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# CORPORATE ELEARNING IMPACT ON EMPLOYEES

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## ABSTRACT

*This paper examines the impact of corporate eLearning on employees' productivity, job satisfaction, overall job performance, and organizational commitment. The theoretical framework proposed was to determine whether eLearning usage has any correlation with these variables. This discussion is supported by conducting an online survey from ten educational institutions and two international corporations. The results concluded that eLearning usage by employees had varying correlations with job productivity, job performance, job satisfaction and organizational commitment. It was determined that the use of technology alone will not yield desired results; corporations need to determine a balance between eLearning strategies and managerial support.*

**JEL:** D29, D93, I21, M53

**KEYWORDS:** Learning, Information and Knowledge, Analysis of Education, Training

## INTRODUCTION

The demand for alternative methods for learning is increasing exponentially. The use of corporate electronic learning (eLearning) is on the rise as many corporations have adopted eLearning for employee training and learning to create a collaborative learning environment. eLearning is a technique designed to provide learning solutions using technology. Chen (2008) defined eLearning as combining technology with learning, delivered using telecommunication and information technologies, and a type of training delivered on a computer supporting learning and organizational goals. eLearning can be grouped into several categories: purely online, blended, or hybrid. Other forms of eLearning include instructor-led group, self-study, self-study with subject matter expert, web-based, computer-based (CD-ROM), and video/audio tapes. eLearning can be delivered using print (e-text, eBooks, ezines), video (streaming video, video tape, satellite transmission, cable), audio (streaming audio, audio tape), reviews and exams (electronic, interactive, paper), and communication (asynchronous- listservs, threaded discussions, weblogs, forums) or synchronous-chat (videoconferencing, and teleconferencing).

According to Adkins (2011), the cost of corporate eLearning products and services in the United States are estimated to be \$6.8 billion and by 2015, eLearning expenditures are expected to reach at least \$7.1 billion. Adkins (2011) analyzed expenditures of small, medium, large, and enterprise companies and concluded that corporations will continue to demand eLearning products and services. Out of the total eLearning market in the United States, corporations account for 37.4%, the largest segment in 2010 of the US expenditure in the eLearning market (Adkins, 2011). The growth rate for corporate eLearning products and services varies depending on the industry sector. However, the summative growth rate is on the uptrend (Adkins, 2011). The global nature of business today has caused many corporations to rely on eLearning as the future because of its ability to reach large groups of people in different areas or countries, reducing costs, reducing the environmental impact of normal business travel, and efficient dissemination of information. eLearning has come to be the preferred learning method for many individuals due to its global reach and accessibility. With a click of the internet, eLearning can take place anywhere. Some of the benefits of eLearning include (1) reduction of training expenses by using virtual solution training; (2) customizable training solutions for employees; (3) ability to maintain detailed training records, personalized to track employee performance, training needs, and other pertinent information; (4) ability to produce custom-made training courseware to meet increasing training solutions; (5) accessibility to accurate and

current training resources is available through systematic examinations and updates of eLearning materials and information from subject matter experts (SMEs); and (6) choices between classroom-based training and online training.

eLearning has become a central scholastic and teaching instrument in the current business climate for the simple reason that corporations have adopted it as part of their business operations. There are advantages and disadvantages to corporate eLearning as a training and educational tool. Investments in training and learning have an impact on employee productivity. Dardar, Jusoh, and Rasli (2011) linked employee training with employee turnover and job satisfaction. Better-trained employees work harder, and in addition, they are willing to stay in one company longer. With lower turnover, employees are more likely to improve productivity and profitability. The reverse is true where lack of employee training can negatively influence both productivity and satisfaction. According to Clarke and Hermens (2001), different factors have stimulated extensive development in corporate eLearning. Some of these factors include an increase in demand for education and training, the need for higher bandwidth to access advanced technologies, and the use of digital convergence and adaptive technology. eLearning is becoming an alternative form of education and training for corporations because of higher demand for the latest technological innovations, the creation of sophisticated technology and communication systems, and industry dissatisfaction of the responsiveness of traditional modes of delivery. Increases in eLearning usage by corporate leaders affects the work environment, as corporate leaders have to make sure eLearning implementation is appropriate in terms of scalability, access, and timeliness.

Corporate leaders continue to see eLearning as a necessity in their efforts to meet the educational and training needs of their stakeholders and organizational strategies organizational strategies. eLearning assists in keeping employees' skills current to help bottom-line performance, and many organizations are looking to embrace eLearning as a means to ensure regulatory training. The cost of eLearning is seen as the most important concern for large organizations and Small Medium Size (SMS) organizations (Brown et al., 2006). Despite the importance of continuous learning in current times, no known research has examined the viability of eLearning as compared to more traditional techniques (Kuznia, Kerno, & Gilley, 2010). In this paper, we examine the use of eLearning and how it impacts various facets of employee attitudes and performance. We gathered and analyzed data on eLearning from 10 educational and 2 businesses in the United States. The results show not only is there is tangible evidence that eLearning is an effective and viable method of information transference, but it also influences employee attitudes toward the corporation. In addition, this paper discusses some limitations regarding eLearning. The next section describes the relevant literature related to eLearning and some of the benefits as well as drawbacks. Next, we will outline the data and methodology used in the study. The results are presented in the following section. The paper closes with some concluding comments.

## LITERATURE REVIEW

This section summarizes the trends of eLearning and some of the challenges and benefits that can be attributed to eLearning. Due to the recent emergence of eLearning, the body of literature is very limited. Thus, we also review the literature on employee attitudes regarding eLearning. Chen (2008) defined eLearning as combining technology with learning, delivered using telecommunication and information technologies, and a type of training delivered on a computer supporting learning and organizational goals. The intent of corporate eLearning is to improve job performance and satisfaction, and to create a productive and competitive workforce. Corporate leaders typically embark on eLearning for different reasons, such as attempting to create a competitive advantage and the need for globalization. Other company leaders use eLearning to meet the demand for learning and reduce budget constraints. By gaining a competitive advantage, an organization's executives can align their employee needs with strategic organizational goals. With globalization, corporate leaders need highly developed communication tools such as the Internet and other eLearning tools to reach stakeholders anywhere in the world. eLearning is a cost-effective way to

reduce corporate budgets for both internal and external education. The ability to align eLearning with high-level business strategies along with the capacity to train entire workforces to support these strategies is one of the key reasons that eLearning is attractive to company executives. The first eLearning system was a teaching machine developed by Skinner in 1945 as a testing and answering model (Chen, 2008). The approach to learning changed from a cognitive to a more constructive model with such technological advances as the invention of the personal computer, computer-based training, and the evolution of the Internet.

The launch of Learning Management Systems (LMS) such as Blackboard, E-College, Sharable Content Object Reference Model (SCORM), Instructional Management Systems (IMS), and Aviation Industry Computer-Based Training Committee (AICC) would define the future of eLearning (Chen, 2008). The evolution of eLearning continued as communication and television technologies transformed learning and the development of personal computers and the evolution of the internet drastically moved learning to the next level by adding a dynamic feature to learning: learners could interact synchronously or asynchronously with each other in the learning process. eLearning has experienced explosive growth over the last couple of decades. There are several reasons for this. The current increase in eLearning usage is fueled by the commitment of businesses centering the development of their training programs in eLearning technology. External forces such as cultural acceptance of eLearning has contributed to eLearning usage for business purposes.

Both academia and businesses are embracing the advantages of eLearning. According to Schweizer (2004), at least 84% of colleges and universities offer some form of eLearning courses and there are high prospects for continual growth of eLearning in businesses. Schweizer's findings also suggested that there are no major differences between learning face-to-face and e-courses; there are high prospects for continual growth of eLearning in businesses (Schweizer, 2004). Bonk (2011) noted the emergence and increased use of online and blended learning, collaborative technology, digital books, open source software, and wireless and mobile learning. These learning trends in technology continue to transform eLearning, since many people who previously did not have access to online resources will be able to access learning materials with a click of the website from their mobile phones and computers. eLearning will be a driving force in business for educating and training employees in the workforce.

Some global companies use both Learning Management Systems (LMS) and a virtual corporate university platform to train stakeholders to ensure employees are knowledgeable with updated skills and information. With the use of LMS's, corporations can create and track individual training schedules. On the other hand, virtual corporate universities are more effective than LMS because they enable collaborative learning, facilitate the development of social training programs, allow interactive training, and support mobile learning. Bonk (2009) noted the emergence and increased use of online and blended learning, collaborative technology, digital books, open source software, and wireless and mobile learning. These learning trends in technology continue to transform eLearning, since many people who previously did not have access to online resources are now able to access learning materials with a click of a hyperlink from their mobile phones and computers. ELearning will be a driving force in business for educating and training employees in the workforce. Corporate managers' interests in this technology continue to grow due to just-in-time delivery and cost-effectiveness of e-courses (Schweizer, 2004).

The success of eLearning depends on how organizations support and train employees to use learning technologies. Other contributing forces enabling the use of eLearning include senior management commitment, user-friendly and effective courses, corporate investment in human capital, and organizational culture supporting innovations and changes (Schweizer, 2004). Honey (2000) states: "Ninety percent of users indicated that eLearning had been useful to them. Some 81% of providers and 66% of employers agreed that eLearning would bring 'huge advances' in an organization's capacity to learn. The top five preferred eLearning methods emerged as surfing the web (with 51% of users opting for this), following

specific courses (44%), reading information downloaded from the web (42%), using CD-ROMs (40%), and surfing an intranet (27%)” (p. 1). Overall, participants’ comments and views toward eLearning were positive because of the convenience of learning coming to them. Nevertheless, motivation to learn and the assumption of self-learning are two lingering doubts about the effectiveness of eLearning. The lack of the motivation to learn and the inability to decipher one’s individual preferred learning style make the use of eLearning as a mode of learning questionable.

The use of a virtual corporate university has proven to be cost effective because of its global reach, collaboration tools, and social learning. With shrinking corporate budgets, the virtual corporate university platform seems to be the preferred learning method over traditional ones because it provides an adaptable and engaging learning experience for employees. Businesses use virtual universities for new hire training, leadership and management development, continuing professional education, client training, sales training, and partner training. With 24/7 access to learning materials from a click of a PC or tablet, employees can access and track their assessment and course completion rates. According to Chen (2008):

*Seventy-four percent of organizations surveyed used synchronous learning. The reason for its high usage is that in recent years technology has advanced dramatically allowing for a more seamlessly integrated online training approach. Synchronous learning coupled with technology allows for greater interaction between instructors and learners including the opportunity to develop ideas, solve complex problems, and develop critical thinking skills. This type of creative thinking produces a competitive advantage for companies who desire to develop these strategic types of skills within their employees. (p. 3)*

Schlag (2001) stated that employers, in their effort to switch from using manuals for training, created and implemented eLearning as an efficient and cost-effective way of providing training to employees. This was done by converting manuals to web format accessible to employees at all times. Schlag (2001) also stated that eLearning and eTraining are synonymous and that the success of eLearning has value to both customers and employees. To yield optimal results in eTraining, blended training has to be utilized, where eTraining is combined with traditional training.

eLearning trends continue to be positive because of the convenience of learning coming to people as opposed to people finding it. The global nature of eLearning has led to increased usage of online universities or virtual corporate universities as training platforms for employees. At the same time, without motivation from top management, these trends will not be implemented as part of corporate eLearning strategy. Newton and Donga (2007) provided employers’ viewpoints and justifications for corporate involvement in eLearning. These include increases in knowledge, efficiency and productivity of employees, ease of implementation, time-flexible savings, and cost savings. Other benefits of eTraining are the ability to deliver eTraining anywhere, anytime, and to anyone; just-in-time training; personalized training leading to higher content retention by learners; effective delivery compliance training; higher collaboration and interactivity; better monitoring system on employees’ performance and progress; and customized and personalized training options.

With rapidly changing learning technologies, eTraining implementation is not simply just purchasing sophisticated learning management systems. It also requires training employees properly to use the new technologies. As eTraining is a growing international business, it is critical for employees to be updated to provide an effective and efficient working environment (Newton, & Doonga, 2007). The key driver to rapid eTraining growth is the knowledge economy and workers; and the key weakness is the corporation not aligning corporate business objectives to eTraining to track performance and profitability. Without proper evaluation tools to analyze the quality of eLearning in corporations, justification of continued growth in eTraining is questionable. Top and Gider (2013) attempted to explain the relationship between job satisfaction and organizational commitment. What they found was that there was a significant and positive

relationship between job satisfaction and organizational commitment (Top & Gider, 2013). Kuznia (2006) argues that employees who receive proper training tend to show higher levels of organizational commitment and are willing to go the extra mile to support their teams and accept group goals. Ozturan and Kutlu (2010) examined employee satisfaction with corporate eLearning programs using regression analysis to determine the influence of gender, age, work experience, education level, job level, and eLearning interactivity level of the employees. When the predictor variables were tested using regression analysis, they were determined to be statistically significant, with job level having the highest maximum impact on employee satisfaction. Yap, Holmes, Hannan, and Cukier (2010) investigated the relationship between training and the effectiveness of organizational commitment and satisfaction and they revealed that employees who perceived training to be effective were more committed to their organizations than those who saw training as ineffective. The contributing factors of employees' satisfaction and commitment include physical environment, internal support, job level, training level, organizational support, and learning flow. Therefore, management should be privy to these factors and ensure that they are considered carefully so that the full benefits of eLearning and eTraining are realized.

Being that eLearning is an important tool for educational institutions and other industries, it is important to understand how employee productivity is impacted by eLearning. A study by Sarmiento (2010) to analyze the use of eLearning in the hotel industry showed that eLearning increases productivity and production volumes. Moller, Foshay, and Huett (2008) stated that eLearning is both productive and unproductive. Most educational institutions saw the growth of distance learning and use eLearning to promote educational and training programs. However, the authors noted that people are finding it difficult to balance models of quality and growth of eLearning. eLearning is seen as a double-edged sword.

Some corporations benefit from eLearning as a cost containment and training tool. They use eLearning to develop and train their employees, reduce corporate training costs due to savings on training and travel expenses, and as a tool to drive sales and profitability. Some challenges with eLearning implementation include employees' resistance, high initial investment cost, and inconsistent eLearning evaluation methods. Management should work closely with employees and get their buy in so that they can transition and implement programs smoothly. The success drivers of eLearning depend on the quality of the learning experience and the level of technological advancement. It is suggested that an employees' level of satisfaction and commitment vary with eLearning implementation, but other factors such as physical environment, internal support, job level, training level, organizational support, and learning flow may also have an impact. Top management must be knowledgeable about these factors and ensure that they are present in the organizational culture for eLearning implementation to be a success.

In summary, eLearning continues to be a driving force in many organizations as learning and training tool. Technological advancements, especially the implementations of different learning management system (LMS) platforms, introduction of web 2.0, and technological innovations, have facilitated the need for eLearning usage in many organizations. It is important to understand the impact of eLearning from not only the financial aspect, but also from a humanistic perspective. Although it is used as educational and training tool for most corporations with numerous benefits, at the same time, most corporations continue to spend more money without knowing the impact on the learning environment, especially on employee satisfaction.

## **DATA AND METHODOLOGY**

Until this research, there had not been a survey developed to measure the association of eLearning and employee satisfaction, employee commitment, and job performance. To develop this survey, the principle investigator reviewed all the available research on eLearning to look for common attributes related to eLearning and employee performance and satisfaction. These questions were then compiled into a 36 item Likert type scale using those attributes adapted from research on eLearning. All constructs within the

employee online survey were defined and most of the survey questions included a five-point Likert scale of (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree. To be eligible to take part in the study, participants must have had at least used an eLearning management system or taken an eLearning course for employment training purposes, and be a participating corporate employee. The survey distribution included a sample size of 250 employees from each of two United States corporations that use eLearning for training and development. These corporations were ABC System of schools and XYZ International located in Cincinnati, Ohio area. Overall, 12 institutions took part in the study. One of the corporations that took part in the study had an international presence. This means that those companies have subsidiaries, do businesses in other countries, or serve some international customers. The corporations included met the participation requirement of having used eLearning as a tool for training and/or learning by employees. A memo was provided to corporate management to be passed on to potential participants that stated corporate approval of research participation, the nature of the study, and to inform employees that they will be contacted. Employees took the survey online using a survey link. The survey was open to participants for up to 14 days per company, and the survey was disseminated over a two-month period. Demographic information such as age, gender, employment status, educational experience, and work information were collected.

### Data Processing and Analysis

The use of regression analysis helped to analyze employee productivity, job performance, and job satisfaction relating to eLearning. An Analysis of Variance (ANOVA) was run to test the means of the groups (part-time, fulltime, managers, and regular employees). By using ANOVA, comparisons were made by computing the F-test. Smaller F statistics showed a bigger difference between groups and a larger F statistics showed smaller differences between groups. The researchers expected the F statistic to be larger than 1 to accept the research hypothesis. By knowing the impact of these differences on corporate eLearning investments, the researchers were able to predict future eLearning investments impact on corporations. All the variables were allotted a value to help in coding the outcomes. This allowed performing quantified analysis using statistical analysis software. A five-point Likert Scale was used in summation of participant responses to quantify data with the assistance of PASW software. Data analysis was done using regression analysis and other appropriate measures to determine relationships between dependent variables (employee productivity, job satisfaction, and job performance) and the independent variable (eLearning). The use of the standard statistical analysis tool helped to examine groupings, associations, and cross-tabulations. Before applying any test, the researchers checked to see if the data were normally distributed using the Shapiro-Wilk test. This test works well with all sample sizes. To determine differences between full-time and part-time employees, an ANOVA test was used to compare the differences between the means. The researchers believed that full-time and part-time employees have eLearning differences and that could have impacted their productivity, performance, and job satisfaction. The ANOVA test helped sort out those differences.

### Limitations

Potential threats to the success of this research included expenses in data collection and analysis, length of research, and the lack of technical knowledge of eLearning systems by participants. Some of the expenses in data collection and analysis included paying for a premium online survey account, and hiring a statistician. To ensure that participants completely understood the research study, definitions of terms of different eLearning tools and systems were elaborated in lay-man's terms. By educating participants on the study, data collected was more reliable and more participants were willing to take part in the study. To reduce costs, most of the research, the survey, and communication with participants and corporate managers were conducted using an online survey, phone calls, and emails. In addition to getting permission from corporations to take part in this research study, the cost of the research was reduced with the support from the corporations that authorized the research.



**RESULTS AND DISCUSSIONS**

This research investigated the impact of eLearning on corporate employees. More specifically, the research explored how employees’ productivity, job performance, and job satisfaction were impacted by using eLearning. Corporations use various forms of eLearning processes and applications, such as computer-based training (CBT), Internet-based training (IBT), web-based training (WBT), and many others. eLearning can be instructor-led, self-paced, or blended. For the purpose of the current study, the terms eLearning and eTraining were used interchangeably. This section presents the results of the eLearning survey analysis. Overall, 341 employees took the eLearning research survey. The demographics are shown on the table below.

Table 1: Demographic Factors

Age			Gender			Emp Status			Mgr Status		
Value	Ct	%	Val	Ct	%	Val	Ct	%	Val	Ct	%
18-24	8	2.7	M	108	35.8	FT	231	76.5	Y	105	34.8
25-34	60	20.1	F	194	64.2	PT	56	18.5	N	197	65.2
35-44	96	32.1				Oth	15	5			
45-59	107	35.8									
60+	28	9.4									
Experience			Edu. Level			Company Size					
Val	Ct	%	Val	Ct	%	Val	Ct	%			
<1 yr	41	13.6	Some college	19	6.3	<100	103	34.1			
1-5 yrs	166	55	HS	7	2.3	101- 499	70	23.2			
6-10 yrs	59	19.5	Assoc Degree	24	8	500- 1000	41	13.6			
> 10 yrs	36	11.9	Bach. Degree	80	26.5	>1,000	88	29.1			
			Grad Degree	135	44.7						
			Prof Degree	37	12.3						

*This table shows the demographics of respondents to this study. Age is the respondent age in years. Gender is the respondent’s reported gender. Emp Status is indication of fulltime employment, part time employment or other. Mgr Status is indication of role in the organization – managerial or non-managerial. Edu Level is the respondent’s highest level of education completed. Company size is the number of employees in respondent’s organization.*

The majority age of surveyed participants ranged from 25 to 34, 35 to 44, and 45 to 59, which accounted for 20.1%, 32.1%, and 36.8% respectively. The average age of participants surveyed was 39 years. Female participants accounted for 64.2%, whereas male participants accounted for 35.8%. The majority of participants were full-time employees, who accounted for 76.5% of responses. Part-time employees accounted for only 18.5%, whereas other employee groups amounted to 5%. Participants who said they were managers counted for 34.8% whereas non-managers accounted for 65.2%. In term of participants’ eLearning experience shown on Table 1 above, 55% of participants had 1 to 5 years of eLearning experience, 19.5% of participants had 6 to 10 years, 11.9% participants had at least 10 years, and 13.6% employees surveyed had less than one year. As shown above, the educational level of participants varied: 6.3% had some college but had not completed their degrees, 2.3% had high school diplomas, 8% had associate degrees, 26.5% had bachelor’s degrees, 44.7% had graduate degrees, and 12.3% had doctorate or professional degrees. Finally, from Table 1 above, corporations of at least 500 employees accounted for 42.7% (13.6% and 29.1% combined) of participants, while 57.3% (34.1% and 23.2% combined) of participants came from corporations with less than 500 employees.

