are important for Thai history such as one memorial contains the ash of Prince Mahidol of Songkla who is the father of His Majesty King Bhumibol Adulyadej (the present king). This is the first time in Thai history that there is a royal cemetery. This royal cemetery is influenced by Western culture but, it is adapted to Thai culture.</p> <p>2.) King Chulalongkorn continued the modernization policies, which started in the reign of King Mongkut and it benefited the country as whole such as reforming the administration, installing foreign advisers in government departments and improving the army. This is an important historical event in Thai history. There are some components at this temple that are related with these modernization policies such as on the gate shutters of the temple are carved soldiers of the Corps of Royal Pages attired in European style uniforms.</p> <p>3.) As this temple is responsible for bringing together Western and Thai arts. In spite of the fact that the interior decoration of the main ordination hall follows Gothic architecture, this surprisingly matches very well with the exterior, the design of which bases on an ancient Thai architecture. So, that is made this temple unique. This temple is the first temple of a first-class royal temple which can be shown the mixture between Thai and European architecture. As the conclusion, It is an important event in the history of Thai architecture.</p>



Source: Panot Asawachai (2017)

Figure 5 Royal Cemetery of Wat Rajabopit

Figure 5 illustrates the Royal Cemetery of Wat Rajabopit is in Western influence.



Source: Panot Asawachai (2017)

Figure 6 The Ashes of King Rama V and VII

Figure 6 illustrates the ashes of King Rama V and VII kept under this Buddha Image.

Value	Wat Rajabopit
Social Value	<p>1.) There is an Buddha Image known as “Phra Buddha Ungkriros” inside the ordination hall. Under this Buddha Image’s alter, there have been placed the ashes of King Chulalongkorn (King Rama V) and King Prajadhipok (King Rama VII) who gave the constitution to Thai people. He died in England where the cremation took place. His wife, Queen Rumbai Barni brought back a portion of the ashes and put under the alter of the Buddha Image. King Rama VII’s ash was deposited here because early in his reign, he wished to take care of this temple, instead of building a new one, as there were too many monasteries already. Nowadays, this temple is a sacred temple for Thai people to pay a respect to King Rama V and King Rama VII. This is because this temple is the memorial to King Rama V (King Chulalongkorn).</p> <p>2.) With in this temple’s boundary, there is a public school for boys which was built in the reign of King Rama V. The name of this school is Rajabopit School. This school is the one of boy schools which is famous for the public as well.</p> <p>3.) This temple is continually important for the communities and Thai Buddhists. For example, there is an important Buddhism ceremony which is called “Tak Bat Dok Mai (Floral offering merit-making ritual). There are a few temples in Bangkok that are trying to preserve this important Buddhism ceremony.</p>



Source: Panot Asawachai (2017)

Figure 7 Archaeological Evidence of Thai Architectural History

Figure 7 illustrates the temple can be shown the archaeological evidence of Thai architectural history that is blended between Thai and Western architectures.

Value	Wat Rajabopit
Scientific	1.) King Rama V had this temple built to mark his reign. It took over twenty year to complete the temple. This temple is a mixture of Thai and Western styles. It shows an awakening interest in new ideas of Western architecture and a desire to experiment with it. As the conclusion, this temple can be shown the archaeological evidence of Thai architectural history that is blended between Thai and western architectures.

Current Management of Wat Rajabopit Sathitmahasimaram Rajaworavihara

At the present, Wat Rajabopit Sathitmahasimaram Rajaworavihara does not formally enage in tourism. Before taking a look at the current management of the temple, there must take a look at the potential benefit of promoting Wat Rajabopit as a tourist destination for promoting the benefits of tourism to the temple and its communities.

The first potential benefit of promoting Wat Rajabopit as a tourist destination is to create the awareness of public value's importance and to conserve it. "Public value" or "Community heritage value" is terms sometimes used to refer to those elements of significance of heritage places that are most generally valued by communities and society as a whole. The public value is consisted of historic, aesthetic and social attributes. These attributes can create a sense of place which is important to national or local self-identity. Thai people from the past to present generations remind Wat Rajabopit as a memorial place of King Rama V and King Rama VII. Many visitors including the communities around this temple appreciate the temple's aesthetic value such as mother-of-pearl inlaid designs on the doors and window panels, and the five-coloured ceramic tiles decorating the temple's exterior decoration. The temple also has major historical value due to its role in the history of Thai architecture when it's blending between the local and foreign architectures. All these attributes contribute to the reasons why the communities and Thai people value this temple as a

public value. As the conclusion, promoting this temple as a tourist destination can be created the public awareness of temple's significances that can be conserved the public value for this temple.

The second potential benefit is economic benefit. Promoting tourism into this temple can be brought "Tourism development". Tourism development can bring improved income and living standards for local people. It stimulates the economy in the communities by creating demand for communities' producing and through infrastructure development projects. Creating jobs for local people may be associated directly such as local tour guide or managerial positions; or in supporting tourism industry like food production or retail suppliers. Some locals are hired as permanent employees to take care of this temple. There are two important communities around this temple. One is called "Ti Thong (making a gold leaf) community" and another one is "Trok Mor (making a pottery pot) community". Some families at Ti Thong community nowadays still produce and sell gold leaves. Gold leaf is gold that has been hammered into extremely thin sheets and is often used for gilding. In Thailand, it is common in temples around the country to see sculptures of Buddha and other religious figures covered in small squares of gold leaf. This is because this action of applying gold leaf relates to the concept of making merit which is of core concern to Thai Buddhist. In the past, Trok Mor community used to be a community that produced pottery pots. Nowadays, Trok Mor community is a lively electronic market, jewelry producers and selling necessities of Buddhist monks. Tourism development which brings economic benefit to these communities' means increased spending in the communities generated from visitors or tourism businesses can directly and indirectly promote the viability of local businesses. Nevertheless, infrastructure including roads, parks and other public spaces can be developed and improved both for visitors and local residents through increased tourism activity in the communities. This is also the economic benefit from tourism development as well.

The pride of communities from presenting this temple as a tourism destination can be generated through tourism. This is the third potential benefit which is counted as "Social benefit". A positive sense of community identity can be reinforced and tourism can encourage local communities to maintain their traditions and identity. Wat Rajabopit is the pride of the communities and the nation as a whole. This is because there are many important components and contents which make this temple unique. For example, the golden Buddha image in meditation on a marble pedestal located inside the ordination hall is the Phra Buddha Angkhirot, constructed by King Rama IV late his reign. It was intended for the Phra Pathom Chedi but the king died before putting the plan into effect. Then, King Rama V had it put here as the principle image of the ordination hall in 1872. This Buddha image is shown the western influence. This means a more realistic image of the Buddha was invented, which became more human. The sculptural features of the Buddha image have a folded robe and having no skull-protuberance or *ushnisha* on the head. This Buddha image is designed for matching with the interior decoration of the ordination hall. That makes this temple unique and different from the other temples in Bangkok. This unique can be brought the pride of the community and the nation as a whole.

According to data received by in-depth interview and field observation, this research indicates the following factors are significant for Wat Rajabopit Sathitmahasimaram Rajaworavihara's management.

1) Way of life

According to Thai customs, there is a variety of practices including religious activities held at the temple, such as making merits, listening the sermon, Buddhist ordination ceremony, and an important Buddhism ceremony which is called "Tak Bat Dok Mai (Floral offering merit-making

ritual). Furthermore, these beliefs and practises are transferred from generations to generations. These can be regarded as intangible heritage of the temple and communities and can be last very long time.

2) Tourism facilities

- Car park: there is no official car park for the tourists who want to visit this temple. It is generally known, all tourists' vehicles should park at the provided car park free of charge around the area of temple. However, some tourists use public transports such as taxi and public bus to access to this temple.

- Accommodation is not available for tourists in the temple's communities.

- Toilet facilities: there is one station public toilet available in the temple compound. The toilet is adequately separated for male and female.

- Information center: there is no official information center in the temple compound at this moment. However, a 67-year-old assistant to the abbot, Phra Promnumi personally makes his monk resident as information center of Wat Rajabopit Sathitmahasimaram Rajaworavihara. The tourists who would like to visit the temple as a group tour should send the letter for asking the permission from him first.

- Interpretation: Nowadays, the interpretation at Wat Rajabopit is "rich in objects but poor in interpretation". This temple has many interesting and important fabrics that are related with cultural significance. However, the interpretation process for educating and communicating is not foreseen its importance. There are a few information boards for informing the temple's history inside the temple. These information boards are not given the details of cultural significances of this temple. They just provide general information of temple's history. This can not be enhanced the visitor experience and conserved the pride of the communities and nation.

- Food shop/restaurant: There are many food shops and local restaurants available around the temple. Tourists can find them easily. However, most shops are opened only in the evening period of a day. Most of them run between 17.00-21.00 hrs.

- Safety: there are security guards managed by the temple available everyday from 7.00-20.00 hrs.

3) Tourism activities

Wat Rajabopit Sathitmahasimaram Rajaworavihara is now promoting a cultural tourism program at the temple that is highly relevant to Thai's belief, which pays respecting to the ashes of King Rama V and VII kept under the Buddha Image's alter inside the ordination hall. This cultural tourism program is very successful because of an increasing number of tourists. Moreover, other tourism activity seasonally organized by the monks is "Tak Bat Dok Mai (Floral offering merit-making ritual)". This Buddhism ceremony is widely known among Thai tourists which is always held in every October.

4) Resources

There are two main sources of money for looking after of Wat Rajabopit Sathitmahasimaram Rajaworavihara.

4.1 The fund from Crown Property Bureau is the main fund for renovating the historic buildings inside the temple compound and also developing the infrastructure inside the temple.

4.2 Donation: this fund is responsible for sanitation, infrastructure, education, and other public services.

Budget is mostly spent on conservation of historic buildings inside the temple compound. Budget allocation for developing and promoting tourism activities is insignificant.

5) Stakeholder

Stakeholders for relevant to the cultural heritage tourism in Wat Rajabopit Sathitmahasimaram Rajaworavihara at present can be divided into three parts as follows :

5.1 Government sector: the municipality of Phra Nakorn district is a representative, which is officially authorized to provide tourism information to the tourists and improve better quality of environment around the temple's area. The municipality also collaborates with Tourism Authority of Thailand (TAT) for tourism promotion. Moreover, Department of Fine Arts is also involved for conservation of historic buildings inside the temple compound and Crown Property is responsible for providing funds for conservation.

5.2 Abbot and monks of Wat Rajabopit Sathitmahasimaram Rajaworavihara : this key stakeholder is more suitable to play the role of organizing cultural heritage tourism at Wat Rajabopit because they are as a cultural heritage center of the temple.

5.3 Communities: this party is also the main important key stakeholder to take role of encouraging conservation and promoting tourism at the temple.

Proposed Management Plan for Cultural Heritage Tourism

According to current management of Wat Rajabopit Sathitmahasimaram Rajaworavihara, Wat Rajabopit should improve the interpretation program. This is for communicating the values and all meanings of cultural heritage site by encouraging individuals and communities to reflect on their own perceptions of the site. All media to communicate include publications, signs, self-guided activities, visitor centers, audio-visual devices and indoor and outdoor exhibits (Hall, C.M. & McArthur, S. 1996, p. 91). The interpretation programs at Wat Rajabopit should be established;

1.1 Setting a visitor service center

This visitor service center should be included both service and interpretation areas at the same place. The service area is for providing snacks, drinks, toilet, and rest area. The interpretation area is the area to provide some background knowledge of Wat Rajabopit and the important significances of this temple. As the conclusion, this visitor service center is established as an assisting tool of the process of transferring useful information to visitors. However, it should be operated by community as well. This is because community participation in providing visitor service center will be brought the community's pride.

1.2 Signage improvement and development

Signs and information boards can be a direct technique to reach visitor's understanding. Signage can be a link between the community, messages and visitors. All signs are valuable tools to get visitors understand the site in same direction. Furthermore, the signage should be attached to the appropriate location and it should be provided both in Thai and English. The signage and information boards should be located around the temple and nearby such as entrance of the temple. The signage and information boards should inform visitors know what exists and what is important inside the temple's area.

1.3 Developing potential media

The media to facilitate visitors at pre-visit, on site and post-visit should be developed such as publication, visual media and web page. Nowadays, there is no any web page providing for this

temple. This should be improved suddenly as for providing pre-visiting and post-visit experience to the visitors.

1.4 Establishing Wat Rajabopit's local museum

Grouping traditional objects with a basis of similarity (temple's document, religious objects, communities' offering objects to the temple and etc.) is recommended. There are a lot of interesting objects at this temple such as the Buddhist scriptures which King Rama V specially gave to this temple. So, that is why there should have a local museum inside the temple. This is an other way to build interpretation program to the visitors. All objects should be explained their history and significance with obvious informative signs in both Thai and English. Furthermore, prohibited signs should be regulated for all people such as no touching objects, no smoking, no shoes. Nowadays, there is no any local museum operated inside the temple.

1.5 Traffic and transportation management

Coaches and heavy vehicles are not allowed inside the temple due to their heavy weight and compaction of soil. Normally, the visitors who want to visit this temple have to take public transportations such as bus and taxi and take a walk to this temple because there is no the car park nearby. So, the best solution of this problem is to suggest the traveling route of walk. This is because the visitors can experience the other place nearby this temple at the same time. The routing should be started from The Grand Palace - The City Pillar shrine – Wat Rajapradit – Wat Rajabopit.

5. Discussion and Conclusion

Wat Rajabopit is a secondary attraction sites. This is because secondary attraction is appealed to tourists once they are already at a destination and are examined as the options or choices for their time. Secondary attraction sites also can be of considerable interest, definitely worth seeing if in town and worth half a day's travelling if outside the town. Wat Rajabopit is one of Buddhist temples in Bangkok which are considered as an interesting temple and have much special significance. Wat Rajabopit was built in the second year of the reign of King Rama V and it is considered as a first-class Royal temple. The temple's layout is unique. The ordination hall, monks' resident quarter and the garden are well separated. The attractive feature of this temple lies in the utilization of five colours glazed tiles, decorated on the walls, pillars and the stupa. This results in a unique work of art. The temple is thus responsible for bringing together Western and Eastern arts. This temple is known as "Outside is Thai, but inside is European". This temple is rich in cultural significances, which are aesthetic, historic, scientific and social values. The potential benefits of promoting Wat Rajabopit as a tourist destination are to create the awareness of public value's importance and to conserve it. Secondly, promoting tourism into this temple can be brought "Tourism development". Tourism development can bring improved income and living standards for local people. This can be counted as "Economic benefit". Thirdly, the pride of communities from presenting this temple as a tourism destination can be generated through tourism. This is the third potential benefit which is counted as "Social benefit". Furthermore, Wat Rajabopit is needed to improve the interpretation process. This is because the interpretation at Wat Rajabopit is "rich in objects but poor in interpretation". The interpretation program at this temple should be involved: 1) setting a visitor service center, 2) signage improvement and development, 3) developing potential media, 4) establishing Wat Rajabopit's local museum, and 5) traffic and transportation management.

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Smart Bus Drivers: Fleet Management for Smart Workers

by

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IJMBE International Journal of
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Abstract

This research is a part of an initiative to improve bus services supporting workers in Thai Industrial Estates. The study aims to find smarter transportation using internet-based technology. This kind of service would be for factory workers that travel to work inside of large industrial estates that are typically far from an organized public transportation system. Factories with a large workforce must maintain a large fleet of shuttle buses to provide adequate transportation, create effective routes, make central transit points and create standard “Pick Up” times, thus making it more convenient for the workers transiting to work. In this study, an application called “Wherever” used on a Smart Phone is introduced to address the problem of picking up and transporting employees from different pick up points on several routes. The goal of using “Wherever” is to have all of the employees arrive at the same location at the same time. This report demonstrates how useful this new application is for this purpose.

Keywords: Smart Driver, Smart Worker, Mobile Application, Smart Transportation

1. Introduction

Thailand currently has several industrial estates and factories having more than 500 permanent workers that live in several areas surrounding the factory. Some workers find it very easy to find transportation from their residence to work, but others have it more difficult due to the lack of support from a public transportation system.

This is very difficult for the factory to manage traditional working hours and implement productivity plans if all workers take separate modes of travel to get to work and arrive at various times. Some arrive early and others arrive late. To solve this issue, most factories provide shuttle bus services to pick up each employee at their residence, a predetermined gathering point or other specific pick-up points along main routes. The factory will setup a main point and a pick-up point for the bus drivers and workers to understand where to be at the proper time and place for efficient pick up and transfer of employees. Management will inform their workers of these options and enable them to select which option is the most convenient for their situation.

There are many factors that can impact the bus service timing such as delays caused by mechanical breakdown, ever-changing traffic conditions, vehicle accidents, weather conditions like heavy rain, flooding, and personal issues. These unforeseen causes make the bus driver and workers miss the scheduled transport times. Since there is no contact between drivers and workers, workers miss their buses and the drivers don’t know where the workers are. Either there are no workers when the bus arrives or there is no bus for the workers to board. Moreover, the drivers cannot wait at the

meeting points for long periods of time and maintain the schedule. In addition, workers who wait in remote areas for long periods of time have higher risks of robbery or other crimes. Consequently, workers miss their buses and must find alternative ways to go to the factory by themselves. This causes greater travel expenses and higher risks along the way.

To find a solution, the researcher has developed a Mobile Application to be installed into the mobile phones of the bus drivers and workers to develop efficiency of service using GPS thus creating smart drivers, smart workers and smart transportation. This Mobile Application provides independent information for each shuttle bus in real time. Thus, allowing the smart workers to know not only the location of the buses on their service route, but specifically the projected time the buses will be at the pick up points. This program allows smart workers to estimate when the shuttle buses will arrive at the different locations, thereby helping them to manage their way to the pick up points on time. In case they miss their targeted bus, they can still find their way to the nearest alternative route or find other buses, which are the more economical and safe way to travel. Another benefit for the smart driver is ability to check the application and predict the number of smart workers at each pick-up point. This allows them to manage their driving time more efficiently and reduce time wasted waiting if no passengers are at or to arrive at this at the pick-up point.

2. Literature Review

The problem of receiving goods and shipments (pickup and delivery problems, PDP) refer to the scheduling of vehicles and place of delivery. Each vehicle must travel from one location to another and the operating cost on all routes will decrease through sharing the shortest path. However, PDP often makes errors, causing problems to salesmen. The problem is often due to mistakes in route planning of shipments (Vehicle Routing Problem, VRP). PDP is the starting point for determining the origin and destination points. All these routes should converge along the same path. The goal is assigning or grouping the travel routes to reduce transportation costs while operating under certain restrictions and limitations, such as traffic conditions on the road as well as other factors.

Today's public transport system is more flexible. Workers can specify the desired point when they get on a bus and the service buses can divert from usual routes to get workers to where they need to go. This system demands a response system (Demand Response Transit, DRT). Although having fixed route is a good transport system, it is not flexible for travel and takes more time. DRT system is more flexible, but more expensive because the "pick up" or service points are specified by its customers.

The problem of DRT system has been extensively investigated and solutions have been proposed for more than three decades since Wilson et al (1971). They input details of passengers into the shuttle bus route to solve the problem of Mobile Allowance Shuttle Transit (MAST). This is an efficient operating system for managing travel expenses, which combines the flexibility of the DRT system with the low-cost static route service system.

One form of MAST deals with the problem of transporting workers. The problem is trying to the load all the factory worker passengers waiting at the regular bus stations and taking them to the factories ahead of their assigned work schedule. Then, at the end of the day, passenger information is sent to the buses.

Umit Yuceer, in his article, offers a solution of formatting the service by dividing the travel distances into sections.

Other issues related to the problem of passenger transportation are the integration of equipment to receive internet transmissions (Internet of Things, or IOT) and sensors. The most important device is a GPS module that will facilitate the positioning of both buses and passengers together with the estimated arrival time (ETA) at the appointed pick up or service point.

To accomplish this mission, the team created an application to solve the problem of sending and receiving workers from their places of employment. This application allows the bus drivers to track and share travel information with their passengers on various routes. With the downloaded application, passengers can see the status of the buses and anticipate the arrival times at the pick up or meeting point.

3. Implementing the “Wherever” Application

The use of applications tracking buses using smart phones was developed from Apache2 on the Ubuntu server, Java, php, SQL and H2 database management system. They use viewers and controller programs developed by the Inventor II App and Android Studio, through the following principles:

1. Application program for control the tracking which is installed on a mobile phone of the bus drivers.
2. Application for workers to monitor and view bus traffic (Bus viewer)
3. Server for information management with Internet connection (www.wetrack.online:8082).

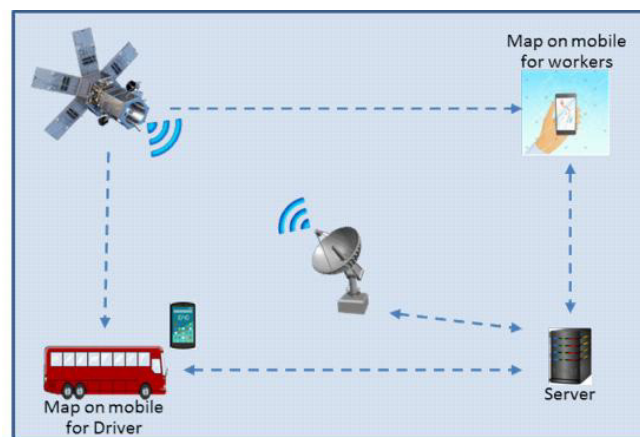


Figure 1 System Operation, Make Satellites at Top Center,
Arrows to Bus and Workers Map in Middle of Bus and Worker (Above Server)

Workers and Drivers can download the application from Google Play Store in the Android system or they can access in to Chrome browser in IOS system. When the users turn the application on, it will simultaneously track and display the movement of the shuttle buses on each route and the location of the smart workers and smart drivers. It can calculate and estimate the arrival time of the

bus at each meeting point accurately, thus reducing the wait time at each point. Moreover, it allows smart workers to choose the best route or the closest meeting point with minimal time and cost.