With 41.9% of study participants saying their jobs have been easier and 63.5 % stating that eLearning has been beneficial to their work, it is important for corporations to rethink the way eLearning initiatives are

implemented in their organizations. eLearning continues to become a leading instructional method in workplaces across organizations of various sectors and of varying sizes (Kramer, 2007). How employees react to eLearning can affect the overall performance of the organization. Employee survey responses show that they are able to understand their job duties better and have had an increase in managing ability, efficiency, and job skills. According to Kramer (2007) in a study that used the Kirkpatrick Model to measure behavioral changes on the job, learning increases for participants that react favorably to eLearning, and job behavior increased if learning increased. Employees with higher levels of eLearning should show improvement in productivity and job performance, and a reduction in turnover, cost, and absenteeism. However, current eLearning structures are not always successful. Some employees surveyed thought that the current work environment is not suitable for eLearning and they had to take extra time outside work to learn various eLearning tools, which causes inconvenience and stress.

The result of this study shows that the majority of employees had used eLearning at work. At least 91.5% participants stated that they have used eLearning at work of some kind. Only 8.5% stated they have never used eLearning. The most common type of eLearning usage is a mix of both asynchronous and synchronous eLearning that represented 52.6% of participants. For those who have used eLearning, 40.2% were asynchronous eLearners as opposed to 18.9% participants who have used synchronous eLearning. For clarification, asynchronous eLearning is learning done at one's own pace and schedule. Synchronous eLearning involves a specific time enrolled in a class. Pertaining to eLearning modes used at work, 80.5% of participants have used Internet Based Training (IBT) or Web Based Training (WBT). 26.7% and 38% of respondents have used Computer-Based Training (CBT) and Distance Learning respectively. The common information/communication/learning tools used at work by most participants were mobile devices (58.8%), followed by web conferencing (57.3%) and books/online libraries (51.9%). Social media and CD-ROM/DVD usage accounted for 28.7% and 23% respectively.

An overwhelming 97.9% of participants said that their companies supported eLearning. At the same time 71.3% mentioned that their companies provide eLearning support and materials to enhance their learning experience. 62.1% of participants faced difficulty when using eLearning whereas 37.9% have not experienced any significant difficulty. At least 82.2% had access to eLearning tools for training and development at work. However, only 41% used eLearning as a preference for training and development. 77.7% participants got eLearning support from their companies. 89.5% of employees surveyed have the technological skills needed to use eLearning tools. 56.4% of participants believed their career opportunities and advancement from eLearning have been enhanced by using eLearning. When it came to experiencing technical difficulties when using eLearning, 42% have faced technical difficulties and 36.5% have not. 69.1% of employees stated that their companies continue to invest in eLearning initiatives and 77.5% mentioned that eLearning is an effective tool for training and development. 39.2% of participants believed that eLearning technical issues are resolved quickly whereas 14% disagreed with statement. Lastly, 58.6% of employees were aware of eLearning trends that impact their jobs and 37% were not.

#### eLearning versus Employee Job Satisfaction

Overall, 74.9% of participants stated that eLearning leads to higher employee satisfaction as shown on Table 2 below. Only 25.2% stated that eLearning does not lead to higher employee satisfaction. However, From Table 3, only 38.1% (combination of 28.9% and 9.2%) were more satisfied with their jobs due to eLearning usage, while 17.5% (combination of 3.8% and 13.7%) of participants were less satisfied with their jobs because of eLearning. An overwhelming 42.2% of participants answered neutral regarding how eLearning impacted their job satisfaction.

*eLearning versus Job Performance:* 41.9% (33.3% and 8.6% combined) of participants said their job responsibilities have been easier because of their eLearning experience. However, 19% (4.1% and 14.9% combined) disagreed with the above statement and nearly 36.5% of participants answered neutral to this

statement. In addition, 63.5% (16.8% and 46.7%) mentioned that eLearning has been beneficial to their work, 9.2% (1.9% and 7.3%) disagreed and 24.4% were neutral to statement. About 48.1% (38.2% and 9.9%) of participants stated that eLearning investments by their companies have enhanced their job performance. 11.8% (1.3% and 10.5%) disagreed with statement and 36.9% were neutral.

*ELearning versus Employee Productivity:* In answering the impact of eLearning on employee productivity, the researchers uncovered the following statistics. 72.8% of employees who took survey said that eLearning leads to higher employee productivity and 27.2% stated otherwise. However only 41.7% (30.9% and 10.8%) gained higher productivity by using eLearning, 39.2% answered neutral, and 16% (2.6% and 13.4%) did not gain higher productivity by using eLearning.

*ELearning versus Employee Organizational Commitment:* Overall, 66.5% of participants believed eLearning leads to higher employee organizational commitment whereas 33.5% stated otherwise. However from Table 3 below, only 32.5% (24.2% and 8.3%) of employees stated that they are more committed to their companies because of their eLearning experience, 23.6% (2.9% and 20.7%) disagree with this statement, and 40.5% of surveyed employees were neutral.

Summary Table (Job Satisfaction, Job Performance Employee Productivity, Organizational Commitment)

Table 2: Employees Perceptions on Elearning

Value	Satisfaction		Productivity		Commitment	
	Count	Percent	Count	Percent	Count	Percent
Yes	250	74.9%	244	72.8%	222	66.5%
No	84	25.2%	91	27.2%	112	33.5%

*This table shows employee perceptions of eLearning. Satisfaction is the indication of how employees perceived eLearning impacting their job satisfaction. Productivity is the indication of how employees perceived eLearning impacting their productivity. Commitment is the indication of how employees perceived eLearning impacting their job commitment.*

Table 3: Employees Attitudes Toward Elearning

Value	Satisfaction		Performance		Productivity		Commitment	
	Count	%	Count	%	Count	%	Count	Percent
Strongly disagree	12	3.8%	13	4.1%	8	2.6%	9	2.9%
Disagree	43	13.7%	47	14.9%	42	13.4%	65	20.7%
Neutral	133	42.2%	115	36.5%	123	39.2%	127	40.5%
Agree	91	28.9%	105	33.3%	97	30.9%	76	24.2%
Strongly agree	29	9.2%	27	8.6%	34	10.8%	26	8.3%
N/A	7	2.2%	8	2.5%	10	3.2%	11	3.5%

*This table shows employee attitudes toward eLearning. Satisfaction is the indication of employees' view of how satisfied they are at their jobs due to eLearning usage. Performance is the indication of employees' view of how their performance has been influenced as a result of eLearning investments by the organization. Productivity is the indication of employees' view of productivity changes by using eLearning. Commitment is the indication of employees' view of how committed they are to their organization as a result of their eLearning experiences.*

Pearson Correlations Summary of Key Variables

The Pearson correlations of the variables for the study were computed to find relationships among the variables and are summarized on Table 4 below.

The summary above from Table 4 shows that there are both significant relationships between the independent and variable dependent variables. First, eLearning usage by employees has a weak negative

correlation on their job productivity and job performance. This means increases or decreases in eLearning usage cause decreases or increases in job productivity and job performance respectively. Furthermore, there are strong positive Pearson correlations ranging from 0.662 to 0.750 among all the dependent variables (job satisfaction, job productivity, job performance, and organizational commitment) as shown on Table 4.

Table 4: Pearson Correlation of Key Variables

	Q1	Q16	Q19	Q23	Q24
How often do you use eLearning at work? Q1	1	-0.099	-0.135*	-0.115*	-0.002
I have been more satisfied at my job due to eLearning usage. Q16	-0.099	1	0.733**	0.662**	0.714**
I have gained higher productivity by using eLearning. Q19	-0.135*	0.733**	1	0.750**	0.713**
eLearning investments by my company have enhanced my job performance. Q23	-0.115*	0.662**	0.750**	1	0.701**
I am more committed to my company because of my eLearning experience. Q24	-0.002	0.714**	0.713**	0.701**	1

\*. Correlation is significant at the 0.05 level (2-tailed).  
 \*\*. Correlation is significant at the 0.01 level (2-tailed).

*This table shows the Pearson's r when comparing the variables that were studied.*

For instance, increases or decreases in one dependent variable will increase or decrease the other dependent variables significantly. There is a strong correlation between employee satisfaction and productivity, job performance, and organizational commitment as indicated above as 0.733, 0.622, and 0.714. This implies that when employees are satisfied, they become more productive, their job performance is enhanced, and they become more committed to their organizations. In addition, there is also a strong correlation among productivity versus job performance and organizational commitment, as indicated above as 0.750 and 0.713 respectively. Finally, the correlation between job performance and organizational commitment is very strong, as the Pearson's r is indicated as 0.701.

### Corporate and General Elearning Issues

From the survey results, 97.4% of employees who participated mentioned that they got eLearning support from their companies. When employees were asked if they faced difficulties when using eLearning, 38.2% said no, whereas 61.8% said yes. 42.3% of employees experienced technical difficulties when using eLearning technology as opposed to 36.5% who did not and that 39.2% believed technical issues involving eLearning were resolved quickly. 82.2% of participants had access to eLearning tools for training and development at work, and 77.7% got support from eLearning. An overwhelming 89.5% of employees had the technical skills needed to use eLearning tools. In addition, 56.4% believed that their career opportunities and advancements from eLearning experience were enhanced and that 41% preferred using eLearning for training and development. A majority of employees, 71.3% stated that their companies provided eLearning support and materials to enhance their learning experience and 69.1% mentioned that their companies continue to invest in eLearning initiatives. 74.5% of survey participants stated that eLearning was an effective tool for training and development. With eLearning trends or changes, 58.6% were aware of eLearning trends or changes that affected their jobs.

The benefit of eLearning cannot be achieved in a vacuum. It needs commitment from top management, and end users should be part of the planning and implementation process of eLearning initiatives. The researchers believe that the more comfortable employees are with using eLearning systems and software, the easier it is for them to accept new changes in the organization. Acceptance of eLearning is also enhanced by confidence that upper management will provide the much-needed training and support for the new eLearning technology. With education and training using Information Communication Technologies (ICTs), employees are in a better position to broaden their technology skills and thrive in the 21st century as effective eLearners. Providing education to employees on ICTs will enable them to be more comfortable

and productive during training sections organized by their corporation managers. Employees will continue to gain more positive attitudes toward their work because of the availability of personalized training. The overall benefit of eLearning is that it bridges the digital divide among employees. The digitalization of education is shifting. Teachers are now becoming Electronic Teachers, and the education system is being transformed to Electronic Education. Corporate executives who provide more education and training to their employees have the ability to gain a competitive advantage because they will not only recruit, but will retain talented, skilled individuals. The success of a company relies on educated employees. It is therefore important for upper management to involve all stakeholders when making decisions that affect all employees. Employees are less likely to resist eLearning training programs when they know the reasons and significance of such trainings. Age, gender, employment status, managerial status, and company size had an insignificant impact on eLearning usage in this study. However, the following findings are worth noting:

*The learning style for eLearners varies with different ages. With 52.2% of employees in this study aged between 35-44 years, upper management should be cognizant of age differences when designing eLearning solutions for their employees.*

*With employment status, it is expected that full-time employees will spend more time using eLearning tools, systems, and programs; therefore, they have an advantage over part-time employees. Because the majority of participants (over 76%), are considered to be full-time employees, it makes sense for initial eLearning investment strategies in corporations to first target the full-time employees and later target part-time employees.*

*It is expected that managers (35% of the respondents) should be able to train their employees on eLearning-related tasks, and corporate eLearning strategies should ensure that managers get the necessary training so that they can support their employees.*

### Work-Related Elearning Responses and Implications

The importance of eLearning cannot be overemphasized. With at least 91% of study participants using eLearning at work, corporate leaders should think strategically before making significant eLearning technology investments. The future of global learning in higher education and corporations starts with eLearning. With little or no geographical constraints, eLearning empowers employees to manage their own learning. In addition, eLearning has a significant impact on an organization's bottom line. Because everyone learns differently and a majority of employees use eLearning, the more comfortable employees are with different eLearning modes such as CBT, WBT, and distance learning, the less resistance there will be to technological changes in eLearning within organizations.

According to this study, a majority of employees use both asynchronous and synchronous eLearning, and WBT. The most preferred learning tools are mobile devices, web conferencing, books, and online libraries. Corporate managers should focus more attention on these areas to ensure alignment with eLearning trends in the industry. This can be done by increasing exposure to information communication technologies and learning tools by making them more available to employees at work. With increased exposure to eLearning technology, employees would be more likely to pick up on eLearning technologies and skills, making it easier to implement eLearning initiatives. Corporations benefit from successful eLearning implementations.

### Corporate Support and General Elearning Usage

From the study, it was clear that employees who received support from eLearning initiatives were aware of eLearning trends, had ready access to eLearning tools, had the technical skills to use eLearning, and had

enhanced career opportunities and advancements from eLearning experiences. Some employees also believed that their company leaders continued to invest in eLearning and that eLearning is an effective tool for training and development. However, employees continue to face difficulties when using eLearning. McCullough (2005) and Reich & Scheuermann (2003) stated some challenges of eLearning: managers are too busy, unaware or disinterested in eLearning; lack of appropriate infrastructure; they cannot justify the need; and/or they cannot identify their training needs. The lack of formalized training programs caused employees to have eLearning difficulties as reported in these studies (McCullough, 2005; Reich & Schuermann, 2003). Therefore, corporations should take the time to come up with formalized and structured training for any eLearning initiative or technology implementation.

When corporations delegate the implementation of training needs at local levels without a specific direction from upper management, this can cause problems for employees during eLearning implementation and threaten the overall success of eLearning programs. All necessary training should be available to managers, and there has to be training experts manager's can contact for help when needed. Without commitment from managers, even formalized training programs might not be productive.

Leary and Berge (2007) stated that managers' lack of commitment for eLearning is usually a challenge reported by small organizations. There is a wide array of issues involved with managers' preferences, decision-making, prioritizing, and awareness. Leary and Berge (2007) go on to state that if they have a different learning characteristic or if they are accustomed to more traditional learning methods, the adoption of eLearning receives more resistance (p. 1).

Most importantly, top management should justify the need for eLearning and should involve end-users during eLearning implementation. When employees are onboard early, they tend to do their best to support eLearning efforts. To overcome these eLearning disconnections, managers should have a clear organizational strategic plan, a tech-savvy staff, and a good training staff combined with committed managers. Our results showed the majority of employees (72.8%) stated that eLearning led to higher productivity. However, only 41.7% gained higher productivity at work. This implies that eLearning alone cannot lead to improved productivity. Managers should have effective systems to train employees on new eLearning system usage. Higher productivity and satisfaction usually occurs when employees are comfortable using any LMS. With proper training, employees would be more efficient, knowledgeable, and confident using different LMS.

The majority of employees surveyed (74 %) believed that eLearning leads to higher employee job satisfaction, but only 38% were satisfied with eLearning at their job. This disconnection is probably due to the lack of proper training and usage of eLearning systems and the fact that few employees use eLearning on a daily basis. Even those who use eLearning regularly are not properly equipped with the training needed to be effective and efficient. The researchers agreed with a study by Voce (2007), which reported that employees were not currently using eLearning, because they were not sure of eLearning possibilities, they did not have the time, and they thought eLearning was not relevant to their jobs. The current study found that there were employees who lacked confidence in, and disliked eLearning technology. Surveyed participants expressed dissatisfaction for the following reasons: poor quality of eLearning products, lack of accessories, lack of support in learning a new system, and poor Internet connectivity. According to the current study's results, such dissatisfaction has contributed to lower job satisfaction. However, the results also showed that there were satisfied employees who were able to enjoy current technology, because they learned at their own pace and had access to training opportunities that led to development. The impact of eLearning on job performance cannot be underestimated. eLearning continues to become a leading instructional method in workplaces across organizations of various sectors and of varying sizes (Kramer, 2007). With 41.9% of study participants saying their jobs have been easier, and 63.5% stating that eLearning has been beneficial to their work, it is important for corporate leaders to rethink the way eLearning initiatives are implemented in their organizations. How employees react to eLearning can affect the overall performance of the organization.

Employee survey responses show that they are able to understand their job duties better and have had an increase in managing ability, efficiency, and job skills. According to Kramer (2007), in a study that used the Kirkpatrick Model to measure behavioral changes on the job, learning increased for participants who reacted favorably to eLearning, and job behavior increased if learning increased. Employees with higher levels of eLearning should show improvement in productivity and job performance, and a reduction in turnover, cost, and absenteeism. However, current eLearning structure is not always successful. Some employees surveyed thought that the current work environment is not suitable for eLearning and they have to take extra time outside work to learn various eLearning tools, which causes inconvenience and stress. The study showed a strong positive correlation among job satisfaction, job productivity, job performance, and organizational commitment. This implies that satisfied employees are likely to be more productive, be committed to their organizations, and work harder on eLearning initiatives to improve their job performances. Managers should not only focus on technology to be successful. Technology should be used as an enabler. The focus should be on making sure employees feel supported.

### Suggestions for Further Research

The researchers suggest future researchers explore a larger sample size and increase the number of organizations used in the study to cover different industries. Data collection and analysis should be computed on each company to get a more reflective result that represents a specific company instead of general results representing different companies. In doing so, correlation can be done of individual corporate habits as well as comparison with other corporations. Additionally, there should be inclusion of additional demographic factors not explored in this research such as race, marital status, type of eLearning, and others. With over 91% of surveyed employees using eLearning at work, the researchers believe that different learning styles will impact the effective use of eLearning and successful implementation of eLearning systems and programs. Future researchers should include how learning styles impact the success of eLearning usage and its impact on employee productivity and overall job satisfaction. Furthermore, the outcome of the study will be different if the survey was conducted in other corporations in different industries such primary, secondary, tertiary, and quaternary. For future research, more corporations from different industries should be used in the study. The researchers believe that the more technology-based any industry is the more likely employees are likely to benefit from eLearning.

### **CONCLUDING COMMENTS**

This study explored how the use of eLearning in employee training impacts employee satisfaction, productivity, and job performance. The theoretical framework proposed to determine whether eLearning usage correlates with organizational commitment of employees. Study results showed that out of 341 participants surveyed, approximately 38% were satisfied with their jobs, 42% mentioned that job responsibilities have been easier, 48% saw improved job performance, and nearly 42% increased productivity. Approximately 32.5% were more committed to their organizations because of eLearning experience. The most difficult limitation to overcome when implementing eLearning is resistance. eLearning will not be successful in a company culture that is opposed to change. Organizations can lead change by creating climate for change, engaging and establishing the organizations, and implementing and sustaining the change. Kotter (2007) stated that leaders must do eight things right in order to successfully transform their organizations. These eight steps in Kotter's change model are increase urgency of change, build a team for change, develop a clear vision, communicate and share the vision, empower people to clear obstacles, create short-term goals or wins, show persistence, and make the change permanent (Kotter, 2007). Future studies might use other methodologies to further quantify the differences noted here.