How Application work

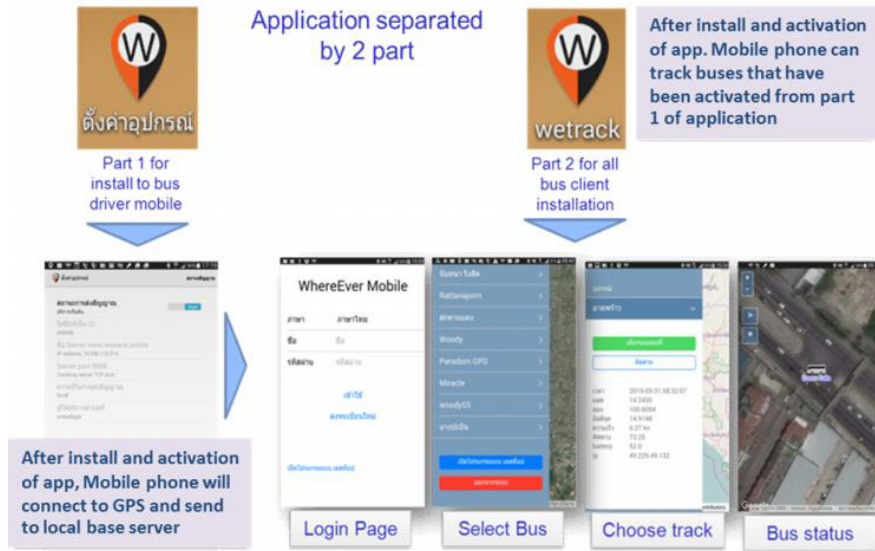


Figure 2 The Application operation

To understand how the Application is used, the system must be explained to the workers currently using the bus service. Communicating about the application, the operating system and how to use it, will require the set of procedures as follows:

1. Application developers will train and educate Human Resource officers how to use the new program.
2. Human Resources will train supervisors, workers and bus drivers. They will describe the current operation of the bus service prior to the deployment of the new application.
3. Explain how the application can be installed into their phones and how the tracking system works.
4. Install the mobile application for the workers and kick off the operation.
5. Provide application user manuals to workers currently using the shuttle buses and explain how the use of this new application will benefit them.
6. Monitor use, provide feedback and fine-tune the bus service and application using information from both workers and drivers.



Figure 3 Workflow of implementation

After the launch this application, the researcher sent questionnaires to the users. 365 out of the 400 persons responded and 95% of the application usage results found that most of the users were satisfied with the application for the following reasons:

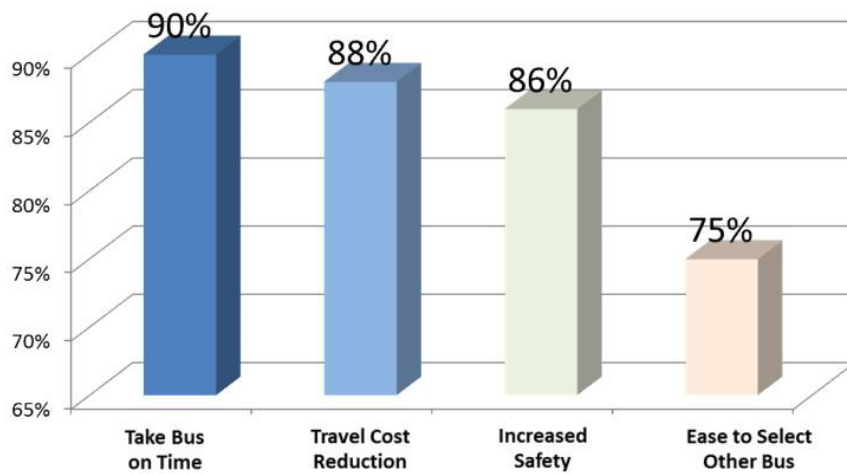


Figure 4 Application Feedback

Benefits for the worker

1. Saves time waiting for buses because the application estimates the exact time of arrival. Moreover, the application is “user friendly”. Anyone can quickly learn how to use it.
2. Saves on travel expenses getting to the meeting point because workers can select the shortest and fastest route from their place of accommodations.
3. Prevents the danger of waiting at high-risk areas and walking late at night or dawn. Workers can manage their time better by leaving their accommodation and arrive at the pick up point just before the bus.
4. Lets the worker know whether they have missed the bus or not, so that they can get to the next pick up point or find an alternative way to work.

Benefits for the bus driver

1. Eliminate wait time at pick up points without workers.
2. Ability to view workers the application at a certain pickup on point even if the location is crowded with other bus service passengers.
3. Using and viewing a simple application interface that does not interfere with driving.

4. Conclusion and Recommendation

The efficiency and performance of this application is dependent upon these key factors:

1. Both drivers and passengers must use Smart phones with at least 3G data connections that are sufficient for the application.
2. Both drivers and workers must turn on GPS receiver to connect to link the signal of the smart driver and smart worker for satellite tracking.

There is a common misunderstanding among bus drivers and workers that turning on the GPS signal or launching this application will consume too much power from the battery and use costly cellular data. In fact, both the GPS and application launching use less than 2 KB of data per day and minimal battery usage while using the application. This information must be explained to users, so they can have a better understanding of the system and its effect on their data plans. In addition, the drivers are worried that turning on the GPS signal all the time will cause them to lose their privacy by having their movements tracked. To address this, the researchers will develop the GPS “turn on/turn off” switch system to run automatically at user-selected times. This will likely result in better cooperation among the drivers and encourage use of the application. For the future development of this application and proposed fixes, the information will be gathered and communicated from the company directly to the users. In conclusion, the data sharing of the user findings is the best way to prove the benefits of using the “Wherever” application.

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**The Impact of Human Resource Practices on
Task Performance of Employees in Electrical, Electronics
and Telecommunications Industry Group in Thailand**

by

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IJMBE International Journal of
Management, Business, and Economics

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Abstract

The purposes of this research were to study about the impact of human resource practices on task performance of employees in electrical, electronics and telecommunications industry group in Thailand. The research methodology is the survey research by using questionnaires to collect data from sample (including staff at executive level, specialist level and officer level of human resource work group from 29 companies, who were willing to give information, in electrical, electronics and telecommunications industry group in Thailand). Accidental or convenience sampling random was applied in this research. The questionnaires were verified for content validity by experts, tried out the reliability with 30 tests by using Cronbrach's alpha coefficient was 0.979. The statistical analyses were frequency, percentage, mean, standard deviation and multiple regressions. The research results show that human resource practices in terms of training/development, promotion, compensation, benefit and job security affecting task performance of employees in electrical, electronics and telecommunications industry group in Thailand.

Keywords: Human Resource Practices, Task Performance

1. Introduction

The human resource specialists give the opinions that human resource is able to work to achieve the organization's goal as well as to create value of organization. Therefore, people in organization is the critical factor to create capacity and competitive opportunities for organization by using strategic operation to achieve specified goal of organization (Thanya Pholanan, 2003). There are various research studies supported that human resources practices are able to apply in human resource department which develop and effect positive task performance of employees and organization (Shih, Chiang, & Hsu 2011; Gong, Chang, & Cheung 2010). Besides, the author had an opportunity to work with the Federation of Thai Industries in the project of wage and welfare of industrial sector in Thailand. Therefore, the author has an in researching on a topic of "The Impact of

2. Literature Review and Hypothesis

There were similar aspects of human resource practices in human resource management. Therefore, this research is to collect and summarize four aspects of human resource practices which also covers the aspect of human resource management by reviewing the literatures of various authors, for example, Nai-Wen Chi & Carol Yeh-Yan Lin, 2010; Gong Chang, & Cheung, 2010; Gitell, Seidner & Wimbush, 2010; Chuang, & Liao 2010 and Shih, Chiang & Hsu, 2011 etc. The four main human resource practices are:

1. Human resource selection is the organizational selection process to choose the most qualified and suitable person from all candidates for the specified position by having a verified standard for recruitment and selection process as well as the ability test in relevant to operation.

2. Training, development and promotion mean the organization has often surveyed for the needs of employees' training as well as having a clear and cover all employees' level including general working skill, professional skill, first orientation training, an activity or learning process for increasing knowledge, skill, potential as well as personal attitudes in the organization to match with the current position and to support the future work for work efficiency and effectiveness. Having a future planning in professional career path of employees and focusing on how to promote employees by internal human resource selection when having job vacancy rather than external recruitment.

3. Performance appraisal means organization has regularly evaluated performance of employees according to specified policy. There is a clear and specified measurement, method to evaluate the ability of each employee by considering on quantities and qualities of work which the supervisor has already recorded or observed or considered according to specified time as consideration measurement. There are a benefit for employees and employees' development by having announcement of performance appraisal's result to employees within timeframe.

4. Compensation, benefits and job security are the ability to pay money for employees in terms of salary, cost of living, position allowance which are paid every months including welfare, other services and activities which organized by organization for comfortable work, job security, certain guarantee in life or other benefits aside from regular compensation.

A-longkorn Mesutha and Smith Satchachukorn (2542 : 174-175) identified the meaning of task performance of employees in organization that the result from work results by employees in organization both direct and indirect way which assigned by supervisors to achieve the fifteen organization's goals as follow:

- 1. Quantity** means the amount of work's results under efficiency and effectiveness;
- 2. Quality** means working according to the rules; the works have positive results and benefits for everyone as well as organization
- 3. Work Knowledge** means the employees have knowledge and understanding of work process to achieve the goal
- 4. Equipment Skill** means the knowledge of using material and equipment with the adequate understanding and regulation as well as helping together to maintain the equipment and concerning about caution
- 5. Ability to learn new task** means fast and right understanding of learning new jobs
- 6. Work Responsibility** means the attention in work and the awareness of

how important of work and always finish work on time

7. Human Relation means employees can work and have good relationship with colleagues

8. Punctuality means the respect of work time policy and regulation

9. Communication means clear, easy and understandable model and system of communication throughout the organization

10. Creativity means employees must have developing new idea or working process to be related to the change by using creativity to be guideline of work

11. Cooperation and Coordination means co-operation to achieve goal of work and activity together

12. Behavior and work according to the regulation means appropriate behavior according to the rules and regulations

13. Reliability means ability to work right according to the assignment with efficient result

14. Problem solving and decision making means thinking system, analysis or intelligence to create thing related to employees' work performance

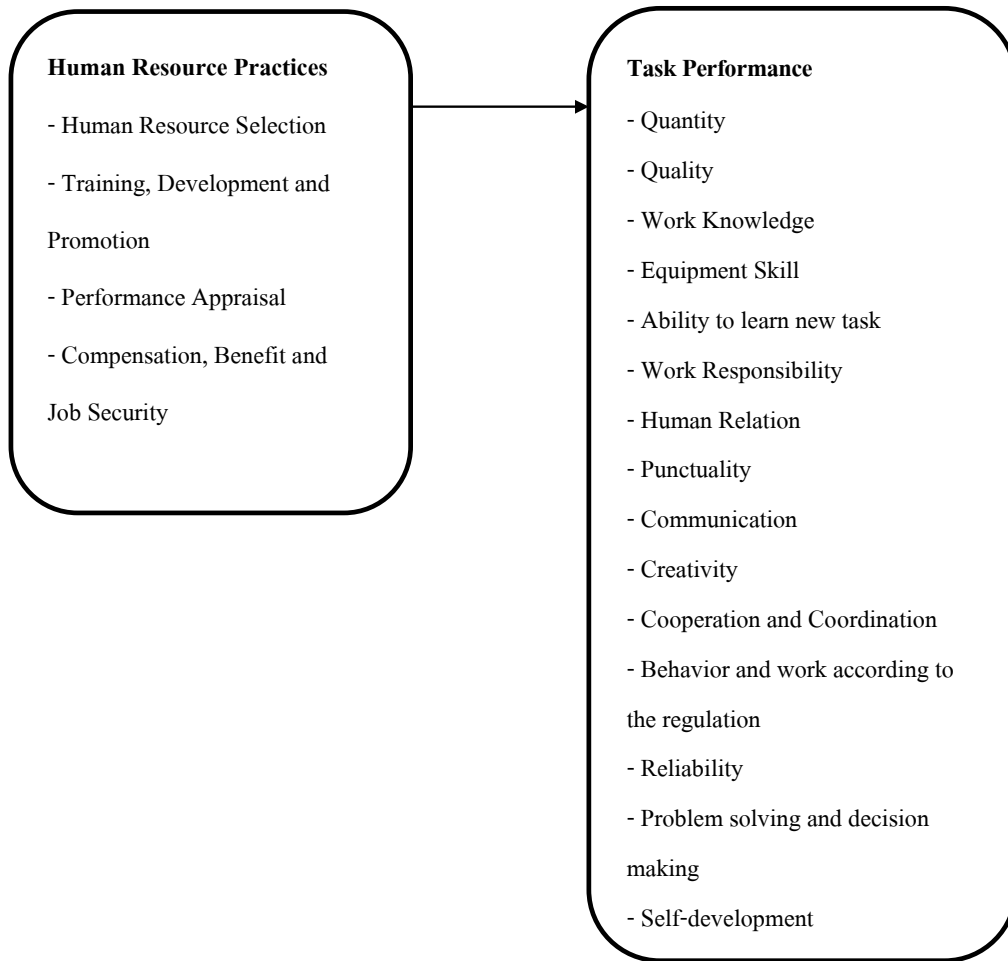
15. Self-development means to be always continue having self-knowledge and development related to work

Ahmad Aref Almazari (2014) conducted the research on the impact of Human Resource Practices on Task Performance in Bank of Saudi Arabia found out that the aspect of job characteristic process, performance appraisal, compensation and human resources planning have impact on task performance of employees in Bank of Saudi Arabia.

Nazim Ali et al (2014) conducted the research on the impact of Human Resource Practices on Task Performance of Empirical Evidence from Public Sector Universities of Malakand Division, KPK, Pakistan found out that human resource practices in term of training, development, promotion, performance appraisal, compensation and benefit have the positive impact on task performance.

Momena Akhter (2013) conducted the research on the impact of Human Resource Practices on Task Performance of one company in Bangladesh found out that training and development and career development have the positive impact on task performance.

Kerstin Alfes, Amanda Shantz and Catherine Truss (2012) studied on the relationship between Human Resource Practices and Task Performance through medium variation of trust on employer. The research had conducted from 613 respondents (employees and their direct managers in service organizations of UK). The trust on employers is the medium of relationship between Human Resource Practices and Task Performance.



Hypothesis

Human Resource Practices have an effect towards task performance of employees in Electrical, Electronics and Telecommunications Industry Group in Thailand.

3. Research Methodology

The methodology using in this study is quantitative research. The author designed the research by studying from documents, concepts, theories and any relevant researches to cover all studied points, specified objectives and hypotheses for using to develop questionnaires by specialized examiner. It was amended and tried out for reliability test before conducting actual information from population. The population is employees in human resource group i.e. executives, specialists or officers of companies in group of electrical, electronics and telecommunications industry group in Thailand which are members of the Federation of Thai Industries. There are 29 companies which are willing to give the information with 228 staff in human resource group. The specified proper sample size by using Taro Yamane has reliability value at least 95% and error value at 0.05, sample size calculation by using formula of Taro Yamane (Silpjaru, T., 2007).

$$n = \frac{N}{1 + Ne^2}$$

when n = Sample size
N = Total amount of population using for this study
e = Acceptable error value is equal to 0.05

stand for formula

$$n = \frac{228}{1 + (228 \times 0.05^2)}$$

$$n = 145.22$$

Thus, the sample size of this study is 145 respondents.

Using random sampling by nonprobability sampling and accidental sampling with group of 145 staff in human resource group from 29 companies which are willing to give information. The researcher created questionnaires from development and analysis of questions from related literature reviews which having content validity by 3 experts' opinions to examine content validity. The tested content validity of questionnaire was tried out with 30 employees. Then, using the result to calculate for reliability with Cronbach's Alpha coefficient by using the criterion of questions having Cronbach's Alpha coefficient from 0.70 and above which will be convinced that the question has reliability. The result of reliability value is at 0.979. The statistics using for data analysis are Frequency and Percentage to analyze a general information of respondents. Mean (\bar{x}) and Standard Deviation (S.D.) are used for human resource practices and task performance analyses. Multiple Regression Analysis are used for the impact of human resource practices on task performance of employees in electrical, electronics and telecommunications industry group in Thailand.

4. Results and Discussion

There were 125 staff or 86.21% of sample size, who completed the questionnaire, responded the questionnaire back from 29 companies. Most of the respondents are 99 female or 79.2%. 66 staff or 52.8% are in the age between 22 and less than 35 years old. 62 staff or 49.6% are single. 88 staff or 70.4% graduated in the bachelor degree. 56 staff or 44.8% are officer level. 64 staff or 51.2% are in electronics industry. 56 staff or 44.8% of most respondents have experienced in their current companies about 1-less than 6 years. 68 staff or 54.4% have the average income at THB 15,000-less than 30,000.

Table 1 Mean (\bar{x}) and Standard Deviation (S.D.) of the Average of Human Resource Practices and OCB.

Human Resource Practices	\bar{x}	S.D.	Interpretation
1. Your company emphasizes on human resource selection to have a person with the right qualification for the job.	3.96	.665	high
2. Your company has clear standard for job application and recruitment.	3.80	.660	high
3. Your company has an intensive selection of human resource by using ability test of any aspect i.e. working skills and ability to learn.	3.71	.811	high
4. Your company has an intensive first-orientation	3.73	.723	high

training for new employees.			
5. Your company often has a survey about the need of employees' training.	3.69	.734	high
6. Your company has a clear training plan and cover all levels of employees.	3.93	.785	high
7. Employees in your company has thoroughly an intensive training for general working skill i.e. services and professional skills.	3.69	.712	high
8. Employees in your company know about the promotion of their professional career path in the company.	3.36	.689	medium
9. When the company has job vacancy, the internal employees are the first priority to recruit rather than the external candidates.	3.61	.851	high
10. Your company always has employees performance appraisal according to policy.	3.91	.696	high
11. Your company has identified the clear indicator of employees performance.	3.72	.799	high
12. Your company always periodically disclose the result of performance appraisal.	3.82	.755	high
13. Your company applies the performance appraisal to develop the employees.	3.47	.758	medium
14. Your company adjusts the compensation according to performance.	3.56	.756	high
15. The increasing compensation has differently verified between high and low performance of employees.	3.40	.803	medium
16. Your company highly pays the compensation comparing to other companies in the same industry.	3.10	.705	medium
17. Your company has other welfares except from money compensation which is better than other companies.	3.15	.814	medium
18. Employees in the company have high job security.	3.49	.779	medium
19. In case of economic problems, your company has no policy to reduce the full-time employees.	3.06	1.169	medium
Human Resource Practices	\bar{x}	S.D.	Interpretation
1. Human resource selection	3.82	.614	high
2. Training, development and promotion	3.66	.553	high
3. Performance appraisal	3.73	.647	high
4. Compensation, benefits and job security	3.29	.597	medium
Human Resource Practices	3.58	.500	high

Task Performance	\bar{x}	S.D.	Interpretation
1. Employees can work efficiency and effectiveness.	3.62	.680	high
2. Employees can work on customer's requirements or specifications and the results are positive rather than negative image of the company.	3.74	.659	High
3. Employees have the knowledge and understanding of their related duties and tasks as well as understand how and steps to perform very well.	3.81	.668	high
4. Employees have the knowledge and the expertise in the use of materials and equipment related to task performance, as well as the safety precautions in the use regularly.	3.78	.670	high
5. Employees have the ability to learn new tasks quickly and to understand correctly.	3.64	.653	high
6. Employees work hard, be responsible for their job, be regard to the importance of the work and be trying to get the job done on their schedule all time.	3.75	.656	high
7. Employees have good relationships with others and work with their colleagues or subordinates as well and have a mind to help others willingly.	3.77	.674	high
8. Employees come to work on time and have consistency to work punctuality all the year.	3.66	.742	high
9. Employees can communicate and clarify the story or idea to others simple and to the point.	3.55	.724	high
10. Employees have developed new ideas or new work process to comply with changes by using as a guide in the operation.	3.51	.768	high
11. Employees have to cooperate and coordinate with others involved to achieve the operation goals.	3.68	.679	high
12. Employees have their behaviors appropriately and work according to the rules or regulations of the company.	3.65	.699	high
13. Employees can work carefully, their performances are reliable and supervisors don't need to be closely controlled.	3.60	.648	high
14. Employees have the ability to analyze and solve problems and make decisions in their work correctly and timely.	3.48	.758	medium
15. Employees have development or seek knowledge for themselves regularly to be aware of their work or related work.	3.53	.779	high
Task Performance	\bar{x}	S.D.	การแปลค่า
1. Quantity	3.62	.680	high
2. Quality	3.74	.659	high
3. Work Knowledge	3.81	.668	high

4. Equipment Skill	3.78	.670	high
5. Ability to learn new task	3.64	.653	high
6. Work Responsibility	3.75	.656	high
7. Human Relation	3.77	.674	high
8. Punctuality	3.66	.742	high
9. Communication	3.55	.724	high
10. Creativity	3.51	.768	high
11. Cooperation and Coordination	3.68	.679	high
12. Behavior and work according to the regulation	3.65	.699	high
13. Reliability	3.60	.648	high
14. Problem solving and decision making	3.48	.758	medium
15. Self-development	3.53	.779	high
Task Performance	3.65	.571	high

Table 1 represents Mean (\bar{x}) and Standard Deviation (S.D.) show mean and standard deviation of Human Resource Practices and Task Performance in electrical, electronics and telecommunications industry group in Thailand. From table 1, it was found out that the respondents have the opinion towards human resource practices at high level of the average $\bar{x} = 3.58$. When analyzing each aspect, it was found out that there are some aspects having high level of the average, for example, human resource selection has the maximum average at $\bar{x} = 3.82$; the second level is performance appraisal at $\bar{x} = 3.73$; and training, development and promotion are at $\bar{x} = 3.66$ accordingly. Other aspects are in the medium level, for example, compensation, benefits and job security are at $\bar{x} = 3.29$. Moreover, it was found out that the respondents have the opinion towards task performance at high level of the average $\bar{x} = 3.65$. When analyzing each aspect, it was found out that there are some aspects having high level of the average, for example, Work Knowledge has the maximum average at $\bar{x} = 3.81$; the second level is Equipment Skill at $\bar{x} = 3.78$; Human Relation is $\bar{x} = 3.77$; Task Responsibility is $\bar{x} = 3.75$; Quality is $\bar{x} = 3.74$; Co-operation and Co-ordination is $\bar{x} = 3.68$; Punctuality is $\bar{x} = 3.66$; Behavior and work according to the regulation is $\bar{x} = 3.65$; Ability to learn new task is $\bar{x} = 3.64$; Quantity is $\bar{x} = 3.62$; Creditability and Trust is $\bar{x} = 3.60$; Communication is $\bar{x} = 3.55$; Self Development is $\bar{x} = 3.53$; and Creativity is $\bar{x} = 3.51$ accordingly. Other aspects are in the medium level i.e. Problem Solving and Decision Making is $\bar{x} = 3.48$. Human resource practices in the aspect of human resource selection have high and highest level of average. Therefore, the sample sees that the organization focuses on human resource selection to get the knowledge, skill and right characteristic of employees to match with the positions. Training, development and promotion of employees have high level of the average by specified planning, verified training, and covered all levels of employees. When analyzing each clause, it was found out that "Employees in your company know about the promotion of their professional career path in the company" has medium level of the average. It shows that there might be lack of the suggestion in relevant to the ascent of career path in the organization. Although, performance appraisal has high level of the average, which shows that performance appraisal is defined as an indicator of employees' performance. When analyzing each clause, it shows that "Your company applies the performance appraisal to develop the employees" has medium level of the average. It shows that performance appraisal's result is not used to revise the compensation rate as expected.