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# DETERMINANTS OF BALANCED SCORECARD USAGE: INDIRECT CORRELATION THROUGH ATTITUDINAL FACTORS

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## ABSTRACT

*The successful implementation of Balanced Scorecard (BSC) requires a positive attitude toward the BSC. Specifically, the BSC should be perceived as simple to use and of great usefulness. This study develops the measurement of BSC usage and examines whether the determinants impact the BSC usage through attitudinal factors. Most existing studies have quantified the BSC usage by identifying the stages of BSC application whereby the discrete step of usage is reflected rather than the degree of usage. This research work thus develops a measurement to reflect the degree of BSC usage by taking into consideration the key characteristics of BSC usage and their theoretical weights. In addition, this study examines the determinant-innovation relation by drawing on the organizational innovation theory and the technology acceptance model. In particular, this research article seeks to determine whether top management support and training are associated with the BSC usage through the attitudinal factors of perceived ease of use and perceived usefulness. Based on 73 complete questionnaires, it is found that top management support and training are indirectly associated with the BSC usage through the perceived ease of use and the perceived usefulness factors. These findings highlight the vital role of the attitudinal factors as the mediating factors.*

**JEL:** M190, M490

**KEYWORDS:** Balanced Scorecard, Attitudinal Factors

## INTRODUCTION

The Balanced Scorecard (BSC), which was devised in 1992 by Kaplan and Norton, is one of the most significant developments in management accounting as it has revolutionized how a firm's performances are measured (Atkinson et al., 1997). The BSC offers a balanced view of strategic non-financial and financial measures that can be illustrated in the causal linkage (Kaplan, 2010). Due to its successful accounts, the BSC has become an interesting research topics in the field of management accounting. Most prior research studies that focused on the BSC application rate, the determinants and effects of BSC implementation, nevertheless, simplistically equate the BSC usage with the stages of BSC application. In addition, these research works identified and classified the BSC application stages into the discrete categories of non-implementation and implementation stages. This classification however fails to reveal the degrees of BSC implementation between two different firms in the same implementation stage category. That is, two BSC-implementing organizations would be classified as firms in the same category of BSC implementation stage even though one company has a higher degree of BSC implementation than the other. Most prior studies highlight the importance of external factors and the firms' characteristics as they are directly associated with the BSC implementation. Interestingly, the organizational innovation and the technology acceptance model have suggested that attitudinal factors are mediating variables in the context of organizational innovation implementation (David, 1989; Damanpour, 1991; Roger, 2003).

It is thus likely that the external factors and the firms' characteristics are associated with the BSC implementation through attitudinal factors. However, a limited number of research studies have quantitatively examined the vital role of attitudinal factors as the mediating variables in the context of BSC implementation (Shutibhinyo, 2011). This research study aims to develop the measurement to better reflect the degree of BSC usage by taking into account the key characteristics of BSC and their theoretical weights.

The proposed measurement would enable future researchers to determine the degree of BSC implementation and to examine the determinant-innovation relationships, particularly the attitudinal factors, in the context of BSC implementation. This research article is thus expected to contribute to the existing body of knowledge in the area of BSC with the proposed measurement of BSC usage; and highlights the importance of attitudinal factors as the mediating variables. The organization of this research paper is as follows: The first section is the introduction section. The second section is a brief review of related literature, followed by the research methodology in the third section. The fourth section presents the main findings. The last section provides some concluding comments.

**LITERATURE REVIEW**

Kaplan and Norton initially invented the BSC as a multi-dimensional performance measurement system with a collection of financial and nonfinancial measures (Kaplan & Norton, 1992). The BSC has since been transformed into a strategic performance measurement system (Kaplan & Norton, 2001, 2008). Firms have implemented the BSC to translate their strategy into operational terms by which they properly align the corporate strategy with those of business and supporting units (i.e. Alignment), to effectively communicate the strategy to their employees (i.e. Communication), and to provide feedback and promote learning (i.e. Feedback). Following the conceptual framework of BSC developed in Shutibhinyo’s works (2011, 2012, 2013), this research paper has summarized and presented in Table 1 four key BSC attributes.

Table 1: the BSC Attributes

BSC Attributes	Description
<b>Attribute 1: Strategy</b> Translating a strategy into operational terms	Grouping the strategic financial and nonfinancial measures into multiple and interrelated dimensions. The linkages between/among those measures within and across perspectives illustrate firm’s value-creation process.
<b>Attribute 2: Alignment</b> Aligning the organizational units to the strategy	Aligning business units’ or support functions’ strategies to firm’s strategy to create synergy.
<b>Attribute 3: Communication</b> Communicating strategy to employees	Communicating vision and strategy throughout the company in order that employees understand and conduct their works in accordance with the strategy.
<b>Attribute 4: Feedback</b> Providing feedback	Linking strategy to operating plan and budgeting systems; and reviewing the strategy.

*Table 1 presents characteristics of a firm’s management processes and performance measurement systems, which reflect the BSC implementation..*

Attribute 1 (i.e. Strategy) is the key BSC characteristic as it not only clarifies the organization’s strategy and thereby builds a consensus among employees but also serves as a platform for the other three attributes (i.e. Alignment, Communication and Feedback). This fact underscores the significance of the Strategy attribute in the BSC implementation. The theoretical weights are assigned to attributes 1, 2, 3 and 4 in the order of 40%, 20%, 20% and 20%, respectively. In determining the theoretical weights of the BSC attributes, the value of the Strategy attribute is always 1 since this attribute serves as the platform for the remaining three attributes, while the Alignment, Communication and Feedback attributes are assigned a value of either 0 or 1, where 1 denotes the existence of a particular attribute in the firm’s management processes and performance measurement system; and 0 otherwise. As a result, there are eight possible combinations of the attributes, as presented in Table 2.

Prior studies based on the organizational innovation and the technology acceptance model have suggested various factors relating to the BSC application (David, 1989; Damanpour, 1991; Hongratanawong, 2002; Roger, 2003). The factors include top management support, training and attitudinal factors, the third of which refer to the perceived ease of use and the perceived usefulness. According to Davis (1989) and Davis et al (1989), the perceived usefulness is defined as a degree to which a person believes that adopting a particular system would enhance his or her job performance within an organizational context. Meanwhile, the perceived ease of use is defined as a degree to which a person believes that using a particular system would require minimal or no effort. In addition, the technology acceptance model has implied that top

management support and training may be correlated with the perceived ease of use and the perceived usefulness. The technology acceptance model also suggests that the attitudinal factors, i.e. the perceived ease of use and the perceived usefulness, tend to be associated with the BSC usage.

Table 2: Eight Combinations of BSC Attributes

Combination #	Attribute1 (Strategy)	Attribute2 (Alignment)	Attribute3 (Communication)	Attribute4 (Feedback)
1	1	1	1	1
2	1	1	1	0
3	1	1	0	1
4	1	1	0	0
5	1	0	1	1
6	1	0	1	0
7	1	0	0	1
8	1	0	0	0
Count	8	4	4	4
Weight (total = 20)	8/20 = 40%	4/20 = 20%	4/20 = 20%	4/20 = 20%

*This table shows all possible combinations of the BSC attributes, where 1 denotes the presence of a particular attribute and 0 otherwise. Since Attribute 1 (i.e. Strategy) is the platform for the three remaining BSC attributes, the Strategy attribute of all eight combinations is always assigned a value of 1.*

Top management support is a crucial factor in the successful implementation of organizational innovations (Damanpour, 1991; Rogers, 2003; Chenhall, 2003), including BSC implementation (Kaplan and Norton, 2008; Shutibhinyo, 2011, 2013). Support by top management in the form of time and resources determines the success of BSC implementation. If the top management believe that BSC implementation benefits the firm, they will allocate sufficient resources and time to it as well as act as a change catalyst who encourages others in the organization to participate. The top management’s actions contribute to the positive attitudes of CFOs and employees toward the perceived usefulness and the perceived ease of use of BSC. This fact indicates the mediating role of the attitudinal factors and thereby leads to the following hypothesis:

*H1: Top management support is positively associated with the usage of BSC through the attitudinal factors.*

In the process of BSC implementation, employee training is necessary (Assiri et al., 2006) to promote the employees’ understanding of the strategy and scorecard. The employee training is one of the facilitating factors that influence the formation of positive attitudes toward the BSC implementation and its success as the training could facilitate the realization of the usefulness and ease of use of BSC (Venkatesh, 2000). In the context of BSC implementation, employee training enhances the employees’ knowledge and applicability of BSC, which results in a positive perception of BSC usefulness and ease of use and subsequently the successful BSC implementation as hypothesized below:

*H2: Training is positively associated with the usage of BSC through the attitudinal factors.*

**RESEARCH METHODOLOGY**

*Survey Instrument:* A survey package consisting of one questionnaire, a cover letter and a postage-paid self-addressed envelope was posted to the chief financial officers (CFOs) of the listed firms during May – June of 2011. The questionnaire is comprised of two parts: The first part asks the respondents to assign a percentage value (i.e. 0 – 100%) to a series of questions concerning the performance measurement systems and management processes of their organizations. Their responses help identify the degree of each BSC attribute embedded in the performance measurement systems of their organizations. The second part of the questionnaire contains questions pertaining to top management support and training.

*Model Specifications and Variable Measurements:* The simple regression analysis was performed to test the hypotheses. The model specifications and variables are presented in Table 3.

Table 3: Models and Variables

Models for H1		Models for H2	
M1.1	$BSC_i = \beta_0 + \beta_1 PU_i + \varepsilon_i$	M2.1	$BSC_i = \beta_0 + \beta_1 PU_i + \varepsilon_i$
M1.2	$BSC_i = \beta_0 + \beta_1 PE_i + \varepsilon_i$	M2.2	$BSC_i = \beta_0 + \beta_1 PE_i + \varepsilon_i$
M1.3	$PU_i = \beta_0 + \beta_1 PE_i + \varepsilon_i$	M2.3	$PU_i = \beta_0 + \beta_1 PE_i + \varepsilon_i$
M1.4	$PU_i = \beta_0 + \beta_1 TOP_i + \varepsilon_i$	M2.4	$PU_i = \beta_0 + \beta_1 TRAIN_i + \varepsilon_i$
M1.5	$PE_i = \beta_0 + \beta_1 TOP_i + \varepsilon_i$	M2.5	$PE_i = \beta_0 + \beta_1 TRAIN_i + \varepsilon_i$

Variables:  $BSC_i$  = BSC usage,  $TOP_i$  = Top management support,  $TRAIN_i$  = Training,  $PE_i$  = Perceived ease of use,  $PU_i$  = Perceived usefulness. This table shows the regression models and related variables. Models 1.1-1.5 and Models 2.1-2.5 were used to test H1 and H2 respectively. BSC usage is the summation of the products of the degree of each BSC attribute and its respective theoretical weight, i.e. BSC usage = (Degree of Attribute1 x 40%) + (Degree of Attribute2 x 20%) + (Degree of Attribute3 x 20%) + (Degree of Attribute4 x 20%)

## RESULTS

Out of 500 firms, 73 observations are usable, which is equivalent to a 15% response rate. The descriptive statistics are presented below:

Table 4: Descriptive Statistics (N=73)

Variable		Average	Min	Max	SD
<b>Dependent Variable</b>					
BSC usage	BSC	71.82	3.96	100.00	17.72
<b>Independent Variables</b>					
Top management support	TOP	76.27	14.00	100.00	17.07
Training	TRAIN	71.71	0.00	100.00	18.18
<b>Mediating Variables</b>					
Perceived usefulness	PU	72.19	3.00	100.00	17.79
Perceived ease of use	PE	67.47	3.67	100.00	17.84

The descriptive statistics are presented in this table. BSC usage is the summation of the products of the degree of each BSC attribute and its respective theoretical weight as discussed in Tables 2 and 3.

Table 5: The Main Findings (N = 73)

Panel A: Top Management Support							
Models for H1					p-value	Adj.R <sup>2</sup>	
M1.1	BSC =	16.31***	+	0.77***	PU	0.00	0.59
M1.2	BSC =	21.90***	+	0.74***	PE	0.00	0.55
M1.3	PU =	10.99***	+	0.91***	PE	0.00	0.82
M1.4	PU =	18.83***	+	0.70***	TOP	0.00	0.44
M1.5	PE =	12.68***	+	0.72***	TOP	0.00	0.47
Panel B: Training							
Models for H2					p-value	Adj.R <sup>2</sup>	
M2.1	BSC =	16.31***	+	0.77***	PU	0.00	0.59
M2.2	BSC =	21.90***	+	0.74***	PE	0.00	0.55
M2.3	PU =	10.99***	+	0.91***	PE	0.00	0.82
M2.4	PU =	27.29***	+	0.63***	TRAIN	0.00	0.40
M2.5	PE =	20.91***	+	0.65***	TRAIN	0.00	0.43

The regression estimates are shown in this table. Panel A shows the results for Top management support. Panel B shows the results for the Training. \*\*\* indicates significance at the 0.01 level.

The linkages between the determinants, the attitudinal factors and BSC usage are illustrated in Figure 1.

Figure 1: The Indirect Correlations between Top Management Support and BSC Usage and between Training and BSC Usage through the Attitudinal Factors

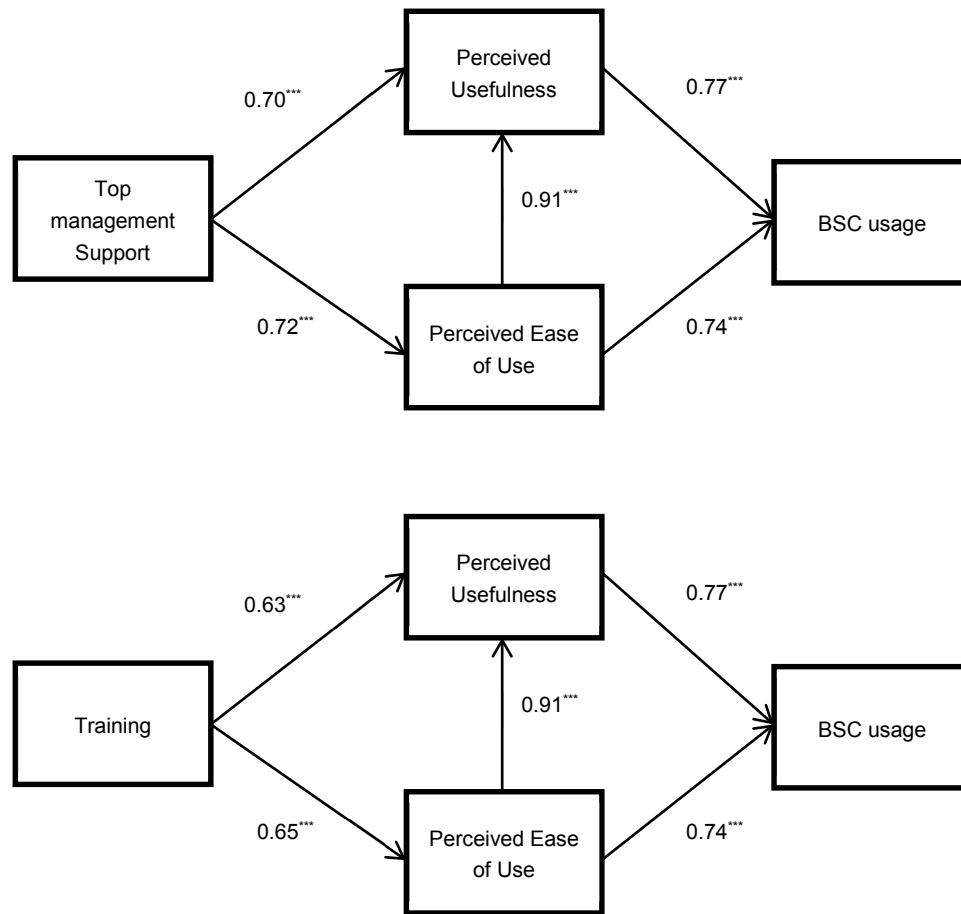


Figure 1 shows the coefficient estimates from Table 5 and the indirect correlations between key determinants (Top management support and Training) and BSC usage through the attitudinal factors (Perceived ease of use and perceived usefulness). \*\*\* indicates significance at the 0.01 level.

Both Table 5 and Figure 1 indicate that the top management support and training determinants are positively associated with the BSC usage through the attitudinal factors. Specifically, the top management support and training positively relate to the perceived usefulness and the perceived ease of use (i.e. attitudinal factors) as both determinants bring about the positive attitudes toward the BSC implementation with respect to its perceived usefulness and perceived ease of use. The support from top management convinces the CFO and the employees of the usefulness of BSC and thus to contribute to the implementation as the employees trust that the top management would make available necessary time and resources for the successful BSC implementation. As a result, both the perceived usefulness and the perceived ease of use are positively correlated with the BSC usage. That is, if an employee has a positive attitude toward the BSC, he or she would constantly participate in and contribute to the BSC implementation.

## CONCLUSIONS

Most existing research studies on the stages of BSC implementation have adopted the discrete classification to classify firms into the category of either non-implementer (i.e. non-implementation stage) or implementer

(i.e. implementation stage). The discrete classification nevertheless fails to reveal the degree of the BSC usage for the firms in the implementation stage category. In addition, prior determinant studies have been overlooking the importance of a positive attitude toward BSC, which in turn promotes the successful BSC implementation in the organization, especially when the BSC is perceived as easy to use and of great usefulness (i.e. the attitudinal factors). This research paper develops the measurement of BSC usage by taking into consideration the key BSC characteristics and their theoretical weights; and presents the evidence of attitudinal factors as the key determinants and the mediating variables in the context of BSC implementation. Specifically, the top management support and training factors promote the BSC usage through the attitudinal factors.

One of the limitations of this research study lies in the fact that the postal survey is normally met with a low response rate and self-response bias. In addition, the responses are usually supplied by only one individual and thereby are less likely to represent the actual behavior with regard to the BSC of the entire organization. The researcher nonetheless attempted to overcome these limitations by collecting the data from the most knowledgeable person in the organization, i.e. CFO. Furthermore, although the theoretical weights assigned to each BSC attribute may not represent the actual weights that the participating firms assign to each of the corresponding BSC attributes, the ratio measurements of BSC implementation of this research study still enable the researcher to determine the degree of BSC usage in ratio scale, rather than in discrete scale. This feature enables the research to further carry out the determinant and the consequence studies. In addition, the significance of the attitudinal factors is highlighted in this research work.

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# A COMPARATIVE ANALYSIS OF MAJOR US RETAILERS BASED ON ENTERPRISE MARKETING EFFICIENCY

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## ABSTRACT

*The purpose of this research was to analyze financial results of four major US retailers from June 2006 until August 2008 and compare their tactics to create shareholder's value, using key performance and enterprise marketing ratios. This is a relevant study given the different business models and strategies used by these companies, as well as their strong rivalry in the retail industry. The study highlighted Walmart and Costco given their recent growth and competitiveness. The results showed that Walmart was superior in attracting investors willing to pay a premium for the stock. On the other hand, Costco created an average of \$10.32 dollars of sales for every dollar spent in Sales, General and Administrative expenses, whereas Walmart produced only \$5.44. In other words, Costco created twice as much sales volume for every dollar spent in these expenses. Further, the Maximum Earnings Market Share displayed that Costco could have made \$3,660 million more in that period, whereas Walmart spent \$26,300 million more than needed to increase earnings in the same period.*

**JEL:** M2, M3, G1

**KEYWORDS:** Marketing, Enterprise Marketing, Market Value, Efficiency, Market Share, Costco, Walmart, Retail Industry

## INTRODUCTION

The purpose of this research is to analyze the four major retailers in the United States, including Sears, Target, Walmart and Costco in the ten quarters from June 2006 until August 2008 considering their use of money to create shareholder's value, calculated on key performance and enterprise marketing ratios. This study is relevant, given the different business models and approaches used by both companies, as well as their strong rivalry in the retail industry. Further, there is a growing concern around the world about how to compete with the giant Walmart, because of the enormous economies of scale that is putting many companies out of business. The organization of this paper is as follows: a) a Literature Review section to analyze existing research about this subject, b) a section about the background on the major U.S. retailers to give context to this research, including an introduction to determine the strategic group of the companies to analyze; c) The section about Data and Methodology explains the formulas used to calculate the different ratios, d) the Results section shows the outcomes of the data analyzed for these companies during that period of time; and e) The final section, Conclusion and Comments, discussed the implications of this investigation, as well as recommendations for future research.