For the aspect of compensation, benefits and job security, it has medium level of average. When analyzing each clause, it shows that "In case of the company facing the economic problems, your company has no policy to reduce full time employees" has the lowest level of the average. It

shows that when company having the problems, they shall have policy to reduce full time employees for reducing the operation cost. “Your company highly pays the compensation comparing to other companies in the same industry” and “Your company has other welfares except from financial compensation which is better than other companies” have second-lowest level of the average. It shows that the sample shall see compensation and welfare have been paid with the same rate as other companies in the same industry. Moreover, with higher rate of cost of living, the employees shall feel that compensation and welfare shall not be enough for higher expenses because they generally put a lot of effort and inner strength in working for company. They need both financial compensation and other compensations to be enough for cost of living. Besides, they need job security for cumulative income to support themselves and families. For the question of “The increasing compensation has differently verified between high and low performance of employees”, it has accordingly lower level of the average. It means that the higher level of compensation shall have no distinctively different between high and low task performances of employees. This shall show the opinion of employees why they have to work hard to get high performance since the level of compensation will be the same as people who have low performance. Employees who have high performance feel respond for working and get low performance. It is implied to the unfairness of compensation rate. “Employees in the company have high job security” has the last lowest level of average. It shows the relationship with the previous statement when the company get lost revenue, the full time employees shall be reduced. The sample shall see that there is no job security in the organization. The employees shall be afraid of job security because of high business competition and economic regression. It shall have an impact on task performance.

Table 2 Results of multiple regression analysis between Human Resource Practices and Task Performance

Variables	Beta(β)	p
Constant	.957	<i>*P=.000</i>
1. Human Resource Selection	.138	<i>P=.146</i>
2. Training, Development and Promotion	.212	<i>*P=.043</i>
3. Performance Appraisal	.180	<i>P=.075</i>
4. Compensation, Benefits and Job Security	.256	<i>*P=.006</i>
R ²	.434	
Adjusted R ²	.415	
F-value	22.962*	

*** significant at the level 0.001

** significant at the level 0.01

* significant at the level 0.05

Table 2 represents the multiple regression analysis between human resource practices and task performance. As seen from the coefficient of determination, Adjusted R², accounted for 41.5% of task performance and training, development and promotion : $\beta = .212$, $p < .05$; compensation, benefits and job security: $\beta = .256$, $p < .05$. It shows that support Hypothesis just only training,

development, promotion, compensation, benefits and job security have an effect towards task performance with significantly at 0.05.

For the aspect of development, training and promotion have an effect towards task performance with significantly at 0.05. It was found out that the development, training and promotion have high level of the average $\bar{X} = 3.66$ and task performance have high level of the average too $\bar{X} = 3.65$. It shows that if the executive focus on more training, development and promotion, the employees do more task performance also, thus which conforms to the research study of Momena Akhter (2013) studied HRM Practices and its Impact on Employee Performance: A Study of the Cement Industry in Bangladesh. It was found out that employee training and development of the Cement Industry in Bangladesh have statistic significantly positive relationship with task performance.

For the aspect of compensation, benefits and job security have an effect towards task performance with significantly at 0.05. It was found out that the compensation, benefits and job security have medium level of the average $\bar{X} = 3.29$ and task performance have high level of the average too $\bar{X} = 3.65$. It shows that if the executive focus on more compensation, benefits and job security, the employees do more task performance also, thus which conforms to the research study of Nazim Ali (2014) Impact of Human Resource Management Practices on Employees' outcomes (Empirical Evidence from Public Sector Universities of Malakand Division, KPK, Pakistan). It was found out that compensation of the Public Sector Universities of Malakand Division, KPK, Pakistan have statistic significantly positive relationship with task performance of employees because it is the important motivation for the performance of employees within the organization.

5. Conclusion and Implications

1. In case of facing economic problems, the executive of company should solve the problems with others solutions rather than using reduction of full time employees' policy. It will create high job security's feeling for employees, collaboration in the activities arranged by the organization, expressing the useful opinions for the company, accepting the changing knowledge and strictly following the company's regulation as well as respecting and be punctual for the appointment. If the company has tried various methods but could not solve the problems, it could be solved by cutting off the salary and compensation by level of position. If the person has high position level, the salary must be more reduced to recover company's crisis.

2. The executive should pay the proper compensation and benefits apart from money compensation or better payment than others comparing with companies in the same industry. It is also created job security of employees in organization which has an impact on task performance.

3. The executive should increase the compensation of employees who do a good job by clearly different from employees who do a bad job

4. The executive should build up the employees' sense of duty in both operation and how to use human resource to organization efficiency.

5. The executive should have the training and development continued because of the impact on employees' task performance. It also creates the potential of employees in the organization's human capital or assets of the company more than the cost of the company.

6. The executive should consider the compensation and benefits in all aspects of the company to evaluate from employees' task performance and compare the our company's compensation and benefits with the other company in the same industry in order to create an incentive to work.

6. Future Research

1. There should be a study of other variables which might have an impact on task performance i.e. work motivation and human resource strategy etc.
2. There should be a study of human resource practices and task performance of employees in other industries which are willing to give information for further research.

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A Studio Based Approach for Enhancing Decisions of Poultry Farmers in East Africa

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IJMBE International Journal of
Management, Business, and Economics

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Abstract

The poultry industry in East Africa has been growing tremendously in the last decades with a shift in trends from previous subsistence agricultural systems which focused more on catering for households to commercial enterprises focusing on increased production and profitability. Commercialization in the poultry industry and generally in the agriculture sector has increasingly become popular in East Africa, mainly as an entrepreneurial response to income growth in the region. Commercialization of the poultry industry has also been influenced by the increased popularity of chicken and eggs in boosting protein nutrition and economic empowerment of people on the African continent. The last decade has seen economies of the East African region come up with innovative ways of boosting and supporting poultry farms and other agricultural enterprises to grow in scale. But while poultry farms in East Africa are faced with a wide range of opportunities and prospects, they have also been faced with various challenges which threaten further growth and sustainability of the industry. Such challenges include compromised quality of inputs, unstable economies, lack of sufficient regulation of the industry, inadequate information availability, high disease prevalence and limited application of technology. Such challenges define the volatile and complex business environment that poultry farmers in East Africa operate in, which equally impacts their ability to make effective and timely decisions. While East African governments have up scaled their efforts towards supporting the growth of the poultry industry, the farmers' decision making capabilities are hindered by the complexities that come with the challenges in their decision making environments. Hence, this design science research aimed at enhancing the decision making processes of poultry farmers in the volatile and complex East African business environment with a decision enhancement studio as advanced by Keen and Sol (2008).

Keywords: Decision Enhancement, Decision Enhancement Studio, Decision Making, Design Science, Poultry, Poultry Farming

1. Introduction

There has been steady growth of the poultry industry across the East African. Like most of Africa, poultry production in the East African region has been largely subsistence with the indigenous chicken accounting for about 70% of the total flock in the region (FAO, 2013; FAO, 2011; Kyarisiima et al, 2004). However, in recent years, this trend has significantly changed with increasing poultry flock numbers and more commercial farms being registered across East Africa (FAO, 2011). With an increasing number of commercial poultry farmers, there is need to focus on how to come up with innovative ways of boosting and supporting poultry farms and other agricultural enterprises to grow in scale (FAO, 2011). It is no wonder that East African governments have up scaled their efforts towards supporting the growth of commercial agriculture enterprises including those engaging in poultry production through policy e.g. Uganda's Plan for Modernization of Agriculture (PMA), which seeks to convert subsistence farming into commercial farming (Ekou, 2013) and Rwanda's framework for livestock development which seeks to enhance commercial livestock enterprises. In spite of these efforts as well as prospects and opportunities of the poultry industry in the East African region, poultry farmers are faced with challenges which threaten further growth and sustainability of the industry e.g. unstable input prices and quality (Katongole et al., 2013; 2011; wide gap between local demand and supply of grandparent stocks (FAO, 2009), lack of sufficient regulation (Msoffe and Ngulube, 2015; FAO, 2009), inadequate information availability (FAO, 2009) and limited use of technologies (World Bank, 2008) among others. Msoffe and Ngulube (2015) and Karanja (2014) also observed that these challenges are further aggravated by inadequate management competences among farmers which is mainly caused by a lack of adequate systems and approaches to guide farmers in decision making especially in the context of the challenges in the East African poultry industry business environment. It is against this background that this study focused on enhancing the decision processes made by poultry farmers in East Africa considering the volatile and challenging business environment in which they operate.

2. Literature Review

Decision Processes on Poultry Farmers in East Africa: Theoretical Perspectives

Decision processes that lack agility and quality have a tremendous impact on poultry farm management. Mintzberg et al. (1976) defined a decision process as a set of actions and dynamic factors that begin with the identification of an incentive for action and ends with a specific commitment to action. From literature, it was observed that an individual farmer's goals, values, experiences, networks, expertise, personal norms and attitudes are highly reflected in the decisions they make (Osinga, 2015; Aregu, 2014; Nair, 2006). In East Africa, poultry farming is still evolving from previous subsistence/backyard systems to commercial systems (FAO, 2011), and this may have an influence on farmer attitudes and experiences. The challenges faced by the industry in the region also have a direct influence on the decision processes of poultry farmers and the kind of decisions they finally make. These challenges cause farmers to make decisions under conditions of uncertainty. For example a poultry farmer making a decision in an inadequately regulated business environment is bound during the decision making process.

Further to the above, poultry farmers may rely on heuristic practices of decision making. As pointed out by Marsh (2002), heuristics are cognitive short cuts which enable decision makers to make evaluations based on one or a few simple rules, thereby, avoiding the processing and time costs related to exploring an exhaustive set of possibilities. The volatile nature of the poultry industry in the region compels poultry farmers to use heuristic rules in decision making to simplify mental tasks into simpler ones. Jager and Janssen (2012) proposed Consumat, a set of four decision strategies

based on their consumers studies: repetition (do as you always do), imitation (do as your close peers do), inquiring (study what all peers do and do as the majority do), and optimizing (calculate all alternatives and choose the best). It is plausible to assume that poultry farmers use similar kinds of heuristics when faced with their complex decisions and related decision processes. By applying Consumat to decisions in the context of poultry farm management, two key issues are apparent: 1) the focus of the poultry farmer in decision making is more on the decision making process and not the final decision; and 2) the views and experiences of stakeholders in the poultry farmers' decision making arena are important to the farmers' decision making process. These two issues are key if poultry farmers' decisions have to be enhanced. This makes the decision enhancement concept (Keen and Sol, 2008) a viable approach for poultry farmers' decision making processes considering their influences.

2. Decision Enhancement: A Studio Based Approach

Decision Enhancement (DE) is grounded from sound theory and proven practice that is underpinned by the application of principles and tools for implementing Decision Support Systems (DSS). Keen and Sol (2008) define DE as a "management lens or way to look out at the dynamic and volatile domains of complex private and public sector decision-making and, increasingly, their interdependencies and necessary collaborations". DE aims at enhancing decision making processes through professional practices that fuse human skills and technology; bringing together the best of executive judgment and experience with the best computer modeling, information management and analytic methods while facilitating scenario building and evaluation, collaboration and simulation to rehearse the future (Keen and Sol, 2008).

Keen and Sol (2008) instituted decision enhancement following a studio-based approach as an improvement in the decision support systems research field focusing on ill-structured and complex decisions termed as decisions that matter. The concept of a studio is defined as a facilitative, interactive environment or shared space or forum designed around a process or processes, that contain a set of integrated tools/technologies that enable stakeholders (people) to interactively collaborate to generate and analyze possible solutions to a given problem (Keen and Sol, 2008). Studios facilitate decision making processes by providing a collaborative and interactive work space using suites (i.e. integrated sets of technology) and sets of guidelines. Suites contain domain specific information and communication services, which form building blocks and support recipes for repeatable processes (Katumba, 2016; Keen and Sol., 2008). Studios and suites comprise of services to the people that make the decisions but not a technical product as is with decision support systems (Keen and Sol, 2008).

The concept of DE is not new to solving complex problems in East Africa. Several researchers addressing decision making challenges in various domains have applied decision enhancement successfully. Mulira (2007) designed a studio that supports inter-organizational service systems in volatile environments. This studio enhances decision making within inter-organizational service systems among independent actors with diverse, technical infrastructure and scarce resources. Amiyo (2012) handled a complex situation of increased demand for business process agility in organizations in Uganda and developed a Business Process Agility Decision Enhancement Studio (BPA-DES) that provides business process analysis, simulation, collaboration and communication services. With the increased demand for business process agility in organizations, Amiyo's BPA-DES supports continuous business process improvement and enhances organizations' ability by enabling timely identification of improvement opportunities. Ssemaluulu (2012) designed and evaluated a studio for assessing information systems (IS) success in developing countries. This studio enables managers and other users of IS to collaborate in assessing IS with an aim of avoiding

potential failures of IS. Ejiri (2012) handled a complex situation of enhancing start-up processes of small medium enterprises in rural Uganda with a decision enhancement studio, which consists of services for participants in an interactive environment. This studio facilitates the mining knowledge service centres in their enterprise start up role in Uganda and could also be equally helpful in countries with similar contexts. Mirembe (2015) on the other hand used the decision enhancement approach to design the ThreNet tool to address the practical challenges of coordinating actors during the threat analysis process. The ThreNet tool provides recipes to security experts on how to infer threat likelihood of vulnerabilities and threats, threat business impact and return on investments in threat mitigation controls. Katumba (2016) developed a decision enhancement studio to support sector managers at the strategic, tactical and operational levels to enhance decisions in asset management among water utilities. These studies substantiate DE as a credible approach for increasing decision process agility in volatile and complex environments. This study is based on the premise that a decision enhancement studio can be instrumental in facilitating poultry farmers' decision making agility considering the complex and volatile business environment in which they operate.

3. Research Methodology

This research was carried out following the philosophies of design science research (Hevner and Chatterjee, 2010) and engaged scholarship (Van de Ven, 2007). The choice is because of the significance of both philosophies in addressing key challenges within the information systems discipline in a way that addresses the gap between practice and theory. Engaged Scholarship is “a participative form of research for obtaining the different perspectives of key stakeholders (researchers, users, clients, sponsors and practitioners) in studying complex problems” (Van de Ven, 2007); while Design Science is a “research paradigm in which a designer answers questions relevant to human problems via the creation of innovative artefacts” (Hevner & Chatterjee, 2010).

Design Science Research embodies three closely related cycles, namely, the relevance cycle, the design cycle and the design cycle. Following the relevance cycle, the researcher explored 13 poultry farms as case studies in order to gain an understanding of farmers' decision making practices and processes within the context of their areas of operation. Multiple cases in exploration offered a robust framework for data collection (Remenyi et al., 1998) and gave the researcher a ‘helicopter view’ of the problem landscape (Rowley, 2002). A structured interview guide was used to gather information on decision making practices, processes, influences, challenges and needs. The case studies were further beefed with focus group discussions which brought together poultry farmers and their various stakeholders. In this study, focus groups were adopted to obtain different perspectives on findings from case studies from stakeholders of the poultry industry; examining participants' shared understanding, gaining deeper insights on participants' views, attitudes, beliefs and motivation; and gaining insights into the ways in which individuals are influenced by others with in the discussions (Litoselliti, 2003). Following the research strategy of abduction, data collected was analysed and generalised to the East African context. In the rigor cycle, existing literature was reviewed in order to affirm the research problem and identify tools and techniques that would be used to design the decision enhancement studio for poultry farmers. In the design cycle, the studio functional requirements from the relevance cycle and the tools and techniques identified in the rigor cycle were used in designing the poultry decision enhancement studio (PDES). In the spirit of engaged scholarship (Van de Ven, 2007), poultry farmers and their stakeholders were engaged through focus group meetings throughout the design cycle to ensure that the PDES addressed the needs of the farmers and the poultry industry as well. The studio was then evaluated to ascertain its perceived usefulness and perceived usability in enhancing poultry farmers' decisions.

4. Results Analysis

Design of the Poultry Decision Enhancement Studio

From both the relevance and rigor cycles, insights, ideas and concepts relevant for designing the PDES were abstracted. From these, the following considerations for the design of the PDES were adopted. (i) The design should facilitate collaboration and networking among stakeholders of the poultry industry because their views enhance poultry farmers' decision making processes. (ii) The design should enable interdependence of decisions across the processes of poultry farm management i.e. planning, purchasing, rearing, marketing and collaboration. This is because of the inter-related nature of these processes and consequently their corresponding decisions. (iii) The design should encompass the three major perspectives of a decision enhancement studio (people, process, technology). (iv) The design should facilitate a transparent and regulated environment through which farmers can operate and make decisions. (v) The design should support documentation of farmers' experiences and farm information because these can be a good basis for decisions making. (vi) The design should enable information interpretation and analysis since poultry farmers' decisions are highly influenced by the information they have. (vii) The design should provide guidelines to poultry farmers on flock handling and decision making on key performance indicators of flock and farm management.

Basing the above considerations, figure 1 below presents an overview of the design of the PDES and its corresponding suites. PDES emphasizes the interaction of the five inter-related processes of poultry farm management of planning, purchasing, rearing, marketing and collaboration. The design particularly emphasizes the importance of the continuous interaction of the processes and possible overlaps in the decisions made across the processes. These processes are highly integrated and do not exist in isolation. In the PDES design, the interaction of the poultry farm management processes encompasses the three major perspectives of a decision enhancement studio (i.e. people, processes and technology) as shown in Figure 1 and described in the next sections.

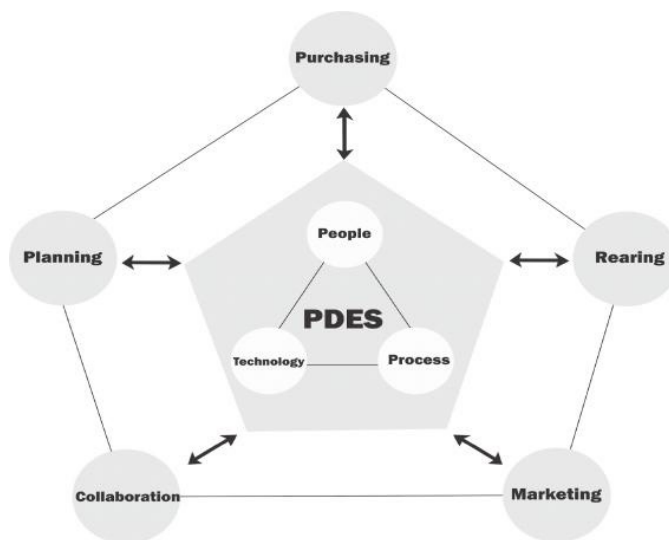


Figure 1 The Poultry Decision Enhancement Studio Design (PDES)

PDES consists of five suites of different technology enablers. The major decisions supported by the PDES suites include decisions on planning; decisions on input purchasing; decisions involved in day to day flock rearing including health and nutrition management and decisions on marketing. In the suites, factors affecting the above decisions have been put into consideration. These include: information, regulation, farmers' social networks, skills and experiences of stakeholders among others.

As guided by Gregor and Hevner (2013), the construction of the PDES and its description in terms of design principles and technological rules are steps in the process of developing a comprehensive body of knowledge. The PDES design is thus described in terms of the "ways of" framework consisting of the way of thinking, way of governance, way of working and way of modelling (Selingmann et al., 1989; Sol, 1988). The choice of this framework is based on the experience of several researchers in information systems (Katumba, 2016; Mirembe, 2015; Aregu, 2014; Ejiri, 2012; Amiyó, 2012; De Vreede and Briggs, 2005), who were able to successfully employ the framework in the design, development and implementation of information systems, approaches, methods, frameworks and solutions to problems in various domains.

The way of thinking depicts the concepts and theoretical foundations to enhance poultry farmers' decisions as well as expressing the underlying philosophy. The line of thought in this research is that the decision enhancement concept (Keen & Sol, 2008) can enhance decision processes of poultry farmers. The PDES design integrates the perspectives of a decision enhancement studio into the five inter-related processes of poultry farm management with an aim of guiding and enhancing poultry farmers' decisions. The PDES was proposed following the decision enhancement framework, which was advanced by Keen and Sol (2008) for solving human decision challenges involving complex and uncertain problems. Based on insights from Keen and Sol (2008), we define the PDES as a prescriptive environment which enhances decision making in poultry farm management through providing guidelines and interpreted and analysed information for farmers and/or farm managers, promoting collaboration of the poultry industry stakeholders and enabling transparency and regulation of the industry. The way of thinking of the PDES is based on the interaction of the three major perspectives of a decision enhancement studio i.e people, process and technology (Keen and Sol, 2008). The way of governance expresses the managerial aspects of the PDES. Keen and Sol (2008) refer to this as the governance architecture, which may include guidelines, regulations and/or shared facilities. The PDES is grounded by such guidelines for all players to facilitate all activities of the PDES community. The way of modelling identifies the models that were used for decision making (Katumba, 2016; Van de Kar, 2004; Sol, 1982). In the way of modelling of the PDES, graphical and visual representations of the poultry rearing processes particularly mirroring the key performance indicators of flock management were considered because these were of interest to poultry farmers as per findings from exploration and literature. The way of working denotes the steps that are followed in using the PDES for decision enhancement. In the way of working of the PDES, activity flow diagrams were utilised to describe the steps that lead to decision making with in each of the poultry farm management processes. This defined the decision making process for each of the inter-related processes shown in figure 1. Each of these processes represent the five suites that provide the required functionality of the PDES i.e planning, purchasing, rearing, marketing and collaboration suites.

The PDES Suites and Services

PDES consists of five suites of different technology enablers. The Planning suite enhances poultry farmers' planning decisions using three key services: information, market exploration and budgeting. These services facilitate poultry farmers to access relevant information concerning

poultry farm management and poultry flocks, explore market environments and budget for flock cycles in the farm. The purchasing suite enhances poultry farmers' decisions concerning when to purchase inputs, where to purchase inputs, how to get purchased inputs to the farm premises and how to manage purchased inputs once at the farm. It is embedded with two services i.e. Supplier catalogue and Inventory management. The rearing suite is concerned with the day to day process monitoring of flock and facilitates poultry farm management through services of flock registration, record management and monitoring of key performance indicators that impact flock growth. The marketing suite is concerned with enhancing farmers' decisions relating to the sale of the outputs of poultry farms. It provides services of advertising and buyer access. Lastly, the collaboration suite enhances continuous collaboration among stakeholders of the poultry industry whose roles, skills and experience can be tapped during a farmers' decision making processes. The suite promotes interaction and networking of all actors and across all the processes on the PDES. The PDES suites, services and supporting guidelines subsequently enhance decision making during poultry farm management by facilitating collaboration, transparency, regulation, visualization, information interpretation and analysis.