## LITERATURE REVIEW

Four major companies that represent the retail industry in the United States include Walmart, Costco, Target and Sears, and each one has a different business model, follows a unique strategy, has different locations and store sizes, product variety, selling techniques and economies of scale. Each one faces unique challenges and chases different target markets, and uses different positioning strategies. Three of them have stores in different countries and confront different cultural challenges and adaptations to survive in an increasingly competitive landscape. Walmart is the behemoth that controls the industry with traditional *low prices everyday* (recently changed to “*Save money. Live better*”) approach, and has become the largest

company in the world with more than \$378 billion dollar in sales in 2008 (Walmart). Costco, on the other hand, has grown steadily during twenty-six years and has become a world leader in warehouse sales, with stores in seven countries of the world. Besides, Costco has created much excitement to more than 29 million members by offering premium, new and seasonal items including fine crystal, famous names' handbags, the latest in consumer electronics, plasma TV's, high-quality cheeses, imported wines, leather jackets and lobster (McGregor, 2008). Target has been constantly refocusing the retail strategy with a unique combination of stores decorated in a bright, red color and a line of products that includes soft goods, appliances, electronics, housewares, and gifts that has successfully positioned its stores in the minds of the consumers. Finally Sears, the over 100-year-old company well-known for selling large appliances and tools to many generations, that bought 54 K-Mart stores in 2005 to become one of the largest retailers in the United States.

There are many research papers about market efficiency and they all try to define it and the reasons that contribute to the highest possible efficiency. In their seminal work *The Analysis of Market Efficiency*, Preston and Collins define market efficiency as "the facility and effectiveness with the potential exchanges are accomplished" (Preston & Collins, 1966). Although perfect competition does not exist in real life, companies struggle to develop differentiation strategies and to increase revenues and market share. Previous studies also implied there needs to be a connection between the marketing efforts of a company, both about strategy and investment, and the value of the stock. In their research entitled *Marketing Meets Finance*, Cook et al. (2007) proved a connection between the marketing return on investment, or ROI of a company, and their matching trade value of the stock using Enterprise Marketing Efficiency ratios in the pharmaceutical industry, analyzing big companies like Novartis, GlaxoSmithKline and Johnson and Johnson. They found a strong connection between marketing and finance, and how to improve the quality of earnings and contribute to the shareholders value.

The paper also discusses the different marketing strategies or approaches of these competitors, in particular between Walmart that has a more traditional marketing approach based on low prices thanks to their economies of scale, as well as many large stores with countless products, and Costco with a no-advertising method, stresses word of mouth, added member services and Internet sales, and selected products using a "treasure hunt strategy" (Altamirano & Corona, 2010) to attract their members. Another important element to consider in the competitive analysis is to define who are the competitors, as well as potential, substitute and indirect competitors. Bergen and Peteraf (2002) did an excellent research paper about this topic, and developed a two-stage framework for competitor identification based on resource equivalence and competitor awareness that is applicable in most industries, including the retail field for this paper,

### Background on Major U.S. Retailers

#### Strategic Group

First, there was a selection of a strategic group of companies, or clusters, with true competitors, based on the concept of strategic group within an industry defined as a set of companies that can (or might) serve common customer's needs, and have (or might get) equivalent resources (Cook, 2006). In other words, companies in a strategic group are essentially competing for the same customer, both existing and potential. The companies selected for this strategic group were Walmart, Costco, Sears and Target. Although different in size and resources, these four companies have many common products and services that appeal to a similar client, but each one with a different approach, business model, positioning and pricing strategy, number of stores and their size, number of items in store, promotions, and advertising strategies.

Sears (SHLD)

Sears Roebuck and Company started in 1886 and has been the classical retailer for over 100 years (cnmmoney.com, 2008), but in 2004 merged with K-Mart and formed a new group consisting of 1,426 K-Mart stores across 49 states, 872 full-line Sears stores and 300 specialty stores. Sears is a strong competitor in appliances, automotive and hardware stores nationwide, and with the creation of its own brand, *Sears Home Central*, it has become an icon in the retail industry for every household in the nation (Moon, 2005). Sears has postponed global expansion because of the disappointing financial results in the United States, and thus concentrated in Canada and Mexico only, with mixed results. Sears bought *Land's End*, a leader in catalog sales of clothing for middle to middle-upper class, to complement their line of products and now has available a large variety of branded products in their stores to attract more customers. On June 30, 2004, Sears agreed to buy 54 *K-Mart* stores with an investment of \$620 million (Canlen, 2004) and lease seven stores from *Walmart* to revamp its *Sears Grand* store concept and improve market penetration.

Table 1: Financial Data of the Four Companies for 2006-2008, In Millions U.S. Dollars

Company	Aver. Sales \$	Aver. COGS \$	Aver. Gross profit	Aver. SG&A \$	Aver. EBITDA \$	Average Market value \$	Aver. Share of Value SOV %	Share of Revenue SOR %
Sears Holdings	12,655	9,114	3,541	2,864	677	20,344	6.70	9.03
Target	15,313	10,198	5,115	3,439	1,677	46,425	15.86	11.10
Walmart	92,518	68,515	24,003	17,170	6,832	200,135	68.19	67.29
COSTCO	15,313	14,621	692	1,623	811	26,368	8.99	12.39

Source: Financial data retrieved from WRDS (Wharton Research Data Services) from 12/3 to 12/19 2008 from <http://wrds.wharton.upenn.edu/ds/compq/fundq/> Compustat North America. Table 1 above shows the comparison of the ratios for all four retailers regarding average sales per year in million \$, average cost of goods sold, taken directly from the reported data in million \$, average gross profit also in US dollars from the same source, as well as factor consisting of the total of selling, general and administrative expenses for the one year period and divided by the number of periods under consideration. Another column shows the average earnings before interest and taxes but before depreciation (EBITA) for each company for the period under examination. The next column is the average market value, which is the value per share for each company multiplied by the common stocks outstanding taken at the end of each year under consideration, and then doing the average. As we can see the value of Walmart is almost 10 times the value of Sears and Costco, and five times the value of Target. The average share of value SOV is the average market value divided by the total value of the market of all four companies. Finally, the share of revenue factor is calculated based in the net earnings (profit after tax) for each company divided by the total earning of all four companies combined.

Sears Holdings (SHLD) average sales per quarter were at 12,655 million for the period under examination corresponds to a revenue share of 9.03% for this strategic group. Sales reported at the end of the second quarter of 2008 (July 31) reached \$11,762 million, with a stock price of \$81.00/share. On April 1, 2009, the price was \$52.13/share (finance.yahoo.com, 2008), with a hefty 35.64% loss in market value in only nine months. This is arguably due in part to the economic recession in the US and all over the world.

Target (TGT)

George D. Dayton opened *Goodfellows* in downtown Minneapolis in 1902, and marked the beginning of Target Corporation (TGT), even though the first Target store as we know it today, opened in 1962 with the idea to become a mass-market discount merchandiser and gradually developed into a store chain with trendy goods at affordable prices, aimed to deliver a great retail experience and provide the blend of style, substance and *oh-so-satisfying shopping* (target.com, 2008). Target follows a business model of a large department store and has 1,685 stores in 48 states in the US (including 218 super Target stores), combined with product lines that are predominantly everyday essentials and fashionable, differentiated merchandise at exceptional prices (target.com, 2008). Their brand image is essential for their marketing strategy, including the store size and image, as well as its appealing bright red color and bulls-eye symbol.

From table 1 above, Target sales averaged \$15,313 million per quarter in the period under examination, equivalent to 11.10% of revenue for this strategic group of companies. The latest stock price reported on

April 1, 2009 was \$36.06/share (finance.yahoo.com, 2008), which is 29% lower than a year ago when it was at \$50.98. Similar to the Sears stock, Target's stock price declined because of the decrease in sales after the economy slowed down. Both Sears and Target follow a department store retail format, which is in the decline stage according to some experts (Moon, 2005). Several store chains with similar business model have vanished recently, including Montgomery Ward and Mervyns' (mervyns.com, 2008).

### Walmart (WMT)

The behemoth of commerce and largest retailer in the world started in 1969 by Sam Walton, the richest man in the USA from 1985-1988 according to *Forbes* magazine (wikipedia.com, 2008). In 1984, the company opened three Sam's Club (to compete with Price Club – now Costco), and a Walmart Supercenter in 1988. Walmart's sales in 2008 were 378.79 billion (finance.yahoo.com, 2008), and became the largest company in the world by sales revenue. Walmart runs 971 discount stores, 2,447 supercenters, 132 neighborhood markets, and 591 Sam's Clubs in the United States; and 21 units in Argentina, 313 in Brazil, 305 in Canada, 149 in Costa Rica, 70 in El Salvador, 145 in Guatemala, 47 in Honduras, 394 in Japan, 1,023 in Mexico, 46 in Nicaragua, 54 in Puerto Rico, and 352 in the United Kingdom, as well as 202 stores through joint ventures in China (finance.yahoo.com, 2008). Its main business slogan, "*low prices every day*", was successful until 2005 when they shifted into an expansion approach (which caused some controversy) and changed their slogan to "*Save Money, Live better*", which works well, according to the company. In comparison with other retailers like Costco, Walmart pays 40% lower salaries and fringe benefits to its employees (Holmes & Zellner, 2004); its fundamental standard to achieve low prices is "Low wages for its employees, unrelenting pressure on suppliers, products cheap in quality as well as price, off shoring jobs" (Cascio, 2006). *Walmart's (WMT) stock price on April 13, 2009 was \$51.53 per share.* Nonetheless, Walmart is an emblem in retail stores worldwide and has a well-earned position as the global leader in low prices and product selection. Walmart competes strongly with other global retailers like Target, Sears and Costco because of its ability to offer lower prices than anybody else (category killer), and creates major concerns to other specialized retailers like Home Depot, Office Depot, Circuit City, and JC Penney's, because it is gradually absorbing many of their customers as well.

### Costco (COST)

Mr. Solomon "Sol" Price sold Fed-Mart in 1975 to embark in a new retail venture geared toward small businesses: *Price Club*. Price invited Jim Sinegal, who started downloading mattresses at the age of 18 in Fed-Mart, to help him open the first *Price Club* warehouse in San Diego in 1976 (Cascio, 2006). He learned from Mr. Price the business of a high-volume warehouse with only a limited number of products, but left Price Club in 1983 to start Costco in Issaquah, Washington with partner Jeff Brotman. After competing against Price Club for many years, Costco merged with Price some years later (and became PriceCostco). Later Sinegal bought Price Club out and remained as CEO of Costco. With a casual way of running business, he created an empire of more than 544 stores in 40 states in the USA and eight world countries (McGregor, 2008), with yearly sales of \$72 billion dollars (finance.yahoo.com, 2008). Sinegal's main philosophy is to keep low prices combined with a special assortment of products and create value to the more than 29 million members, in a no-frills environment of carefully selected goods. Costco's warehouses carry only about 4,000 products, compared to supermarkets that have 40,000 items, and some Walmart supercenters have as many as 150,000 items (Boyle, 2006).

From Costco's 4,000 products, around one-fourth (1,000) are new and seasonal products or special buys, such as expensive jewelry, European handbags, leather jackets, and many well-known branded products that attract many wealthy members. Regular products include food, health and beauty items, tires, consumer electronics, wine (Costco is biggest wine merchant in the USA), soft goods, groceries, and even caskets (Funeral Monitor, 2004, p.2, as cited in Chevalier, 2008). Sinegal's strategy also includes added member services, namely new car purchases; business and personal insurance, roadside assistance, home

improvement items (drapes, kitchen countertops, and garage doors), travel, online investments, as well as a profitable website that offers exclusive products to its members. Sinegal not only pays and treats his employees very well, as noted before, but instills in them his “common business sense” and his ethical business principles: obey the laws, take care of our customers, take care of our people, and respect the suppliers (Davis, 2008). *Costco’s (COST) stock price on April 13, 2009 was \$46.41 per share.*

**DATA AND METHODOLOGY**

To do a comparison of these companies in connection to the Enterprise Marketing Efficiency approach, several different ratios were calculated using established formulas from *Competing for Customers and Capital* (Cook, 2006). These ratios include *Marketing Efficiency Ratios* (MER) such as *Share of Value* (SOV), *Share of Revenue* (SOR), *Value Sales Differential* (VSD), *Enterprise Marketing Efficiency* (EME), *Enterprise Marketing Expenses* (EME), *Risk-Adjusted Differential* (RAD), *Sales per Dollar* (SPD), *Profit per Point* (PPP), and *Maximum Earning Market Share* (MEMS), to assess each company’s efficiency in the use of their resources to create profits.

Marketing Efficiency Ratios

*Share of Value (SOV)* is defined as the percentage of market value of a company compared to the total market value of the companies of a specific strategic group. Therefore, for a company *i*, the share of value will be calculated as follows:

$$SOV_i = \left[ \frac{\text{common stock price} \times \text{Number of shares outstanding}}{\text{market value of all companies in the strategic group}} \right] \times 100 \tag{1}$$

*Share of revenue (SOR)*, on the other hand, is the percentage of sales of a company in relationship to the total sales of all companies for that specific strategic group. It will be calculated as follows:

$$SOR_i = \left[ \frac{\text{total sales}_i}{\sum \text{sales of all companies in that strategic group}} \right] \times 100 \tag{2}$$

*Value Sales Differential (VSD)* is the difference of share of value (SOV) minus share of revenue (SOR) (Cook, 2006), [VSD = SOV – SOR] and can be interpreted as the premium or discount that investors are willing to pay for a company stock in relationship to its revenue. If the VSD is positive, it means the investors are willing to reward a company with a higher market value than its revenues, which is good. Negative VSD, on the other hand, denotes that the investors are discounting the market value of a company relative to its sales revenue, which is not good. In other words, investors are willing to pay more for the stock of a company because they expect it to reach a higher value than its sales revenue shows. The competitive value-sales differential ( $\delta_{ij}$ ) for company *i* in a strategic group *j* populated by *n* firms in any given period is:

$$\delta_{ij} = \left( \frac{v_j}{v_j} - \frac{r_i}{R_j} \right) \times 100 \tag{3}$$

To adjust for enterprise marketing risk and compare data across companies, the VSD values of a company are divided by their standard deviation to create the *Risk-Adjusted Differential (RAD)* ratio, to compensate for dispersion from the mean deviation (Cook, 2006). RAD also allows for comparison between large and small companies, independent of sales revenue.

*Enterprise Marketing Efficiency (EME)*: can be measured in two ways; the first is more linear and intuitive form called *Sales per Dollar (SPD)*, and it is defined as the relation between total sales of a company divided by the amount of dollars invested in enterprise marketing expenses (Cook, 2006).

*Enterprise Marketing Expenses (EME)* is the total amount invested in Selling, General and Administrative Expenses (SG&A), directly from a company's income statement. The second method to measure the efficiency in using enterprise marketing expenses is a non-linear, more theoretical ratio: the *Marketing Efficiency Ratio (MER)* and can be described as the relationship between the enterprise marketing expenses of a company, and its current market share (Cook, 2006). If the firm spends less than required to maintain the current market share, the company is more efficient, and the MER is less than one. If the company spends more than required to maintain a specific market share, then it is less efficient and its MER is more than one. When the company spends exactly the amount required to maintain the current market share, MER is equal to one. Both of these Enterprise Marketing Efficiency ratios work well only if we assume a positive correlation between sales and Selling, General and Administrative expenses (SG&A).

*Enterprise Marketing Expenses* are the SG&A of a company and can be calculated for a strategic group as:

$$f = \sum_{l=1}^n f_i \text{ where } i \neq l. \quad (4)$$

n = number of competitors, and f = company's EME (Cook, 2006).

In order to maximize the use of enterprise marketing expenses and achieve the desired market share, it becomes necessary to determine the *Cost Per Point (CPP)* of market share, which is the required amount of money to buy the first market share point, and is calculated as:

$$k_i = (f \times x_i)/100 \quad (5)$$

The *Profit Per Point (PPP)* is the profit derived from each point of market share. The larger the gross profit of a company, the larger the profit per market share point.

The theoretical enterprise marketing expenses y for company i required to achieve a target share m of revenues is:

$$y_i = (f_i \times m_i)/(100 - m_i) \quad (6)$$

The Maximum Earnings Market Share, MEMS is calculated as follows:

$$\widehat{m}_i = 1 - \sqrt{\frac{k_i}{p_i}} \quad (7)$$

Where  $m_i$  = Company maximum earnings market share,

$k_i$  = cost per point, CPP,

And  $p_i$  = profit per point, PPP (Cook, 2006).

Ideally, a company aims to reach a level of market share such that maximizes its revenue and that is calculated using Maximum Earnings Market Share (MEMS). In other words, MEMS is the point in market share where the company maximizes profits.

## RESULTS

Based on the calculations of all these ratios for the four retailers during the period analyzed, the results are presented in three main areas: Gross margin comparison, performance, and Enterprise Marketing Efficiency, which was the purpose of this paper. Results included figure and tables to highlight the possible implications of Enterprise Marketing Efficiency to the value of stock between these retailers. Finally, a specific comparison was presented for the Maximum Earning Market Share (MEMS) for Walmart and Costco, and possible implications.



Gross Margin Comparison

Based on the selected financial data from Wharton (WRDS), for these companies in this strategic group, the average gross margin for each company were as follows: Costco has the lowest gross margin of 14.0%, followed by Walmart with 26.0% and then Sears slightly higher with 27.9% and finally Target with 33.5%. As a warehouse-type operation, Costco displays a substantial price advantage over Walmart of almost half the gross margin, and even larger compared with the other two rivals.

Performance

Table 2: Performance Data for the Four Major Retailers

Company	Share of Value % SOV	Share of Revenue SOR	Value-Sales Differential VSD	Risk-Adjusted Differential RAD
Sears Holdings	6.70	9.03	(2.18)	(1.45)
Target	15.86	11.10	4.77	2.33
Walmart	68.19	67.29	0.90	0.23
COSTCO	8.99	12.39	(3.40)	(1.75)

Source: Financial data retrieved from WRDS (Wharton Research Data Services) from 12/3 thru 12/19 2008 from <http://wrds.wharton.upenn.edu/ds/compq/fundq/> Compustat North America. Table 2 above shows the comparison of Share of Value (SOV), which is calculated based on the value of the company in the stock market (total stock outstanding multiplied by the average value) as a percentage of the total for all companies, in percentage. Therefore, the numbers indicate that Walmart has 68% of the market value for all those companies, and Costco less than 9%, i.e. six times Walmart's size. Share of Revenue (SOR) indicates the market share in terms of revenue for all four companies, in average for the number of years, where again Walmart dominates with almost 70% of the market, whereby Costco only 12%. It is important to note that, while Walmart has almost the same SOV and SOR, Costco has 12% of the market with only 9% of the value, which is very significant. The next column is Value-sales differential (VSD) which reflects the previous concept between the difference of SOV and SOR. We can see that Costco has a negative value of 3.40 whereas Walmart has a positive of 0.9. This means that Costco is able to get higher revenue with a lower company value, compared to Walmart. Risk-Adjusted Differential (RAD) is the last factor in this table, which is the VSD adjusted by a sigma value for each company based on the formula, during the period under review.

From this table we can see that Costco is doing very poorly with a negative VSD of 3.40, which means its stock is traded at a lower value in relation to its sales, versus Walmart with a positive VSD of 0.90 reflecting the willingness of its shareholders to pay a premium for the stock versus its sales revenue. From a different viewpoint, Costco has 11.67% of total sales in that group, but only 8.60% of the market value, which implies is doing better in terms of sales revenue than is reflected in the financial markets.

In the case of Walmart, investors are willing to pay 18% more for its stock compared with actual sales revenue, based on the expectation that the stock will increase its value. Sears is also negative and Target is the champion of the group with a positive VSD of 4.61 value-sales differential, which could be translated as the investors willing to reward Target and expect market price gains in the future. It is interesting to note than on March 31, 2003, Walmart had a SOR of 62.12% for this same strategic group of companies (Cook, 2006), compared with 67.29% for the period under examination, with a net gain in share of revenue of 5.17 points in five years.

It is reasonable to assume that this is due in part to the closing of K-Mart stores and the shifting of customers to Walmart, or the improvement in Walmart's positioning strategy, or a combination of both. On the downside, value sales differential in 2003 for Walmart was a positive 19.87, compared with only 0.90 for this period, reflecting perhaps an over-priced value of its stock at that time, or a higher expectation from investors as a result of intense competition.

Figure 1: Walmart Value Sales Differential (VSD)

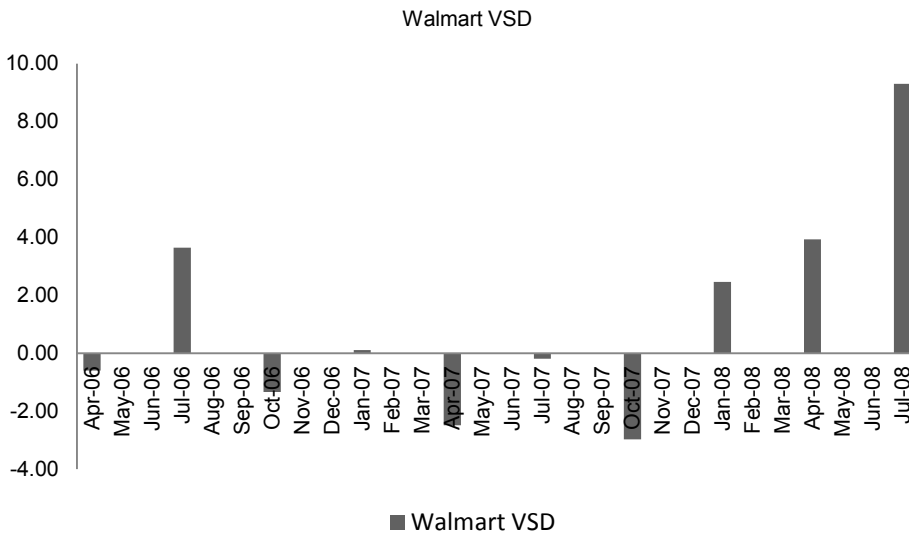


Figure 1 above illustrates the value-sales differential (VSD) of Walmart, from May 2010 until May 2012, to show the fluctuations of the Share of value mentioned above (SOV), and the Share of revenue (SOR) based on the formulas explained before. We can see the fluctuations from negative factors to positive ones, in big proportions, from more than a negative 2.98 to a positive 9.30. This complemented the table before, since this shows the fluctuations by quarter of this factor, and the other one reflects the average. It is also interesting to observe that in February and August of 2011, the VSD or Walmart was almost zero, which means the value of the stock was truly reflecting the share of revenue.

Walmart has positive and negative results in the period under examination, and an average of a positive of 0.9 for VSD, with a negative peak on October of 2007 (-2.98), and a positive one for June of 2008 (+9.30).

Figure 2: Costco Value Sales Differential (VSD)

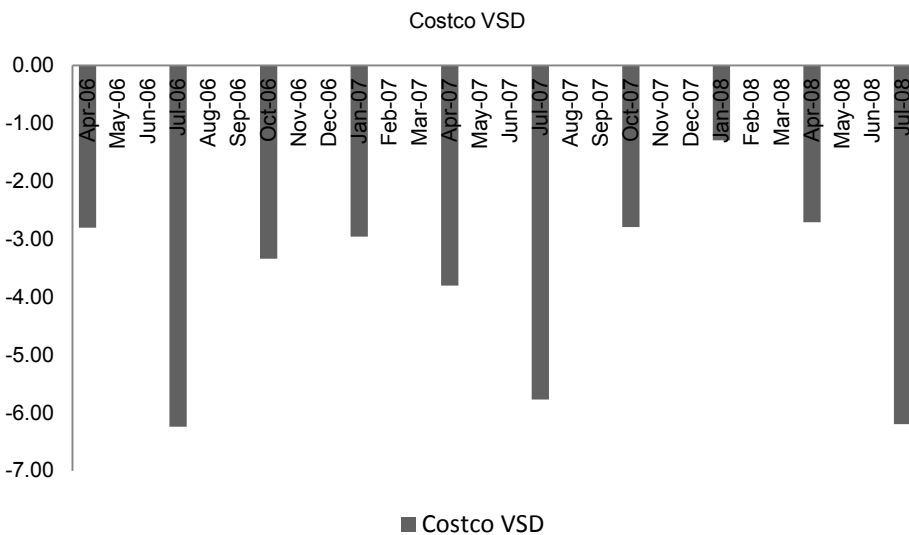


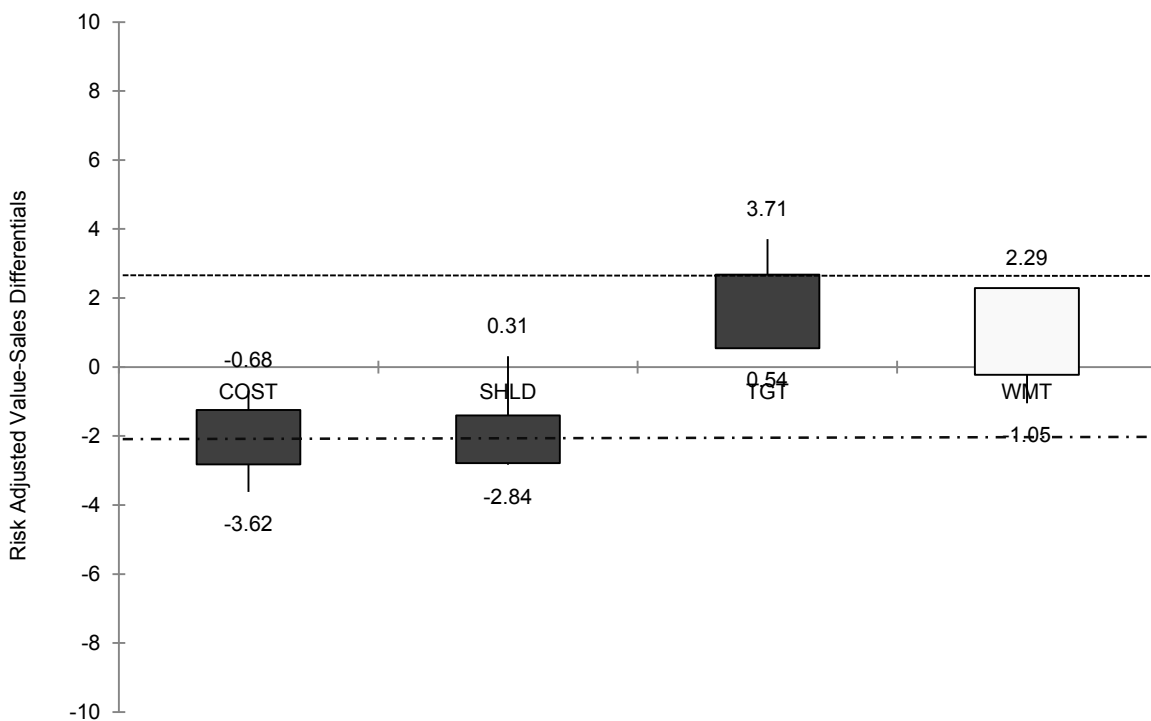
Figure 2 above also shows the Value Sales Differential (VSD) for Costco for the same period analyzed, with a negative peak of June of 2008 (-6.19), corresponding to the highest possible for Walmart, as shown before. The values are also calculated taking the Share of Value (SOV) minus the Share of Revenue (SOR) at the end of each quarter and during the period analyzed. First, it is interesting to note that all VSD for Costco are negative, which means that the perceived value of their stock in the marketplace does not correspond to the share of revenue amongst the four retailers.

Costco has been on the negative side for the same period. This explains a clear trend for Walmart having a higher market value based on investor's perceptions and expectations, than Costco. VSD can be interpreted

as the “price/revenue” ratio of the firm (Cook, 2006) in which the positive (or negative) results of sales is rewarded (or discounted) by investors, similarly to the “price/earnings” ratio in the financial markets. Furthermore, VSD is more meaningful, for it not only relates the price of the stock to the actual sales revenue, but also is linked to similar data of the other companies in the same strategic group. In other words, from Table 1 we can infer that Walmart had a very comparable SOV and SOR, instead Costco had a much higher SOR (12.39%) compared with the corresponding SOV of only 8.99%. On the other hand, VSD is very sensitive to the number of common stocks outstanding; Walmart had 4,167 million common stocks back in April of 2006, and has 3,399 million in June 2008, which is not a significant variation, whereas Costco had 475 million in April 2006, and 434 million by the last period under examination.

Risk-Adjusted Differentials (RAD)

Figure 3: Risk-Adjusted Value Differentials for the Strategic Group



The figure 3 above exhibits the Risk-Adjusted Differentials (RADs) for all four companies in this strategic group (minimum, average and maximum values), based on the calculations from the formula mentioned before. The above zero area shows “value premiums” and the lower one represent the “value discounts” for the companies analyzed. “Value premiums” means the stock is traded at a higher value than the corresponding Enterprise Marketing Efficiency (EME), while the “value discounts” mean the opposite, i.e. the value of the stock is lower than their EME.

Target (TGT) and Walmart (WMT) have positive RADs (value premiums), while both SHLD and COST are negative (value discounts). This means that TGT and WMT are traded at a higher value than their EME, whereas COST and SHLD are traded at a lower value in the stock market. As explained in *Competing for Customers and Capital*, page 45, “the interpretation of risk-adjusted differentials is based on three factors: the size of the differential, its arithmetic sign, and the enterprise marketing risk”. In our comparison of Costco and Walmart, the first one has a negative 3.62 and the latter a positive 3.71. The Enterprise Marketing Efficiency is analyzed in the next section for both companies.

Enterprise Marketing Efficiency

In order to determine how efficient these companies are in generating sales as a result of these enterprise marketing expenses, we calculate Sales per Dollar (SPD) as a first measure of enterprise marketing efficiency (Cook et al., 2007)

Figure 4: Sales per Dollar (SPD) of Costco and Walmart

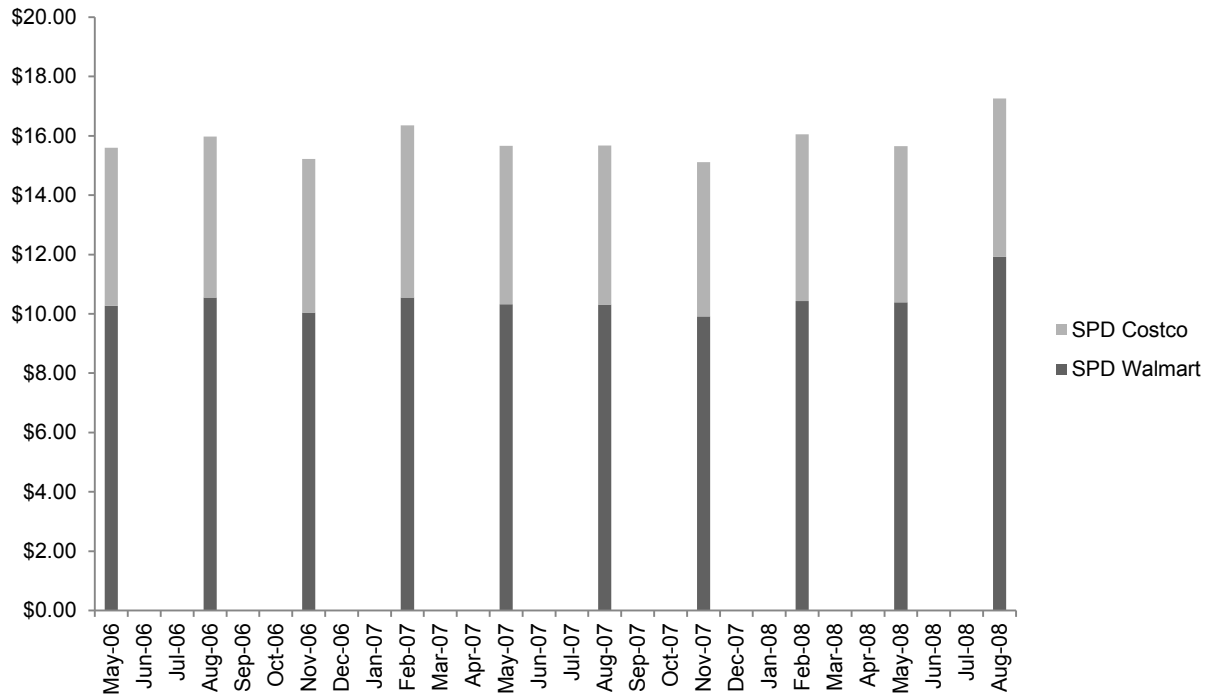


Figure 4 above shows the Sales per Dollar (SPD) of Costco and Walmart for the period under examination, in which the lighter bar represents the sales per dollar for Costco, and the darker bar for Walmart. These results indicate that Costco is far more efficient in investing its Selling, general and Administrative expenses to generate sales, than Walmart. In average Costco generates \$10.32 of sales for every dollar spent, whereas Walmart generates only \$5.44 in average. Although both companies have extensive promotional programs, neither uses traditional direct advertising (tv, radio, newspapers, etc.) for promotion, that is generally a sizable investment for the other two retailers.

This figure above displays that Costco generates an average of \$10.32 dollars of sale for every dollar spent in SG&A on average, whereas Walmart generates only \$5.44. In other words, Costco generates twice as much sales volume for every dollar spent in SG&A expenses; therefore, Costco is 47.28% more efficient than Walmart in using enterprise marketing expenses. Again, sales per dollar (SPD) is based on the assumption that sales have a positive correlation with SG&A expenses. SPDs for Sears and Target are \$4.41 and \$4.61 per dollar of sales generated, respectively. Costco is the clear leader in this category based in part on its business model of no-advertising and using word-of-mouth promotion (viral marketing). Sinegal says: “Advertising becomes like a drug, once you start doing it, it is very hard to stop. We feel that the most successful type of advertising is word-of-mouth. When people are saying good things about you, it is much more important than when you say them about yourself” (Davis, 2008).

The results from this table show that Walmart is spending more in enterprise marketing expenses (positive MER), and Costco is by far more efficient with a MER of only 0.49, as shown on Figure 5 below. This means that Costco spends less than half in SG&A expenses to keep its current average of 12.39% share of this market. Walmart on the other hand, spends on average 5% more than required to keep its current 67.29% of the market. Through analyzing these facts we can imply that, despite the disproportion in sales volume and market share, Costco is by far more efficient in this category than Walmart; that is to say,

Walmart could have spent less in EME and would have been more efficient and earned more revenue. We can also interpret this as Walmart having to spend \$1.05 for enterprise marketing assets that would cost \$1.00 to a strategic competitor; also, Costco spent only 49 cents for enterprise marketing assets that would cost \$1.00 for another strategic competitor.

Table 3: Enterprise Marketing Expenses for Last 10 Quarters

Company	Marketing Efficiency Ratio (MER)	Cost Per Point average CPP \$	Profit Per Point Average PPP \$	Maximum Earnings Market share MEMS	Share of Revenue SOR	Under (-) or Over (+) spending
Sears Holdings	1.27	3.45	3.84	4.9	9.03	+4.13
Target	1.27	3.49	4.60	11.42	11.10	- 0.32
Walmart	1.05	7.81	3.57	15.7	67.29	+ 51.59
Costco	0.49	1.50	1.94	9.6	12.39	- 2.79

Source: Financial data retrieved from WRDS (Wharton Research Data Services) from 12/3 thru 12/19 2008 from <http://wrds.wharton.upenn.edu/ds/compq/fundq/Compustat North America>. Table 3 above shows the results for Marketing Efficiency Ratio (MER), the Cost per Point Average (CPP), the Profit per point Average (PPP), the Maximum Earnings Market Share (MEMS), complemented by the Share of revenue for each company, and the corresponding under or over spending. MER is the method to assess the efficiency of the way GS&A expenses are invested based on a theoretical model assuming a correlation between the investments and the market share of the company. We noticed that Costco has a MER of only 0.49, which means they only have to spend less than half of its average SG&A expenses to maintain its market share, whereas Walmart has to spend more. Sears and Target have to spend much more to even keep their existing market share. The table also shows the Cost Per Point Average for each company during the period under review, that is the amount of money required to buy the first market share point, as well as the Profit Per point, the profit derived from each market share. The results show that Walmart needs \$7.81 to buy a point of market share, and Costco only \$1.50, i.e. more than five times more. On the other hand, Walmart gets a much higher profit per point than Costco, \$3.57 vs only \$1.94. Finally the table also shows the different Maximum Earning market Share (MEMS) for each company during this period, which is the market share where companies would maximize their earnings.

Interestingly, Walmart had a very good MER of 0.83 in 2003 and dropped (i.e. became less efficient) to 1.05 in the last ten quarters under examination in this paper. Costco on the other hand, remained the same with a consistent MER of 0.49. Furthermore, for the same period of time, Costco was two times more efficient than its closest competitor in this group and spent only 9.51% of sales on enterprise marketing resources, compared with 18.55 for Walmart, 22.72 for Target, and 22.62 for Sears. The data on Table 3 indicates that the cost per point of market share for COST is \$1.50 to make \$1.94 of profit (PPP), which is slightly more than the cost so it would make sense to invest more in EME to reach the peak level when CPP = PPP. On the contrary, WMT has a CPP of \$7.81 to make only \$3.57 of profit, which means its incremental cost for each point of markets share is too costly. In comparing these two companies, Costco is significantly more efficient in managing its enterprise marketing expenses than Walmart.

Maximum Earning Market Share

The average differential or gap in market share for Costco during the period under examination is an average of 9.2 percentage points and translated into lost earnings (EBITDA) would be equal to \$3,660 million. Similarly, Walmart had more market share than needed to maximize profits, consequently it could have saved (or increased EBITDA) in the amount of \$26,833 million during the same period. Figure 6 highlights below show these gaps in actual versus maximum earnings market share for Walmart.

From this figure we can see how Walmart has had more market share than required for their corresponding earnings, which means they spend too much in Enterprise Marketing Expenses to acquire a higher market share, but without the corresponding earnings required.

**CONCLUDING COMMENTS**

This analysis shows that Walmart has the largest market share of this strategic group of retailers, and a better (positive) Value-Sales Differential (VSD) compared with Costco, which indicates that investors are willing to pay a premium for WMT stock in relationship to its share of revenue.

Figure 5: Costco’s Maximum Earnings Market Share (MEMS)

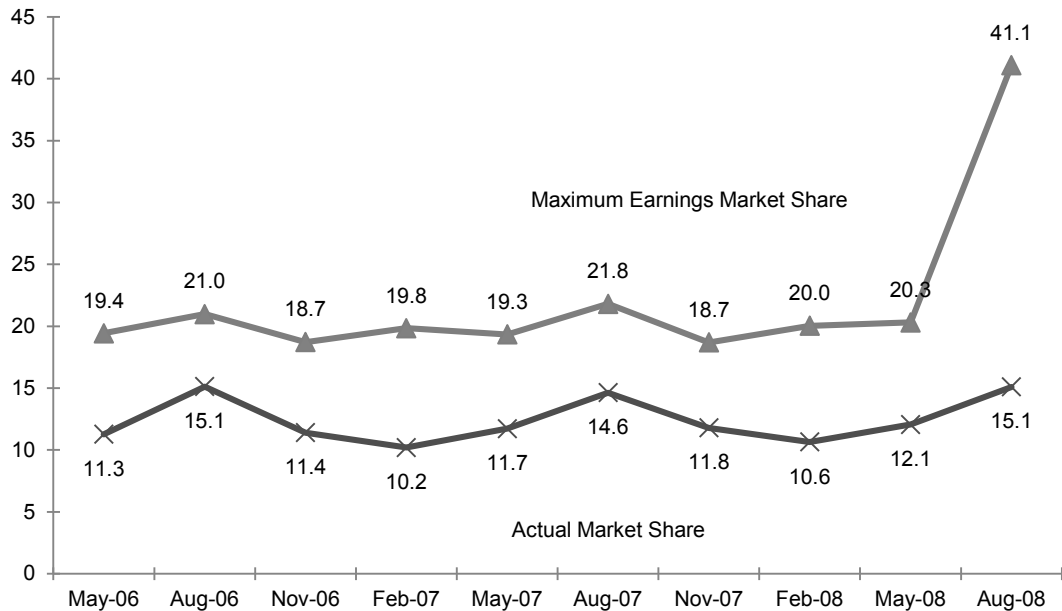


Figure 5 above highlights the gaps between Costco’s actual market share and its maximum earning market share (MEMS) during the period in study, and notably the peak in potential earnings for a market share of 41.1% of revenues in August 2008. The Maximum Earnings Market Share is the percentage of market share where companies would reach its maximum earnings, based on the formula explained before. From this graph, we can see that Costco has been consistently below the market share to maximize its earnings, and thus, missing potential earnings. There is a consistent gap of approximately ten market share points throughout the period under review.