Instantiation of the PDES

Following the design described above, the PDES was instantiated to practically provide a collaborative and facilitative environment for poultry farmers and their stakeholders. There has already been lower than expected uptake of farming technologies (Bewley, 2010), mainly due to a focus on technology development without an accompanying effort by researchers to understand the challenges of on-farm application (Kutter et al., 2011). To counter this, requirements and design considerations for the PDES were based on both literature and exploration as discussed in subsequent sections of this article. Owing to the low technology adoption widely reported among African farmers (World Bank, 2007), focus was particularly put on ensuring perceived benefit and credibility as well as user friendly designs throughout the instantiation of the PDES. Against this background, the studio architecture of the PDES was based on insights from Service Oriented Architecture (SOA) principles (Aregu, 2014; Amiyo, 2012; Kamoun, 2007). The integration of SOA principles enabled the building of applications with good levels of flexibility, agility and simplification (Aregu, 2014; Keen and Sol, 2008; Kamoun, 2007). Based on the SOA principles, instantiation involved cross-platform implementation, loose coupling and set up of well-defined interfaces. The PDES was instantiated using several programming languages that included; Hyper Text Mark-up Language (HTML); JavaScript web development languages; Cascading Style Sheets (CSS); MySQL and PHP hypertext Preprocessor (PHP).

The PDES is a web-based system that is hosted on a remote server and connected to a remote MySQL database. This is to enable the different users to access the studio on their devices at any location and anytime. The PDES runs in a web browser and is compatible with browsers such as Mozilla Firefox, Internet Explorer, Opera and Google Chrome. Therefore, any user with a web browser can be able to access the studio. The PDES is hosted under the domain name <http://www.poultrydes.com> (see figure 2) and allows different users to create accounts which undergo a verification process as part of the PDES' role in addressing the challenge of inadequate regulation which was noted in this study. Users include poultry farmers, input suppliers, output buyers, poultry health experts and the different regulators of the industry. Upon log in by a registered farmer, the five suites are presented on the left hand side vertical menu in the studio. Each menu item represents a suite and these are clickable (in form of links). Upon clicking a particular suite, an expandable dropdown menu with services and sub-suites of the suite is displayed. The clicked link becomes active by giving a grey background to the main link and dropdown links thus this enables the user to easily view and track their activities on the studio. When a user clicks on a particular

service, the corresponding web page containing the content about the selected menu item is loaded and displayed. For each of the suites, the main instantiation issues were the technology tools used to provide the services and how to ensure that the services are easily accessible to users.



Figure 2 A Screen Shot of the PDES Dashboard in a Farmer's Account

Below is a full description of the instantiated PDES suites and services:

Planning Suite:

In the PDES, the planning suite provides farmers with relevant information and tools to plan for their farm businesses. The suite provides three key services of rearing information, market reports and budgeting. When the user clicks the Planning suite, the dropdown menu with Rearing information, Market Reports and Budget services is displayed. Under the “Rearing Information” service, relevant information concerning poultry farm management and flock management is presented in horizontal tabs which enable the user to switch between different sections on the same web page. Each tab represents a section of different rearing information which poultry farmers require not only at planning but throughout their processes of farm management. This information has been split into small units or learning objects and the text is accompanied by images to facilitate farmer understanding. Each section has various sub-sections shown by tabs on a dropdown menu which is displayed when the user clicks on the Arrow Down Caret (icon) next to the main section title. Tabs were used because the user is able to access sections or switch between sections without necessarily loading the pages afresh, hence avoiding high data costs. The “Market Reports” service was particularly designed to enhance farmers to explore their market environments during planning and overall management of farm and flocks. As noted by Keen and Sol (2008), the notion of decision enhancement focusses on keeping the decision maker in the loop and not taking them out of the decision making process. The “Market Reports” service provides farmers with a market guide on costs of different poultry farm inputs and outputs. In this service, MySQL database tables were created on an online server for each of the items (both inputs and outputs) involved in poultry farm management (e.g day old chicks, feeds, feeders, eggs, chicken etc.). The first time the user logs into the system, they are presented with HTML tables of different items with columns showing the

types/categories of items and columns of costs. The users are allowed to update these costs basing on their different locations and operating environments. Every table has a button to update its content whenever the user has finished entering/updating the table item(s). When a user clicks the 'update' button, the MySQL tables for the particular item is updated. This is done with the help of PHP scripts which post the user data into the online database. With this service, farmers are able to explore their market environments if the costs provided by the studio don't match their plans. Nonetheless, the studio is continuously updated with average costs of the different inputs and outputs to guide farmer decision making during the planning process. The "Budget" service facilitates farmers to prepare working budgets for flock cycles because budgets inform decision making. When a farmer clicks on the budget service, the studio displays a web page that contains a budget generation engine with budgets Tabs. The budget generation engine allows the user to select a category/type of poultry which the farmer is interested in from a dropdown menu. The farmer then enters the number of birds he/she wishes to plan for and clicks the "compute" button. The service helps the farmer to generate a budget based on the information provided as well as the costs of inputs and outputs as derived from the "Market Reports" service. The farmer can save the generated budget to the database under a name of their choice by entering a name and clicking the "save budget" button. By saving a budget, farmers are able to adopt a preferred budget for a particular flock cycle when they choose to. This budget guides in monitoring of expenditure and income of a particular flock cycle. This budget can be referred to by farmers throughout rearing and the studio uses the budget information to provide farmers with updates on expenditure and income of flocks in comparison to initial budget plans.

The Purchasing Suite:

The purchasing suite enhances poultry farmers' decisions concerning purchase of farm inputs as well as inventory management. This suite has two key services i.e. "Supplier Catalogue" and "Inventory Management" services. When a user clicks on the Purchasing suite, a dropdown menu containing 'Supplier catalogue', 'My orders' and 'My inventory' links is displayed and activated. The 'Supplier Catalogue' service is a one-stop centre where poultry farmers can find and interact with all registered suppliers of their farm inputs. When a farmer clicks the supplier catalogue, the web page loads and the studio automatically fetches all the suppliers whose accounts have been approved from the remote database and displays them on this web page. Data is fetched by PHP scripts and displayed by HTML. After loading the content of the web page, a dynamic search engine is displayed at the top of the page. The engine uses the "sortable" JavaScript plugin to perform an automated search such that as the user types in the textbox, it automatically filters the supplier list and displays suppliers with characteristics that match the provided input. Farmers can search suppliers by location or product. This enhances the farmer's decision in selecting a supplier as he/she only has to view a smaller number of suppliers who are relevant to the farmer's needs at the time. Suppliers and their details are displayed on "data cards" with each data card representing a single supplier. The data cards provide summarised information about suppliers, the goods and services they offer as well as their ratings on the studio. Ratings are generated from suppliers' ability to meet regulation requirements as well as their ability to meet the expectations of customers served on the studio. After successful purchase, the studio provides farmers with a "Review your supplier" form where farmers can share their views about their interactions with a supplier. These include quality of service/product offered and ability to meet service level agreements. After using the suppliers' products/services for three months, the studio again notifies farmers to do another review of their suppliers focussing on 'after sales service'. The ratings are captured in the studio to guide decisions about other transactions of other farmers who may want to make decisions based on these views. When a farmer clicks a particular data card, a web page containing supplier detailed information, such as products, order forms and shopping cart is displayed. Here each product is also presented on its own data card. To order for an item, one enters quantity they want to purchase and clicks the

“Add to cart” button. The studio then computes the amount payable depending on orders presented and the prices set by the supplier. The orders are reviewed by the supplier who may choose respond to the order as per terms agreed by both parties. The progress of orders as per response from the supplier is captured into a remote database with the help of PHP scripts. The ‘My Orders’ button, displays information about a farmers’ orders e.g pending, rejected, accepted but pending payments, accepted and pending delivery or delivered. PHP is used here to fetch the information that was posted in the “Supplier Catalogue” and HTML displays the content in a user friendly and easy to understand table format. A “Loop” is done through the database table in order to fetch all the orders by the given user. Using the “My Orders” button, a farmer is able to know the status of his/her orders and undertake necessary actions such as payments, delivery or pick up plans and preparation of storage space. Once the orders are successfully delivered to the farm, they are registered into the farm inventory and the “Inventory Management” service tracks them from there on. The Inventory Management service supports farmers to manage stock in their inventories. Using this service, poultry farmers are able register all purchases as they enter inventory, monitor how stocks are put to use and alert the farmer at the appropriate time for restocking before stocks run out to enhance the decisions concerning purchase or optimal utilisation. This service enables poultry farmers to maintain control over their inventories as well as make informed decisions concerning any purchases or utilization of farm inputs.

Rearing Suite:

The rearing suite provides day to day guidelines of flock handling for poultry farmers. This suite provides two services of process monitoring and record keeping and is also embedded with the feed mixing and health management sub-suites. When a user clicks the rearing link, a dropdown menu showing flock registration, my farm records, KPI reports, feed mixing and health management are displayed. The flock registration link gives a web page with tabs for registering farm flock batches and viewing all registered flock batches. A flock batch is considered as a group of day old chicks that are brought into the farm on the same day and reared together till sell off. Farms can have one or various flock batches. On the studio, the registered flock batches are presented in a simple-to-read HTML table containing summarised information on the flocks as fetched from the database. The user can click the “view more” icon and get a modal pop up with details of the selected flock batch. To register new flock, a farmer clicks the flock registration link and updates the studio with information concerning the new flock batch received at the farm. Depending on the information registered, the rearing suite generates standard guidelines for the particular flock for its entire flock lifecycle according to key performance indicators (KPI) of flock growth. The studio simplifies this detailed content to ease farmer understanding by presenting it in an easy-to-read format of simple graphs. The key performance indicators were provided by farmers during exploration. They include body weight, feeding pattern, mortality rates, water consumption, production rates, lighting among others. Besides this initial registration, farmers are able to use this suite to keep all relevant records concerning the farm. On a daily basis, farmers or their delegated assistants are encouraged to take a moment to observe flock and make key observations, which are recorded on this service. During exploration, we noted that farmers believe they have salient knowledge and like to make decisions based on their personal observations of flock. This service equips farmers to observe flock and take note of important information concerning flock.

The feed mixing sub-suite guides farmers to generate workable feed formulations for flock. While the purchasing suite encourages farmers to purchase quality and trustable whole feed, the feed-mixing suite was designed and instantiated to address farmers who may still prefer to mix their own feeds. When a user clicks on the feed mixing sub-suite, the studio automatically fetches and selects the latest or last registered flock for the user in order to carry out the computations. The user

has the ability to alter the flock by clicking on the dropdown at the top right hand side of the web page. This presents the user with flocks that exist in the database to select the one for whom he wants to generate a feed formulation. When a flock is chosen, the system automatically computes the age of the flock by using the current date and the hatching date that was provided by the user during flock registration. Based on the details of the selected flock batch, a feed mixing generation engine and an HTML table for displaying the results are generated and displayed on the web page. The user can then provide the sub-suite with specific information such as how many kilograms of feed he/she intends to mix before clicking the “Generate” button. The system computes and displays an HTML table with the feed mixtures according to the selected flock’s unique characteristics.

The health management sub-suite is a one-stop centre for all poultry health concerns. The sub-suite provides vaccination schedules for flocks and alerts farmers in time to perform vaccinations, deworming and other mandatory health procedures of flock. The sub-suite also provides a symptom checker, which guides farmers to make key observations of any symptoms of chicken and provides relevant attention points which a farmer can take about observed symptoms. On this sub-suite, farmers are also able to contact an online poultry health expert and upload pictures for relevant advice from the expert. When the Health Management link is clicked, a web page with Tabs is displayed. The Tabs include: Vaccination schedule, Local vet listing, Symptoms checker, Self-diagnosis, Poultry diseases, Drugs, and Consult expert.