Figure 6: Walmart’s Maximum Earnings Market Share (MEMS)

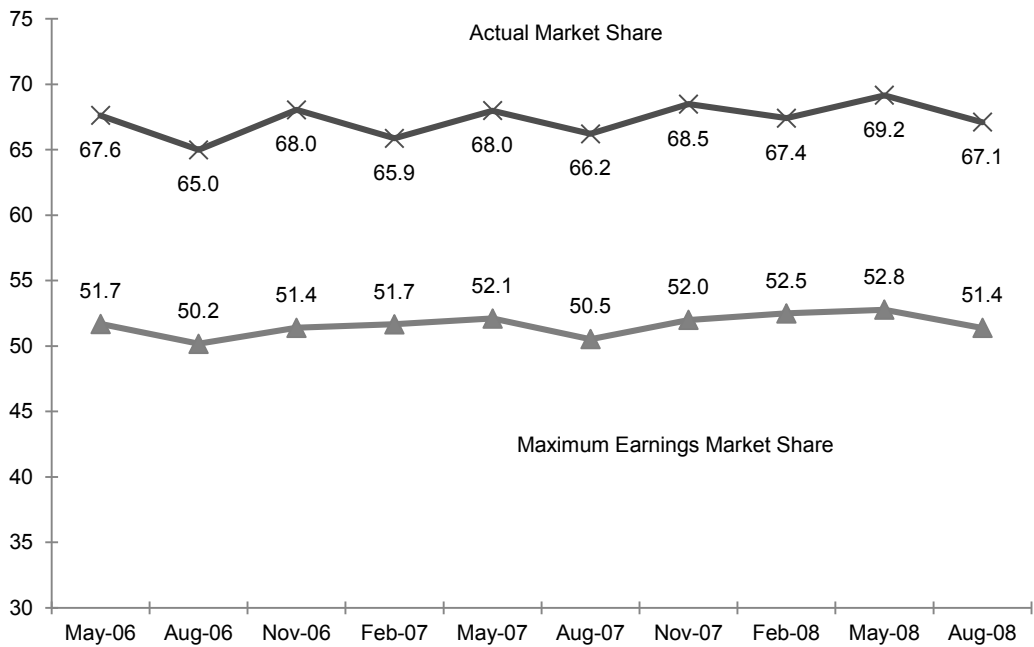


Figure 6 reflects the same situation but for Walmart, comparing the actual market share and the maximum earnings market share or MEMS, a point where they would maximize their earnings based on the dollars invested and the corresponding market share. The Maximum Earnings Market Share is the percentage of market share where companies would reach its maximum earnings, based on the formula explained before. From this graph, we can see that Walmart has been consistently above the market share to maximize its earnings, and thus, investing excessively to keep that market share. There is a consistent gap of approximately 10-15% market share points throughout the period under review.

Costco on the other hand, has the opposite situation with a negative VSD, which implies that investors discount the price of its stock in relation to its share of sales. Interestingly, Walmart's VSD has gone down from a positive 19.87 in 2003, to a positive of 0.90 in 2008, which suggests that perhaps it was more dominant in the financial market than today, but further investigation is necessary to ascertain possible causes. The Risk-Adjusted Differentials corroborate these trends for both companies. Comparing the sales generated by investing in enterprise marketing expenses, the data demonstrates that Costco generates on average \$10.32 of sales per dollar invested, whereas Walmart only generates \$5.44, which means that Costco is twice more efficient than Walmart in using its resources, despite their differences in business model and merchandising and promotional strategies. Costco's Marketing Efficiency Ratio (MER) of only 0.49 clearly demonstrates its high efficiency in utilizing resources to maintain current market share, by spending less than half of the required amount, whereas Walmart's MER of 1.05 demonstrates that it is spending more than needed to keep its current share of the market. Finally, following the Maximum Earnings Market Share (MEMS) calculations, the results show that Costco is under-spending (minus 2.79) which is a good sign, but given its CPP lower than its PPP also indicates that it is missing potential earnings of \$3.6 billion. Its Maximum Earnings Market Share (MEMS) was at a level of 12.39% share of revenue (SOR) and it had only 9.6% during the period under examination.

Walmart, on the other hand, had a positive 51.59 MEMS ratio, which reflects a 26.3 billion in money it could have saved if it had reduced its market share (SOR) from 67.69% to 15.7% during the same period of time. Arguably, it can be very controversial to convince a company or a CEO to actually reduce market share in order to become more efficient and increase earnings, unless these metrics are well calculated and understood. The purpose of this research was to analyze and compare the major retailers in the US for the period from May of 2006 until August of 2008 in relationship to their Enterprise Marketing Efficiency ratios to determine their performance and find out if they could have done better in terms of net earnings using this marketing approach. The data was obtained from the Wharton Research Data Services and other public financial sources, and the calculations were made using the reported numbers in their public financial statements. The use of figures and table was included, to highlight the results and make the comparison easier to comprehend. The basic proposition was that there should be a relationship between the market share and the maximization of earnings, based on Enterprise Marketing Efficiency.

Although the financial information is publicly accessible, the calculations are based on formulas developed in previous researches and/or books that may contain points of views or assumptions not necessarily agreed or understood by the industry or the investors, and therefore have not impacted the value of the stock so far, but the goal is to try to prove that they should be linked, and a more strategic marketing approach should determine the value of the stock. Future research should include more updated financial information to determine if the market recognizes these marketing ratios or not, and to what extent. Walmart's stock was traded at \$78.67 and Costco was at \$117.42 on January 3<sup>rd</sup>, 2014 (finance.yahoo.com, 2014), a 53 % and 153 % increase from 2009, respectively, and therefore future research should explore the financial data from 2008 until 2013, and compare the results obtained in this paper.

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WRDS Wharton Research Data Services. Data retrieved multiple times in 2008-2009 from <https://wrds-web.wharton.upenn.edu/wrds/>

### **BIOGRAPHY**

Dr. Ramon Corona is a full-time Associate Professor in the School of Business and Management at National University, where he teaches Marketing and Strategy courses. He has a Ph.D. in Education from Universidad Iberoamericana (Tijuana, Mexico) and a Postdoctoral Certificate in Marketing from Tulane University (New Orleans). His main research is in the field of Marketing, specifically in Retail and Hispanic Marketing, and his contact email is [rcorona@nu.edu](mailto:rcorona@nu.edu).



# DECOUPLING OF ENVIRONMENTAL PRESSURES FROM ECONOMIC ACTIVITIES: EVIDENCE FROM TAIWAN

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## ABSTRACT

*Between 1998 and 2010, under the thrice industrial structure, Kaohsiung's output ratios of the secondary and tertiary industries fluctuated dramatically every four years. This study examines the decoupling degrees of underlying environmental pressures from Gross Domestic Product in order to analyze how industrial structure influences environmental sustainability by using Tapio's method. Based on aggregate data, calculations are made of the Gross Domestic Product elasticities of garbage collection, tap water consumption, electricity supply, suspended particle matters, SO<sub>2</sub>, CO, NO<sub>2</sub>, and O<sub>3</sub>, during the periods of 1998-2002, 2002-2006, and 2006-2010 in Kaohsiung. Analytical results indicate that the electricity supply during the period 1998-2010 exhibited negative decoupling, while tap water consumption and O<sub>3</sub> during the period 1998-2002, as well as suspended particulate matter and SO<sub>2</sub> during the period 2002-2006 were also negative decoupled. Moreover, industrial structure is not the major determinant to relieve environmental pressures. Fulfilling price strategy and further reducing emissions is a promising measure for sustainable development in Kaohsiung.*

**JEL:** E62, H23, O14

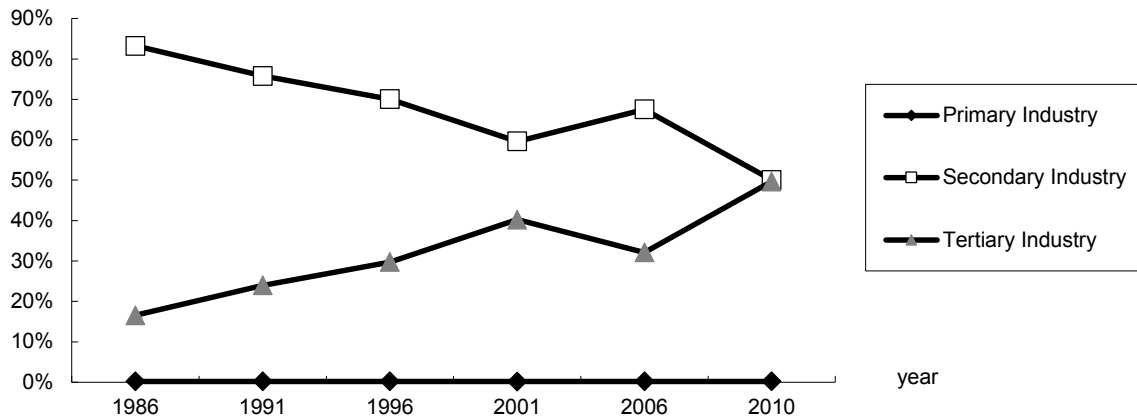
**KEYWORDS:** Industrial Structure, Price Strategy, Sustainable Development, Decoupling

## INTRODUCTION

Located in southern Taiwan, Kaohsiung has a temperate, damp and subtropical climate. With a 12-kilometer-long coastline, well-developed transportation network, as well as prosperous industrial and commercial activities, Kaohsiung is an ideal setting for industrialization. The steel, petrochemical, ship building, cement industries as well as two export processing zones have made Kaohsiung a productive and commercial city in Taiwan. In 1986, the ratio of the secondary industry reached 83.22% of the entire industry (EDBKCG, 2010).

In contrast, industrialization incurs serious environmental problems. Kaohsiung residents suffered from poor air and water quality for a long time (Chen *et al.*, 2004). Industrial activities from sources such as China Steel Corporation, China Shipbuilding Corporation, China Petroleum Corporation, and Taiwan Power Company once severely polluted the Kaohsiung Harbor district (Ko and Chang, 2010). Therefore, high levels of NO<sub>2</sub> and O<sub>3</sub> significantly raised hospital admissions for asthma in Kaohsiung (Tsai *et al.*, 2006). To create a sustainable economy and environment, the Kaohsiung City government is aggressively pursuing an industrial transformation. Under the framework of a thrice industrial structure (i.e. primary, secondary, and tertiary), Figure 1 shows the ratios of output value of Kaohsiung City from 1986 to 2010. Since 1986, output values of the secondary and tertiary industries of Kaohsiung City have begun to change. The secondary industry has declined from 83.22%, while the tertiary industry has risen from 16.55%. These two industries then approached each other in 2001. In 2006, the distance in ratios again increased between these two industries. Finally, the two industries ended up at the same level in 2010. However, during this period, the primary industry remained nearly constant (i.e. less than 1%) (EDBKCG, 2010).

Figure 1: The Ratios of Output Values



This figure shows the ratios of output values of primary, secondary, and tertiary industries in Kaohsiung, Taiwan from 1986 to 2010. Output values of the secondary and tertiary industries approached each other in 2001. Then the distance in ratios again increased and ended up at the same level in 2010.

Given the above situation, the following question arises: can industrial transformation ensure sustainability? To achieve sustainability, environmental pressures should be decoupled from economic activities. Kaohsiung City thus requires an effective means of monitoring the effect and effectiveness of policy responses. Adequate indicators can provide information on the conditions and trends of sustainable development, enabling policymakers to evaluate the severity of environmental problems (Segnestam, 2002; Smeets and Weterings, 1999). Utilizing appropriate environmental indicators can greatly facilitate the efforts of Kaohsiung City to become a green society.

Based on Tapio’s decoupling indicators, this study elucidates the dynamic relationships between economy and environmental pressures in Kaohsiung City during the periods 1998-2002, 2002-2006, and 2006-2010. Exactly how industrial structure influences decoupling degrees is also discussed. The rest of this paper is organized as follows: Section 2 reviews the decoupling concept and Tapio’s method. Section 3 then introduces the criteria and source of selected data. Next, Section 4 describes how decoupling conditions are determined based on their elasticity values. Section 5 discusses in detail environmental pressures presenting negative decoupling. Conclusions are finally drawn in Section 6, along with recommendations for future research.

## LITERATURE REVIEW

### Decoupling Concept

Decoupling refers to breaking the relation between “environmental bads” and “economic goods” (OECD, 2002). In 2001, Organization for Economic Cooperation and Development (OECD) prioritized decoupling as one of the main objectives of the Environmental Strategy for the first decade of the 21st century (OECD, 2002). Increasing production normally leads to growing environmental pressure. Decoupling occurs when an economy develops with a lower increase or decrease rate of environmental pressure. For instance, if a situation in which the Gross Domestic Product (GDP) growth between two years is 5% implies that the rate of increase for SO<sub>2</sub> emissions during this period is less than 5%, SO<sub>2</sub> emissions is assumed to be decoupled from the economic growth.

Factors causing decoupling can be various. First, economic recession results in decoupling. Owing to a slow GDP growth rate, Japan experienced decoupling in the 1990s. During the same period, both energy

use and GDP broke down after the collapse of the former Soviet Union, but the drop in GDP was greater than the drop in energy use, which exhibited decoupling of the energy consumption from GDP (Azar *et al.*, 2002). Second, the development of low-carbon energy creates decoupling. For instance, the United Kingdom (UK increased its coal prices in the 1990s to spur a switch towards gas in power generation. Use of imported nuclear electricity in steel production in Luxembourg lowered greenhouse gas emissions. Sweden's drop in emissions is largely thanks to its reliance on nuclear, hydro and biomass power for energy supply (Azar *et al.*, 2002). Last, some other factors contributing to decoupling include economic structural change, energy efficiency, or change of lifestyle. In addition to its extensive use of renewable energies, New Zealand's decoupling originates from economic structural change and emission-reducing innovation (MfE, 2005). An 89% car acquisition tax and high fuel prices in Finland have led to a consumer preference for smaller cars, resulting in decoupling of CO<sub>2</sub> emissions from GDP growth between 1990 and 2001 (Tapio, 2005).

Environmental pressure indicators as numerators and economic indicators as denominators can reflect different degrees of decoupling. Decoupling concepts vary in their use of indicators. Heiskanen and Jalas (2000) referred to "dematerialization" as de-linking of economic activity from its material base, and can be estimated by material used per GDP unit. "Decarbonization" refers to a decreasing energy intensity of economic activities, determined by CO<sub>2</sub> emissions per GDP unit (Tapio, 2005). Some studies further suggested that carbon intensity (i.e. carbon emissions per GDP unit, the same concept as decarbonization) can be decomposed into two parts: "carbonization index" (i.e. carbon emissions per unit of energy consumption) and "energy intensity" (i.e. energy consumption per GDP unit) (Grubler, 1998; Mielnik and Goldemberg, 1999; Liou and Wu, 2009). High carbonization index refers to consumption of high carbon energy. For instance, gaseous fuels (e.g., natural gas) have a smaller carbonization index than solid fuels (e.g., coal) in terms of their output emissions. Low energy intensity can be attributed to economic structural shifts towards a low-energy industry or improved efficiency of energy production and end-use technologies.

Categories of decoupling have evolved over time. According to OECD (2002), decoupling can be categorized to "absolute decoupling" and "relative decoupling". Absolute decoupling occurs when an economy grows and, simultaneously, environmental pressure remains constant or diminishes. Relative decoupling occurs when environmental pressure grows at a lower rate than economic growth does. Vehmas *et al.* (2003) also used "de-linking" for decoupling and "re-linking" for negative decoupling in environmental economics.

### Tapio's Decoupling Method

Tapio (2005) described how GDP and traffic volume in Finland are related from 1970 to 2001 by proposing eight scenarios of decoupling situations. By adopting Tapio's terminology, that study divided decoupling situations into three categories of "decoupling" (i.e. GDP growth rate is obviously higher than that of transport volume), "coupling" (i.e. GDP growth rate is slightly higher or lower than that of transport volume), and "negative decoupling" (i.e. GDP growth rate is apparently lower than that of transport volume). Tapio's classification appears to be more exquisite than the typologies of OECD or Vehmas *et al.* in describing decoupling scenarios, and also provides an effective informative approach for policymakers.

Tapio described various decoupling situations by adopting the concept of elasticity value, where the percentage change of transport volume is divided by the percentage change of GDP in a given period (Tapio, 2005). Tapio's decoupling terminology further established several subcategories under each main category. Each subcategory has its corresponding elasticity value range. Table 1 lists all eight possibilities of decoupling situations and their elasticity values.

Some important factors should always be considered while explaining the messages conveyed by decoupling indicators. First, the messages are not evident except for confirming absolute levels of

environmental pressure and economic growth individually. Second, the selected time interval may affect the interpretation of the outcomes because while countries attempt to solve environmental problems, the outcomes vary according to different timetables (OECD, 2002).

Table 1: Categories of Decoupling Possibilities

		Increase of Environmental Pressure ( $\Delta P$ )	Increase of Economic Activities ( $\Delta D$ )	Decoupling Elasticity ( $=\% \Delta P / \% \Delta D$ )
Decoupling	Weak Decoupling	$\Delta P > 0$	$\Delta D > 0$	0-0.8
	Strong Decoupling	$\Delta P < 0$	$\Delta D > 0$	<0
	Recessive Decoupling	$\Delta P < 0$	$\Delta D < 0$	>1.2
Coupling	Expansive Coupling	$\Delta P > 0$	$\Delta D > 0$	0.8-1.2
	Recessive Coupling	$\Delta P < 0$	$\Delta D < 0$	0.8-1.2
Negative	Expansive-Negative Decoupling	$\Delta P > 0$	$\Delta D > 0$	>1.2
Decoupling	Strong-Negative Decoupling	$\Delta P > 0$	$\Delta D < 0$	<0
	Weak-Negative Decoupling	$\Delta P < 0$	$\Delta D < 0$	0-0.8

This table shows lists 3 main categories and 8 subcategories under each main category. Based on Tapio's decoupling terminology, eight possibilities of decoupling situations and their elasticity values are established.

## DATA AND METHODOLOGY

This section introduces the GDP elasticities of environmental pressures developed in this study by using Tapio's method. The criteria and source of selected data are then discussed. By using Tapio's decoupling methodology, this study elucidates how economic driving forces and environmental pressures are related. Based on the DPSIR framework, "economic driving forces" refer to social, demographic, and economic developments concerned mainly with population growth and changes in individual's needs and lifestyles that may yield environmental pressures. The term "environmental pressures" includes individual's use of natural resources and land, as well as production of waste and emissions (Gabrielsen and Bosch, 2003; Omann *et al.*, 2009; Maxim *et al.*, 2009). Hence, the decoupling levels can be evaluated as in (1):

$$\text{Economic driving force elasticity of environmental pressures} = \frac{\% \Delta EP}{\% \Delta EDF} \tag{1}$$

Where  $\% \Delta EP$  denotes the percentage change of environmental pressures, and  $\% \Delta EDF$  denotes the percentage change of economic driving forces.

To comply with the above principles, this study selects several indicators as economic driving forces and environmental pressures. First of all, for economic driving forces, GDP per capita (NT\$) is selected as a comprehensive indicator. Secondly, in terms of environmental pressures, the study develops indicators on three aspects. (1) Consumption of resources: power and water supply are essential resources for urban development; therefore, electricity supply (ES, megawatt) and tap water consumption (TWC, m<sup>3</sup>) are selected as the indicators of this study, (2) Production of emissions: The most typical emissions of urban air pollutants include suspended particulate matter (SPM, ug/m<sup>3</sup>), sulphur dioxide (SO<sub>2</sub>, ppm), volatile organic compounds (VOCs, ppm), lead (Pb, ppm), carbon monoxide (CO, ppm), nitrogen dioxides (NO<sub>2</sub>, ppm), and ozone (O<sub>3</sub>, ppm) (UNEP, 2005). VOCs and Pb are not selected due to unavailable data and (3) Production of wastes: Solid and liquid wastes are two main categories of waste production. The volume of garbage clearance (GC, kg) is selected as the indicator of solid waste generation. Owing to the lack of data, the indicator of liquid waste is not included in this study.