Marketing Suite:

The marketing suite enhances farmers’ market decisions. It has two main services: a buyers catalogue and advertising board. When a farmer clicks on the marketing suite, the buyers catalogue, advertisement board and farm sale records are displayed in a dropdown menu. The buyers catalogue displays a web page containing registered buyers of poultry farm outputs. The web page has clickable data cards that contain the buyer information. These are similar to the ones used in the supplier catalogue of the purchasing suite. When a data card is clicked, more detailed information about a given buyer is fetched and loaded on another web page. The buyers’ catalogue is a one-stop market where farmers can sell their farm products or outputs. In this market, farmers are able to virtually interface with vetted buyers of farm produce, agree on service level agreements and complete their sales without the need for traditional forms of marketing and selling. The PDES market is an open and transparent market where farmers are availed with full market information and prices are set by market forces. It is a practical solution to problems of informal markets which impact farmer decision making processes as noted during exploration. The marketing suite also has an advertisement service where farmers can advertise their products so that buyers are able to readily find them and contact them online to finalize sale agreements before proceeding to buy. When a farmer clicks on the advertisements service, an HTML form is displayed on the web page. This form allows the user to create an advert and save it into the database by clicking the “post advert” button. The saved data will then be fetched and accessed by potential buyers. On this same page, the studio fetches the previously posted adverts and displays them together with the potential buyers to enable the user track their posted adverts. The marketing suite is also embedded with a sales management option which fetches and displays an HTML table on a web page comprising of all the information about the sales recorded by the user. To save a record, the user clicks the “Record new farm sale” button. The web page expands and displays an HTML form that the user fills in and submits to the database by clicking the “save” button. Sales management allows farmers to keep all records of sales as these can be used for decision making at different stages of farm management. The sales on this suite are reconciled with the adopted working budget in the planning suite which helps the farmer to review progress of a particular flock batch as far as planned income versus actual income is concerned.

Collaboration Suite:

The collaboration suite is a place where stakeholders of the poultry industry can engage one another and network. The suite has three services for all users of the PDES: The PDES timeline, the Chatroom and Poultry news as displayed on the drop down menu of the suite. The PDES Timeline is an intersection of users on the PDES. This service taps into the advance of social networking, which has been proven to help people build flexible relationships with remote talent (Archak, 2010) as well as support crowd sourcing of new ideas (Di Gangi and Wasko, 2009). When a user goes to the PDES timeline, different information that has been shared by other users is displayed on this web page. The Timeline is open for all users to post their views, share experiences, blog and discuss issues of concern in an open and all-involving manner. The PDES timeline also allows users to upload pictures to make experience sharing even more rational. Users can comment on a particular post by clicking the “comment” button. The chatroom service allows users to hold private chats with individuals and also facilitates group meetings. When one clicks the chatroom link, a web page containing the various users of the system is displayed. Each user is presented on a data card. Each data card has a “send message” button that enables the user to initiate a private conversation with a user of choice. The studio uses the “auto-load” and “non-load” JavaScript plugin to fetch and display the sent message in the chat space between the two parties without repeatedly loading the web page throughout the conversation. The user also has the ability to create or initiate a group chat. This is achieved by clicking on the “Create new group” link under the “GROUPS” section on the right sidebar. To initiate a group conversation, the user clicks on the group name. The studio with the help of the “auto-load” JavaScript plugin keeps on updating and displaying the activity of the users on the system by providing the status in the right sidebar. This also uses the “Sortable” plugin that enable the user to perform a dynamic search in the user list as the user types in the characters in the textbox. All conversations are fetched and displayed on the main chatroom web page which is displayed on clicking the “chatroom” link. To create a virtual group meeting, one is required to enter details about the meeting (i.e. date, time and planned duration), meeting agenda and then proceed to invite selected invitees for the meeting. Invitations are then sent to the inboxes and dashboard alerts of all invited users. At the time of meeting, all attendees are able to type and submit their views for consideration by others. The facilitator of the meeting manages the entire meeting process by calling the meeting to order, guiding the discussion, activating the meeting agenda at different times to guide the discussion and finally calling the meeting to adjournment or close. Thereafter, the PDES automatically provides all attendees with a report detailing the entire meeting proceedings. Finally, the Poultry News service is a repository for all current news concerning the poultry industry. This news can be handy in updating users about issues concerning the industry. The system fetches random poultry news across the internet. This is achieved through sending an “HTTP request” with keywords that are used to compare, match and filter content that is displayed on the web page.

Evaluation of the PDES

The Technology Acceptance Model (Davis, 1989) suggests that when users are presented with a particular information technology, a number of factors, notably perceived usefulness and perceived usability influence their decisions of how and when they will use the technology. Keen and Sol (2008) also mention the constructs of usefulness and usability as important in studio evaluation. The PDES was evaluated for perceived usefulness and perceived usability to establish the possibility of it being put to use to address the decision making needs and challenges of poultry farmers in East Africa. The concept of usefulness in the PDES evaluation involved understanding whether the PDES constituted valuable tools to enhance poultry farmers’ decision making processes while usability focused on the user-system axis.

For evaluation, the study employed a multi-method approach involving practical experimentation of the PDES by poultry farmers and expert evaluation by domain experts from the fields of information systems and poultry farming. The evaluation of the PDES involved 20 poultry farmers and 79 domain experts. The primary method for the evaluation was interviews facilitated by two separate questionnaires for the two groups of evaluation participants.

From the evaluation, we can conclude that poultry farmers agreed that the PDES has the potential to achieve its objective of enhancing poultry farmers' decisions and is easy to use. From the results, we also note that the farmers opined that usability can be better achieved with meticulous training. Domain experts also highly perceived the PDES design and the studio as useful and usable in addressing the poultry farmers' decision making challenges. Evaluators generally observed that the PDES was a good input for the poultry industry and had the potential to solve the decision making challenges of poultry farmers.

Nonetheless, we also note that participants raised concerns about the general low use of computers and internet at farms across East Africa and raised concerns about the option of an offline PDES. Despite the enormous spread of the internet, this shows that the benefits of the internet have not impacted poultry farmers in the region like other economic activities. The spread of internet usage is generally associated with positive economic outcomes such as trade and economic growth (Elgin, 2013). In Uganda alone, internet users grew tremendously from 5.7 million people in 2012 to 8.5 million people in 2014. The use of an online based PDES therefore will be part of the ICT revolution and therefore a technological development that poultry farmers can embrace especially if its usefulness and usability have been confirmed.

The importance of lobbying governments to support the efficient running of PDES through implementation of the regulatory environment envisioned by the studio was another concern raised by evaluators. While there has been an apparent disconnect between scientific knowledge and implementation in many fields (Cockburn et al., 2016), it has mainly been attributed to mismatches between the knowledge that researchers generate and that which practitioners require in their decision making and practice (Van Kerkhoff and Lebel 2006, McNie 2007). The evaluation of the PDES confirms those poultry farmers' requirements in decision making and practice can be addressed by the PDES if it is put to use by farmers and their stakeholders. In recent years, the East African countries have promoted policy frameworks to support the agriculture sectors (FAO, 2009) and the PDES is one of several ways that governments can implement policies aimed at improving the poultry industry.

5. Conclusion and Recommendation

This study originated from a need to improve management competences of poultry farmers in East Africa by enhancing their decision making processes. Design science research should make clear contributions to the real world application environment from which the research problem or opportunity is drawn in addition to knowledge contribution (Hevner et al., 2004). Van de Ven and Johnson (2006) also emphasized that engaged scholarship should not only facilitate the relevance of research for practice but also contribute significantly to advancing research knowledge in a given problem domain. From the perspectives of both engaged scholarship and design science, which are the guiding philosophies of this research, contribution to science and practice are important. Hevner et al (2004) also noted that additions to the knowledge base as a result of design science research can include any extensions made to original theories and methods during the research.

This study applied the decision enhancement approach of Keen and Sol (2008), which is grounded in the theory of decision support systems, to poultry farm management following the design science and engaged scholarship research philosophies. Decision enhancement has previously been applied to various complex situations in research within the East African region (e.g. Katumba, 2016; Mirembe, 2015; Aregu, 2014; Habinka, 2012; Amiyo, 2012). The successful application of the decision enhancement approach to the different contexts substantiated its effectiveness in addressing decision making challenges in the context of East Africa and the wider developing region.

From literature, it was noted that previous researchers from various disciplines have developed poultry farming systems and approaches focusing on specific aspects of poultry farms and customizing them to their different contexts, giving farmers a diversity of approaches and systems. Examples of these include disease management (Stevenson et al., 2007; Sanson et al., 1993), flock replacement (Negash, 2012), performance management (Ramsden and Gibbons, 2009), environmental management (Karmakar, 2007) and farm performance (Xiao et al., 2011). While these systems and approaches have been valuable additions to the body of knowledge and practice, this research identified a lack of a more encompassing approach which addresses the poultry farm management processes together considering their inter-relatedness and the consequential nature of poultry farmers' decisions across these processes. This research fills this gap because the PDES design addresses the five processes of poultry farm management together thereby supporting their inter-relatedness and consequential nature of the decisions involved. The PDES design therefore is a contribution to the body of knowledge in poultry farm management and decision making. To facilitate its application, the PDES design was instantiated into the PDES studio. The PDES studio is a facilitative, interactive environment in which poultry farmers' decisions are enhanced. PDES facilitates collaboration of farmers and other poultry industry stakeholders, provides guidance for farmer decisions, addresses challenges of complexity in the business environment such as inadequate regulation and interprets and analyses relevant information for farmers. Accordingly, the PDES is a practical contribution to society.

Future research will focus on possible generalization of the PDES design to address the decision making challenges in other livestock sectors such as dairy, piggery, rabbit farming, etc.

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Sripatum University, Thailand

Sripatum University is one of the oldest and most prestigious private universities in Bangkok, Thailand. Dr. Sook Pookayaporn established the university in 1970 under the name of "Thai Suriya College" in order to create opportunities for Thai youths to develop their potential. In 1987, the college was promoted to university status by the Ministry of University Affairs, and has since been known as Sripatum University. "Sripatum" means the "Source of Knowledge Blooming Like a Lotus" and was graciously conferred on the college by Her Royal Highness, the late Princess Mother Srinagarindra (Somdet Phra Srinagarindra Baromarajajan). She presided over the official opening ceremony of SPU and awarded vocational certificates to the first three graduating classes. Sripatum University is therefore one of the first five private universities of Thailand. The university's main goal is to create well-rounded students who can develop themselves to their chosen fields of study and to instill students with correct attitudes towards education so that they are enthusiastic in their pursuit of knowledge and self-development. This will provide students with a firm foundation for the future after graduation. The university's philosophy is "Education develops human resources who enrich the nation" which focuses on characteristics of Wisdom, Skills, Cheerfulness and Morality.

University of Greenwich, United Kingdom

The University of Greenwich is a British university with campuses in south-east London and north Kent. These include the Greenwich Campus, located in the grounds of the Old Royal Naval College in the Royal Borough of Greenwich, London, England. It is the largest university in London by student numbers and the greenest in the UK as assessed by The People & Planet Green League. The university's wide range of subjects includes architecture, business, computing, education, engineering, humanities, natural sciences, pharmacy and social sciences. It has a strong research focus and well-established links to the scientific community.

Lincoln University, New Zealand

Lincoln is New Zealand's third oldest university. Founded in 1878 as a School of Agriculture, the organisation was linked to Canterbury College, welcoming its first intake of students in 1880. In 1896, with agriculture now well established as the mainstay of New Zealand's exports, the School of Agriculture separated from Canterbury College and became Canterbury Agricultural College, with its own governing body and the ability to award degrees through the University of New Zealand. In 1961, the university was officially renamed Lincoln College, becoming a constituent college of the University of Canterbury. In 1990 Lincoln University formally separated from the University of Canterbury and became the self-governing national university that it is today. Internationally Lincoln University has academic alliances with complementary institutions in Asia, the Middle East, Europe and the Americas. These alliances support academic relationships and enhance educational opportunities for teaching staff, students and those undertaking advanced research.



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