As for fluctuation of the industrial structure and the 4-year time interval, 1998, 2002, 2006, and 2010 are the study years. These corresponding data of selected indicators for the desired years are gathered from

Department of Statistics, Kaohsiung City Government (2012) and shown in Table 2.

Table 2: Data of GDP and Selected Environmental Pressure Indicators

Year	GDP per capita (NT\$)	GC (kg)	TWC (m <sup>3</sup> )	ES (megawatt)	SPM (ug/m <sup>3</sup> )	SO <sub>2</sub> (ppm)	CO (ppm)	NO <sub>2</sub> (ppm)	O <sub>3</sub> (ppm)
1998	670439	1,547	315255	8,285	77.1	0.013	0.82	0.028	0.024
2002	639471	1,216	341754	9,456	63.7	0.007	0.70	0.024	0.030
2006	689132	1,005	342893	11,430	78.7	0.008	0.59	0.023	0.029
2010	713266	786	350364	12,235	73.9	0.007	0.51	0.021	0.028

*This table shows the corresponding data of GDP and selected environmental pressure indicators in Kaohsiung for the year 1998, 2002, 2006, and 2010.*

## RESULTS AND DISCUSSION

Based on evaluation of the GDP elasticities of all environmental pressures in Kaohsiung, Table 3 lists the elasticity values. Tapio's theoretical framework displays all decoupling degrees of environmental pressures from GDP at different intervals (Figure 2).

Table 3: GDP Elasticities of Environmental Pressures

Years	GC	TWC	ES	SPM	SO <sub>2</sub>	CO	NO <sub>2</sub>	O <sub>3</sub>
1998-2002	4.627	-1.819	-3.059	3.754	9.990	3.257	3.092	-5.411
2002-2006	-2.234	0.043	2.687	3.034	2.681	-1.934	-0.747	-0.594
2006-2010	-6.235	0.622	2.012	-1.746	-3.781	-4.297	-1.456	-0.590

*This table shows GDP elasticities of environmental pressures in Kaohsiung from 1998 to 2010*

Figure 2 reveals all of the elasticity values from Interval one (1998-2002), which are located on the left side of the y-axis due to the negative growth of the GDP during that period. As expected, except for TWC, EP, and O<sub>3</sub>, all other environmental pressures presented recessive decoupling. During that period, China and other Southeast Asia countries expanded their traditional industries, including manufacturing. Owing to their inexpensive labor and low operating costs in these countries, some local factories or businesses were relocated out of Kaohsiung, subsequently raising the unemployment rate from 3.4% in 1998 to 5.5% in 2002 (EDBKCG, 2010). Hence, most air pollutants and garbage decreased along with depressed economic growth. Conversely, during the same period, tap water consumption, electricity supply and O<sub>3</sub> increased, possibly owing to societal development.

During Interval two (2002-2006), GDP growth causes all of the elasticity values to shift to the right side (Figure 2). Except for SPM and SO<sub>2</sub>, all other air pollutants displayed strong decoupling. SPM increased from 63.7 ug/m<sup>3</sup> to 78.7 ug/m<sup>3</sup> while, during this period, SO<sub>2</sub> rose from 0.007 ppm to 0.008 ppm. In terms of resources, tap water consumption exhibited weak decoupling while the electricity supply showed expansive negative decoupling. Moreover, strong decoupling occurred in garbage clearance. In sum, between 2002 and 2006, the ratio of the secondary industry in Kaohsiung rebounded to 67.53%, along with the negative decoupling of SPM, SO<sub>2</sub> and electricity supply from GDP. Regarding Interval three (2006-2010), all of the air pollutants achieved strong decoupling; garbage collection did as well. However, as for resources, tap water consumption and electricity supply still separately displayed weak decoupling and expansive negative decoupling, the same as in the previous interval. In 2010, the tertiary industry grew to nearly the same output value as the secondary industry. Nevertheless, manufacturing still played a more significant role in Kaohsiung than in other cities in Taiwan.

Figure 2: Decoupling of Environmental Pressures form GDP in Kaohsiung 1998-2010

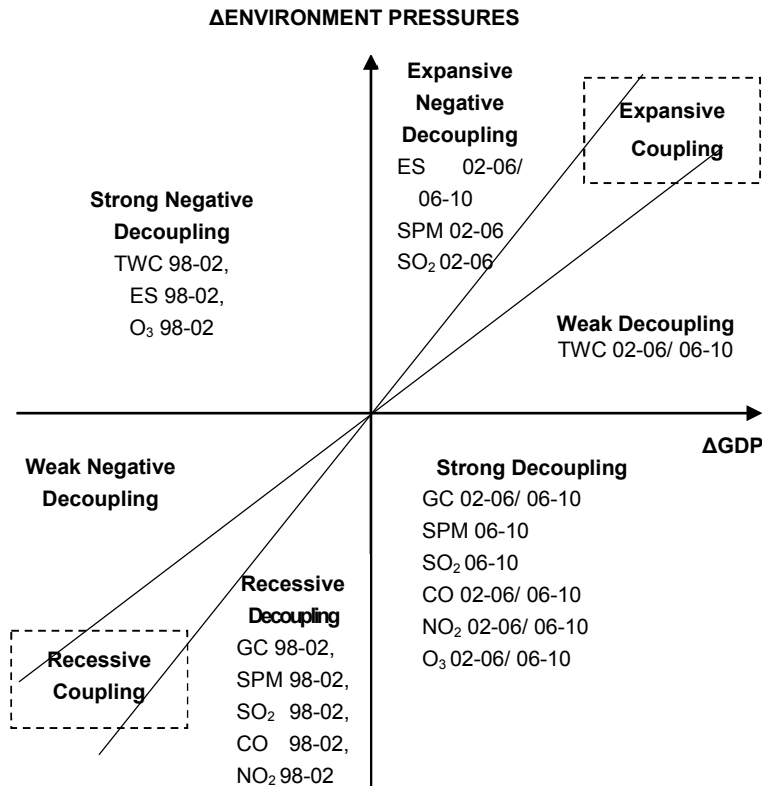


Figure 2 shows all decoupling degrees of environmental pressures from GDP in Kaohsiung at three time intervals 1998-2002 (98-02), 2002-2006 (02-06), and 2006-2010 (02-10) based on Tapio's theoretical framework.

## DISCUSSION

Above results demonstrate that electricity supply and other air pollutants experienced negative decoupling, thus warranting a further discussion of the possible causes.

### Wide Application of Electricity Price Strategies

As for final energy consumption, electricity is the largest energy type used in Taiwan, with approximately 50% (Taiwan Bureau of Energy, 2010). However, electricity supply exhibited negative decoupling over these three intervals, which indicates that regardless of how the industrial structure transformed, the increase of electricity consumption still surpassed that of GDP growth. Among the factors explaining the above results include economic growth, industrial structures, population growth rate, temperature, electricity price and strategies to reduce electricity consumption (Taiwan Bureau of Energy, 2010). Economic growth and industrial structure are discussed. The population growth rate of Kaohsiung is 4.62% during the period 1998 to 2010, which is lower than that of GDP (= 6.38%) and, thus, is not considered here. This study also does not discuss the temperature issue because the residential electricity consumption only occupied around 11% of the electricity supply over the past two decades (Taiwan Bureau of Energy, 2010). This study covers electricity price and its strategies to explore the origin of its negative decoupling.

Figure 3 shows the growth rates of electricity supply and price in Taiwan from 1998 to 2010. Obviously, electricity supply continued growing most of the time. Nevertheless, despite drastic fluctuations in global fuel prices, the growth rate of electricity price remained at relatively low levels until 2008 and was always



lower than the supply. Even in 2010, Taiwan’s electricity prices still ranked the second lowest for residential use and the fourth lowest for industrial use out of 34 selected countries (IEA, 2011). Electricity accounts for around 50% of energy consumption in Taiwan; hence, although capable of boosting economic growth, inexpensive electricity also easily produces waste. Owing to the low cost of energy consumption, industry does not need to invest in energy-saving facilities while households can use electrical devices without much concern for the bill. Conversely, for instance, in 2009, after electricity prices were increased and conservation discounts were also made available, electricity consumption dropped 13% over that of the previous year (Taiwan Bureau of Energy, 2010). Figure 3 shows further details. Therefore, electricity price strategies must be developed continuously because more than any other reason, the environment should always takes a higher priority than economy and society (Giddings *et al.*, 2002). Incorporating electricity conservation in the management of demand-side consumption is a more effective approach.

Figure 3: The Growth Rates of Electricity Supply and Prices in Kaohsiung, Taiwan 1998-2010

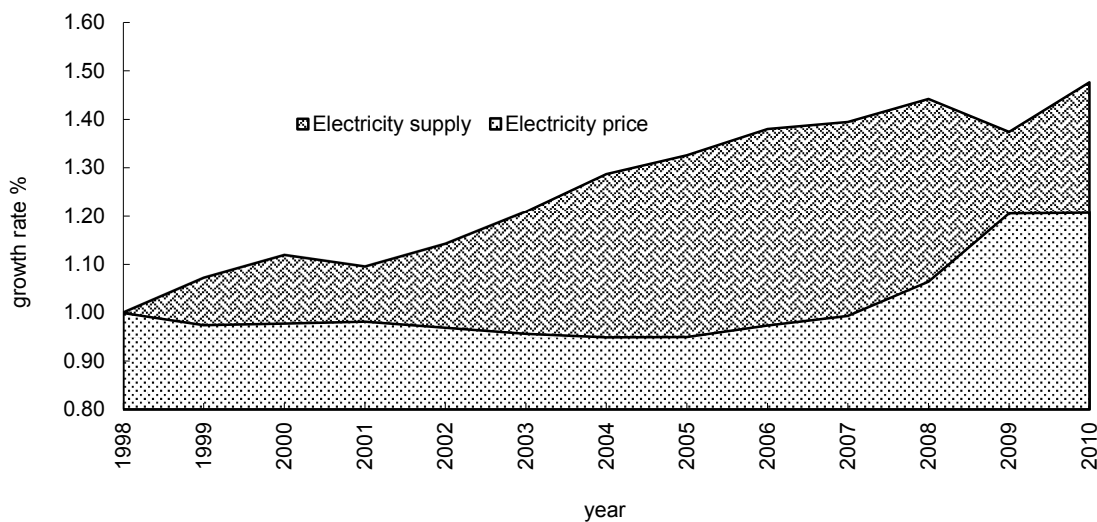


Figure 3 shows the growth rates of electricity supply and price in Taiwan from 1998 to 2010. Obviously, electricity supply continued growing and was always lower than the supply until 2008. In 2009, after electricity prices were increased, electricity consumption dropped 13% over that of the previous year.

Moreover, electricity is not clean. Coal, natural gas, and fossil fuels are the three main sources for power generation of the three thermal power stations, Hsingta, Talin, and South, in the Kaohsiung area. During power generation, except for air pollutants, carbon dioxide (CO<sub>2</sub>) emissions also pose a threat to the environment. Therefore, the Mass Rapid Transportation (MRT) and electrical vehicles, strongly promoted by Kaohsiung City government, are the second “worst” option for transportation owing to the high-carbon electricity.

Transformation to High Added Value and Low-pollution Industry

Despite a revival of the secondary industry in 2006, air pollutants rather than SPM and SO<sub>2</sub> presented strong decoupling; garbage collection did as well. The secondary industry appears to be less-polluted than previously. Based on the Environmental Kuznets Curve (EKC) hypothesis, as economic growth continues, economic activities exert less pressure on the environment (Kuznets, 1955). The de-linking of economy and environmental pressures can be partially interpreted by the EKC theory. For instance, Talin thermal power station has applied electrostatic precipitators (ESP) to lead the flow of gases through the device and remove fine particulate matter such as dust and smoke from the air stream (Taiwan Power Company, 2012). Industrial upgrading is another effective means of lowering environmental pressures. Since 1996, Kaohsiung City industries have gradually transformed into a precision industry featuring hi-technology,

automation, high added value and low pollution (EDBKCG, 2010). For instance, research and development (R&D) expenditures in manufacturing (e.g., electronic components, chemical materials, base metal, and transportation equipment) have increased. In 2007, the total R&D investment in Kaohsiung amounted to \$US 600 million dollars.

However, the negative decoupling of SPM and SO<sub>2</sub> from GDP revealed that a portion of the GDP led to the production of excessive pollution. The sources of negative decoupling must be traced to understand its origin. Coal burning and oil burning account for around 80% of SO<sub>2</sub> emissions; burning of coal, oil, gaseous fuels, fly-ash emissions from power plants, and some other heavy industries (e.g., smelting and mining activities, as well as metallurgical and cement industries) contribute to SPM accumulation (UNEP, 2005). In 2006, the value output of the secondary industry (including the petrochemical, steel, photonics and optics industries) rebounded with a 12.52% increase in growth (EDBKCG, 2010). These high-polluted, heavy industries more profoundly impacted Kaohsiung's economic development than in 2002, thus providing a hypothetical explanation for the negative decoupling of SPM and SO<sub>2</sub> emissions from GDP.

Transforming to a tertiary industry appears to be an effective means of eliminating environmental problems. Consider Hawaii as an example. As a global tourist resort, Hawaii attracts a tremendous amount of visitors every year. Konan and Chan (2010) investigated greenhouse gas emissions in Hawaii, indicating that the average visitor consumes 4.4 times more energy and produces 4.3 times more greenhouse gas emissions than an average resident does. None of the industries can ensure environmental sustainability, while only conservation-oriented attitudes and measures can achieve this.

## CONCLUDING COMMENTS

Kaohsiung, the second largest city in Taiwan, is aggressively striving to upgrade and transform its industries to make the city more sustainable to live. To monitor the effectiveness of the city government policy, this study evaluates the decoupling situations of environmental pressures from GDP in Kaohsiung during the period 1998 to 2010 by using Tapio's method. Along with the rise and fall of the secondary and tertiary industries, electricity supply during the period 1998-2010 experienced negative decoupling; tap water consumption, O<sub>3</sub> 1998-2002, and SPM, SO<sub>2</sub> 2002-2006 did as well. Electricity abuse should be tackled with price strategies. Moreover, for environmental concerns, widely applying renewable energies should be a long-term goal for Kaohsiung's energy policy. Decreasing air pollutants requires not only an industry upgrade and transformation, but also the fulfillment of pollutant emission reduction.

This study has important implications for governmental authorities. We recommend that Kaohsiung City government introduce and encourage businesses to form a high cluster network with local industries and estimate their degrees of pollution. We further recommend that the government levy pollution taxes on high-polluted economic activities. Furthermore, the application of renewable energies and energy-efficient devices warrants further subsidies. Also, some limitations exist in this study. Several important data, such as liquid waste, VOCs, and Pb, are not accessible and, therefore, we can not discuss the decoupling situation of all environmental pressures. In terms of the time span, this paper covers only 12 years of data due to lack of time. Dating back to the earlier stages when the output value of secondary industry was much higher than that of tertiary industry may reveal some other interesting facts about economic development and environmental pressures. Further researches would encompass more concerned environmental pressures and longer time span to observe the dynamic relationships between economy and environment. This provides an evolving model for the authorities and researchers to build an appropriate industrial structure for sustainable cities.

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# EFFECTS OF CORRUPTION AND REGULATORY ENVIRONMENT ON FOREIGN DIRECT INVESTMENT: A CASE STUDY OF AFRICA

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## ABSTRACT

*The impact of corruption on foreign direct investment (FDI) inflows has been analyzed by many recent studies. Corruption can either reduce FDI as a grabbing hand by raising uncertainty and transaction costs or facilitate FDI as a helping hand by "greasing" the wheels of commerce in the presence of a weak regulatory environment. Using the Feasible Generalized Least Squares (FGLS) methodology on 1995-2011 panel data from 53 African countries, this study finds that corruption facilitates FDI inflows to Africa, which is in line with the helping hand hypothesis. Using the Worldwide Governance Indicators (WGI) data, this study also finds that the overall regulatory environment in Africa is weak, which helps explain the context in which the helping hand hypothesis can be validated in Africa. Finally, it is found that Sub-Saharan Africa suffers from a locational disadvantage in attracting FDI vis-à-vis the rest of the continent.*

**JEL:** D73, F21, O55

**KEYWORDS:** Foreign Direct Investment, Corruption, Regulatory Environment, Africa

## INTRODUCTION

Foreign direct investment (FDI) can be defined as the "net inflows of investment to acquire a lasting interest in or management control over an enterprise operating in an economy other than that of the investor" (World Bank, 2012) or "an investment made to acquire lasting interest in enterprises operating outside of the economy of the investor" (UNCTAD, 2013). Although there exists no universally accepted definition of "controlling interest" or "management interest", a commonly accepted threshold is a minimum of 10% ownership of voting stocks or equivalent by a single investor (Moosa, 2002). FDI can play a significant role in the growth dynamics of host countries in a number of ways, such as providing foreign capital/currency for investment, facilitating transfer of technological knowledge, increasing local market competition, creating modern job opportunities, boosting global market access for export commodities, etc. Developing countries have generally welcomed FDI since the early 1980s. Trends in information and communication technologies (ICT) and globalization have also facilitated capital transfer across the globe. As a result, the annual FDI inflow to the least developed countries (LDCs) has jumped from 0.29% of their combined GDP in 1990 to 4.65% of their GDP in 2010 (World Bank, 2012). In 2012, developing countries received \$703 billion in FDI (more than half of global FDI) and remarkably 9 of the 20 largest FDI recipients were developing countries (UNCTAD, 2013).

A sizeable literature has evolved on the determinants of FDI inflows to developing countries. Many studies have focused on the impact of corruption on overall economic performance and FDI, which has led to the emergence of two opposing views - the mainstream view is that corruption harms the economy by breeding inefficiencies and distortions, but the alternative view is that corruption enhances economic efficiency by facilitating decision making processes. The mainstream view holds that corruption impedes FDI as a *grabbing hand* by raising transaction costs for foreign investors (Bardhan, 1997), creating the risk of losing brand goodwill in case of getting tangled up in a corruption scandal (Zhao et al., 2003), providing corrupt firms preferential access to lucrative markets (Habib and Zurawicki, 2002), and negatively affecting important determinants of FDI, such as economic growth (Mauro, 1995) and

education and healthcare services (Gupta et al., 2000). The alternative view holds that corruption extends a *helping hand* to FDI by serving as "speed money" that allows investors to bypass bureaucratic red tape (Huntington, 1968), expediting decision making processes and allowing businesses to avoid heavy government regulations (Lui, 1985), and "greasing the wheels of commerce" in the presence of weak legal and regulatory frameworks (Bardhan, 1997).

The purpose of this study is to analyze the impact of corruption and regulatory environment on FDI inflows to Africa. The study also analyzes whether there exists any regional disparity in FDI inflows between Sub-Saharan Africa and the rest of the continent. The remainder of the paper is organized as follows: the second section presents a review of the empirical literature, the third section discusses the prospects and challenges of FDI in Africa, the fourth section describes the methodology and data, followed by a section on results and policy implications, and the final section concludes the paper.

## LITERATURE REVIEW

The empirical evidence found in the FDI literature about the impact of corruption on FDI is mixed. A few studies have found results that support the *grabbing hand* hypothesis, i.e. corruption reduces FDI inflows. For example, Drabek and Payne (1999) found that high levels of non-transparency (a composite measure comprising corruption, weak property rights, poor governance, etc.) reduce FDI inflows. Wei (2000) used bilateral capital flows from 14 home countries to 53 host countries to analyze the effects of corruption on different types of capital flows and found that corruption reduced FDI more than other types of capital flows. Zhao et al. (2003) studied FDI inflows to 40 countries (from three different groups - OECD, Asia and emerging economies) over 1991-1997 and found that corruption and lack of transparency significantly reduced FDI inflows across regions and economic classifications. Voyer and Beamish (2004) studied a sample of nearly 30,000 Japanese FDI projects in 59 countries, and found that corruption had negative effects on Japanese FDI in emerging economies, but not in industrialized economies.

Several studies found no evidence to support the *grabbing hand* hypothesis and several other studies, such as Wheeler and Mody (1992) and Henisz (2000), found results that support the *helping hand* hypothesis. Akcay (2001) studied FDI inflows to a cross-section of 52 developing countries, and using two different indices of corruption, found no evidence that corruption significantly affects FDI. Smarzynska and Wei (2002) found that foreign investors prefer to set up joint ventures with local partners in corrupt transition economies than to establish subsidiaries. Cuervo-Cazurra (2006) found that host country corruption reduces FDI from home countries that are signatories to a prominent anti-corruption legislation (*OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions*). However, the contrary was found for FDI flowing from relatively corrupt home countries to corrupt host countries, which suggests that investors from relatively corrupt home countries are more likely to invest in host countries with high levels of corruption.

Several studies have concluded that other economic factors, particularly domestic institutions, are more significant determinants of FDI than corruption. For example, Abed and Davoodi (2000) found that low levels of corruption attract more FDI in transition economies, but structural reforms exert much stronger impact on FDI vis-à-vis lower levels of corruption. In a recent study, Quazi et al. (2014) found that corruption affects FDI inflows to Africa positively. This present study builds on Quazi et al. (2014) and improves it in several ways: first, this study uses two different proxy variables for corruption (for details, see the *Model Rationale* section) to check for the robustness of estimated results; second, this study analyzes the critical role played by the overall regulatory environment (i.e. regulatory quality, rule of law, and government effectiveness) in Africa vis-à-vis other regions in providing the context in which either the *helping hand* or *grabbing hand* of corruption is played out; and finally, this study investigates whether the Sub-Saharan African countries suffer from a locational disadvantage in attracting FDI vis-à-vis the rest of the continent.

### FDI in Africa: Challenges and Prospects

After reaching a peak of \$72 billion in 2008, FDI in Africa declined to \$50 billion in 2012. Several African economies, such as Nigeria, South Africa, and Egypt, are still ranked relatively high among the top priority FDI host economies. In West Africa, Ghana and Nigeria account for nearly 75% of the sub-region's FDI inflows. Nigeria, the largest oil-exporter in the continent, is Africa's largest FDI recipient. The lingering political crisis in the Niger Delta has repelled away some foreign investment, while FDI in North Africa has also nosedived due to political instability. The onset of the *Arab Spring* caused FDI inflows to this region to plummet by 50% in 2011, which has however rebounded by 35% in 2012. East Africa, home of low reserves of natural resources, has historically received very little FDI. In contrast, commodity-rich Central Africa has fared much better. In Southern Africa the largest FDI recipient is South Africa, which has witnessed a sharp rebound in FDI, but the other major recipient and a major oil-producer, Angola, has suffered a heavy decline. FDI to Sub-Saharan Africa has almost recovered to the pre-2008 level (UNCTAD, 2013).

Recent data on greenfield FDI projects in Africa suggest that the primary sector is facing rising challenges from the manufacturing and service sectors. Although significant FDI is concentrated in the mining industry, the manufacturing sector accounts for over 40% of greenfield FDI. Industries that are currently drawing substantial FDI include construction, electricity, gas and water distribution, transportation and storage, communications, petroleum products and nuclear fuel. Rising demand from an emerging middle class has also drawn huge FDI into banking, retail and telecommunications (ibid).

In recent years, FDI inflow to Africa from several emerging economies, such as China and India, has become significant. This upward trend has been fueled by the growing internationalization of emerging country TNCs (Transnational Corporations) and higher demand for natural resources in these fast-growing economies. China has now become a major investor in Sub-Saharan Africa, primarily to safeguard its access to supplies of raw materials, which are essential for its current drive toward massive industrialization. Among other emerging economies, India, Malaysia and Russia have also invested substantial capital in Africa. The Chinese and Indian investors have invested heavily in infrastructure and manufacturing, particularly in textiles and clothing industries. Since labor costs in Africa are comparable with these emerging countries, these investments do not yield significant savings on labor costs. However, the *African Growth and Opportunity Act (AGOA)* and the European Union's *Everything But Arms (EBA)* initiatives have granted African products special duty-free and quota-free access to developed country markets, which has prompted some of these emerging country investors to relocate their operations to Africa (ibid).

Emerging country investors, many of whom are state-owned enterprises, are generally less concerned than developed country investors about the impact of the global economic downturn on Africa. Their confidence/resiliency has helped the African countries ride out the last global financial crisis relatively well. Another benefit of emerging country FDI is that much of it is invested heavily in labor-intensive manufacturing sector, which has a high potential for job creation. During 2003–2005, the number of jobs created by emerging country FDI in Africa nearly doubled. Chinese investors are playing a vital role in building Special Economic Zones (SEZs) in several African countries. These SEZs should improve the infrastructure network, promote industrialization, boost employment opportunities and facilitate technology transfer. Technologies used by the emerging country TNCs are more compatible with the current technologies in Africa, which should lead to relatively effortless diffusion of knowledge to local producers and ultimately contribute to the structural advancement of local economies (ibid).

## METHODOLOGY

Following the current FDI literature, a general-to-specific regression equation is specified below (subscript  $i$  refers to countries and  $t$  refers to time).

$$\begin{aligned} \text{FDI}_{i,t} = & \alpha + \beta_1 \text{Corruption}_{i,t} + \beta_2 \Delta \text{FDI}_{i,t-1} + \beta_3 \text{Economic Freedom}_{i,t} + \beta_4 \text{Rate of Return}_{i,t} \\ & + \beta_5 \text{Infrastructure}_{i,t} + \beta_6 \text{Human Capital}_{i,t} + \beta_7 \text{Political Stability}_{i,t} + \beta_8 \text{Region}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

### Model Rationale

*Corruption:* The main objective of this study is to estimate the impact of corruption on FDI. This study uses two proxy variables for corruption - the *Corruption Perceptions Index* (CPI), developed by the Transparency International and the *Control of Corruption* indicator from the *Worldwide Governance Indicators (WGI)*, developed by the World Bank. On the CPI index, countries receive scores from 0 (highly corrupt) to 10 (very clean), so a higher CPI score reflects less corruption. On the corruption control index, countries are scored from -2.5 (weak control of corruption) to 2.5 (strong control of corruption), so a higher corruption control score also reflects less corruption. If the estimated coefficient of the corruption index turns out positive, that would indicate that less corruption attracts more FDI, which will support the *grabbing hand* hypothesis. On the other hand, a negative coefficient will imply that higher level of corruption attracts more FDI, which will support the *helping hand* hypothesis.

*Lagged Changes in FDI ( $\Delta \text{FDI}_{i,t-1}$ ):* Foreign investors usually tend to avoid unfamiliar territories. Therefore, it is important for countries aspiring to attract FDI to first establish a positive track record, which can help dispel the foreign investors' fear of investing in that country. Incremental lagged changes in FDI ( $\Delta \text{FDI}_{i,t-1}$ ) should contribute positively toward the current level of FDI. *Economic Freedom:* The overall investment climate in a host country plays a critical role in attracting FDI. The annual *Economic Freedom Index*, jointly published by the Heritage Foundation and *Wall Street Journal*, is often used as a proxy for domestic investment climate. This index also includes measures of financial liberalization and trade openness -- variables that have been used in many FDI studies. To avoid multicollinearity among them, these variables are not included separately in the regression equation.

*Rate of Return:* Higher rate of return on investment should attract more FDI. However, measuring the rate of return on investment in developing countries is difficult as well-developed capital markets are generally absent there. Several studies, such as Edwards (1990) and Jaspersen et al. (2000), have used a proxy variable for the rate of return on investment - the inverse of per capita income. The rationale is that return on investment should be positively correlated with the marginal productivity of capital, which is high in capital-scarce poor countries, where per capita income is low (or the inverse of per capita income is high). Therefore, the inverse of per capita income should be positively related to FDI inflow.

*Infrastructure:* Access to infrastructure (i.e. electricity, telecommunication, roads, ports, etc.) should boost the locational advantage of a host country and help attract FDI.

*Human Capital:* Higher level of human capital is a good indicator of the availability of a skilled workforce, which can significantly enhance the locational advantage of a host country.

*Political Stability:* Political instability/uncertainty usually creates an unfavorable business climate, which drives risk-averse foreign investors away.

*Region:* Many countries in Sub-Saharan Africa are land-locked, which creates a locational disadvantage for commerce and trade. It can be hypothesized that due to this geographical feature, Sub-Saharan African



countries suffer from a locational disadvantage as a destination of FDI vis-à-vis other African countries. A dummy variable (1 for Sub-Saharan Africa and 0 otherwise) is used to capture the regional difference.

Data

This study uses panel data covering the 1995-2011 period from 53 African countries (47 countries from Sub-Saharan Africa and 6 countries from North Africa). Net foreign direct investment inflows (% of GDP) is used as a measure of FDI, two variables are used as proxy variables for rate of return on investment - natural log of the inverse of per capita real GDP and natural log of the inverse of per capita real GDP adjusted for purchasing power parity (PPP), two variables are used as proxy for infrastructure - natural log of telephone lines per 100 people and natural log of per capita electricity use in kilowatt hours, and human capital is measured by the natural log of per capita healthcare expenditures (two other proxy variables for human capital --natural log of life expectancy at birth and share of GDP spent on healthcare expenditures-- were also included in alternative model specifications; however, statistical properties of the estimated results were not satisfactory). Data on annual FDI inflow, per capita real GDP, infrastructure, and human capital are collected from the *World Development Indicators* (World Bank, 2012), economic freedom index is collected from the *Index of Economic Freedom* (Heritage Foundation/Wall Street Journal, 2012), political stability index is collected from the *Worldwide Governance Indicators* (WGI, 2012), and the two corruption indices are collected from the *Corruption Perceptions Index* (Transparency International, 2012) and the *Worldwide Governance Indicators* (WGI, 2012). Table 1 below presents the summary statistics of variables used in the regression equation.

Table 1: Summary Statistics of Variables

Variables	Mean	St. Deviation	Maximum	Minimum
Foreign Direct Investment (% of GDP)	4.87	10.37	145.20	-82.89
Corruption Perceptions Index	3.08	1.12	6.80	0.69
Corruption Control Index	-0.55	0.60	1.25	-2.06
Economic Freedom Index	53.69	8.33	77.00	21.40
Political Stability Index	-0.47	0.93	1.54	-2.99
Per Capita Income (US\$)	1,893	3,077	16,350	50
Per Capita Income (US\$ - PPP adjusted)	3,630	5,125	27,346	102
Per Capita Electricity Use (kwh)	829.63	1,245.57	5,108.41	22.82
Per Capita Healthcare Expenditures (US\$)	184.74	294.43	2,443.20	9.51

Notes: Table 1 presents the summary statistics of variables used in model estimation. These variables are discussed in details in previous sections (Model Rationale and Data).

**RESULTS AND DISCUSSIONS**

The regression equation is estimated using the Feasible Generalized Least Squares (FGLS) panel methodology. The White test suggested presence of heteroscedasticity, but there was no sign of autocorrelation. Therefore, the model was estimated with heteroscedastic panels. Estimated results from four versions of the model are presented in Table 2 and Table 3. Since each version was estimated with two proxy variables for corruption (corruption perceptions index and corruption control index), there are eight sets of regression results. Table 2 shows that all the estimated coefficients in Model 1a turned out statistically significant with the correct *a priori* signs, while in Model 1b a few coefficients turned marginally insignificant with the correct *a priori* signs. Model 2 enhances Model 1 by adding a proxy variable for human capital, which turned out statistically significant with the correct *a priori* signs in both versions. In Table 3 (see next page), Model 3 modifies Model 2 by replacing the proxy variable for infrastructure (i.e. natural log of telephone lines per 100 people is replaced by natural log of per capita electricity use). Finally, Model 4 modifies Model 3 by replacing the proxy variable for rate of return (i.e.

natural log of the inverse of per capita real GDP adjusted for PPP is replaced by the natural log of the inverse of per capita real GDP).

Table 2: Feasible Generalized Least Squares (FGLS) Panel Estimation

Explanatory Variables	Model 1				Model 2			
	Model 1.a.		Model 1.b.		Model 2.a.		Model 2.b.	
	Coefficient	z stat	Coefficient	z stat	Coefficient	z stat	Coefficient	z stat
Constant	-8.67	-5.53	-9.50	-4.24	-9.60	-4.94	-9.95	-3.53
$\Delta FDI_{t-1}$	0.31	4.63**	0.29	3.41**	0.32	3.96**	0.29	3.22**
Corruption Perceptions Index	-0.65	-1.66*			-0.52	-1.21		
Corruption Control Index			-0.34	-0.57			-0.27	-0.35
Economic Freedom Index	0.22	6.32**	0.19	4.83**	0.20	4.84**	0.17	3.72**
Political Stability Index	0.67	2.50**	0.39	1.60	0.58	1.98**	0.36	1.22
Infrastructure (phone)	0.70	1.67*	0.67	1.31	0.67	1.63	0.68	1.38
Rate of Return (PPP)	2.56	6.26**	2.79	6.01**	2.12	4.06**	2.15	3.73**
Sub-Saharan Africa	-1.93	-6.13**	-1.84	-4.51**	-1.92	-6.55**	-1.80	-4.36**
Human Capital					0.29	2.91**	0.30	3.04**
Sample size	63		63		63		63	
Wald $\chi^2$	167.58		113.64		131.08		113.97	
Log Likelihood	-117.54		-119.03		-116.79		-117.72	

\*\* coefficient statistically significant at 5% level of significance, \* coefficient statistically significant at 10% level of significance Notes: Results presented in Table 2 above show that all the estimated coefficients in Model 1a turned out statistically significant with the correct a priori signs, while in Model 1b a few coefficients turned marginally insignificant with the correct a priori signs. Model 2 extends Model 1 by adding a proxy variable for human capital, which turned out statistically significant with the correct a priori signs in both versions.

The explanatory variables included in the regression equation generally turned out with satisfactory statistical properties. Three variables, incremental lagged changes in FDI, rate of return on investment and human capital, turned out statistically highly significant with the correct *a priori* signs in all versions; political stability turned out statistically highly significant in six versions and marginally significant in two versions, economic freedom and Sub-Saharan Africa regional dummy variable turned out highly significant in four versions, and infrastructure turned out highly significant in one version and marginally significant in six versions. The overall diagnostic statistics (measured by log likelihood and Wald  $\chi^2$  statistics) came out satisfactory for all models. The coefficients of both proxy variables for corruption (*Corruption Perceptions Index* and *Corruption Control Index*) turned out negative in all four models, and statistically significant in three versions. These results suggest that there is evidence that less corrupt countries in Africa attract less FDI, which validates the *helping hand* hypothesis of corruption (i.e. more corrupt countries attract more FDI) for this sample. This study finds that corruption facilitates FDI in Africa, which is in line with the *helping hand* hypothesis that corruption "greases" the wheels of commerce in the presence of a weak regulatory environment. The next section analyzes the regulatory environment in Africa vis-à-vis other regions.

### Regulatory Environment in Africa and Other Regions

To analyze the regulatory environment in Africa vis-à-vis other regions, this study uses several indicators from the *Worldwide Governance Indicators*, developed by the World Bank. The *WGI* reports governance perception indicators for over 200 economies for six dimensions of governance -- political stability and absence of violence, voice and accountability, government effectiveness, regulatory quality, rule of law, and control of corruption (WGI, 2012). The regression models estimated in this study have used the first dimension (*political stability and absence of violence*) as a proxy variable for political stability and the last dimension (*control of corruption*) as one of two proxy variables for corruption. These six indicators are constructed with data from 31 sources that are compiled from survey responses from a wide variety of institutes, NGOs, international organizations, and private enterprises. The *WGI* data draw on four different types of surveys -- households and firms (9 data sources), commercial business information providers (4 data sources), NGOs (10 data sources), and public sector organizations (8 data sources).

Table 3: Feasible Generalized Least Squares (FGLS) Panel Estimation (Cont'd)

Explanatory Variables	Model 3				Model 4			
	Model 3.a.		Model 3.b.		Model 4.a.		Model 4.b.	
	Coefficient	z stat	Coefficient	z stat	Coefficient	z stat	coefficient	z stat
Constant	0.69	0.36	-1.04	-0.58	0.35	0.19	-1.04	-0.59
$\Delta FDI_{t-1}$	0.22	3.05**	0.29	4.89**	0.23	3.25**	0.29	4.72**
Corruption Perceptions Index	-0.15	-0.65			-0.15	-0.66		
Corruption Control Index			-0.60	-1.84*			-0.61	-1.81*
Economic Freedom Index	-0.003	-0.11	0.01	0.58	-0.01	-0.37	0.003	0.16
Political Stability Index	0.71	3.71**	0.75	4.41**	0.62	3.40**	0.68	4.09**
Infrastructure (electricity)	0.20	1.01	0.15	0.86	0.30	1.53	0.22	1.25
Human Capital	0.21	2.26**	0.31	3.70**	0.22	2.48**	0.33	3.94**
Sub-Saharan Africa	0.12	0.38	-0.09	-0.30	0.37	1.11	0.14	0.44
Rate of Return (PPP)	0.99	2.19**	0.98	2.58**				
Rate of Return					0.32	2.52**	0.30	2.75**
Sample size	204		229		206		231	
Wald $\chi^2$	73.97		116.93		68.29		103.57	
Log Likelihood	-409.04		-447.97		-414.06		-453.5	

\*\* coefficient statistically significant at 5% level of significance, \* coefficient statistically significant at 10% level of significance Notes: In Table 3 above, Model 3 modifies Model 2 by replacing the proxy variable for infrastructure (i.e. natural log of telephone lines per 100 people is replaced by natural log of per capita electricity use), and Model 4 modifies Model 3 by replacing the proxy variable for rate of return (i.e. natural log of the inverse of per capita real GDP adjusted for PPP is replaced by the natural log of the inverse of per capita real GDP).

This study uses three of the six *WGI* indicators -- regulatory quality, rule of law, and government effectiveness -- to measure the quality of regulatory environment in Africa vis-à-vis other regions. These three indicators are described in the *WGI 2012* report as the following:

*"Regulatory Quality: captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Rule of Law: captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Government Effectiveness: captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies."*

The *WGI* dataset includes 14 years of data from 1996, 1998, 2000, and 2002-12. For each year covered in the dataset, countries are scored on each one of the three indicators from -2.5 (poor quality) to 2.5 (high quality); so higher scores reflect higher quality of the regulatory environment. Table 4 lists average scores for each one of the three indicators for Africa vis-à-vis five regions (North America, Europe & Central Asia, Latin America & Caribbean, East Asia & Pacific, and South Asia) as well as the world average. On all three indicators, Africa is ranked last among all regions with a highly negative score, which suggests that the overall quality of regulatory environment in Africa is weak in absolute terms and also weaker vis-à-vis other regions in relative terms. This section finds that the overall regulatory environment is weak in Africa, which lends credence to the regression results that suggested that corruption facilitates FDI in Africa by "greasing" the wheels of commerce in the presence of a weak regulatory environment.

### Policy Implications

This study has several noteworthy results. First, in addition to the usual determinants of FDI found in the literature, this study finds that corruption is a significantly positive determinant of FDI in Africa. The overall quality of regulatory environment is also found to be weak in Africa, which helps explain the context in which corruption can facilitate FDI. Over time, as the regulatory environment (i.e. regulatory quality, rule of law, government effectiveness, etc.) improves in Africa and eventually catches up with

other regions, it is likely that the impact of corruption on FDI will exhibit the same negative pattern as found in other regions with higher regulatory quality, i.e. the *helping hand* of corruption may in time turn into the *grabbing hand* of corruption. Higher incremental lagged changes in FDI, which is a proxy variable for foreign investors' increased knowledge/understanding about the host country, is found to significantly boost the current level of FDI. This result suggests that if a host country is able to successfully attract incremental FDI, that will boost foreign investors' confidence in an already familiar territory, which in turn will open the door to additional FDI inflow. African countries should therefore undertake strategies to adequately mitigate the risk-averse foreign investors' fear of committing initial investment in Africa, which once dispelled can set a virtuous cycle in motion by attracting additional FDI.

Table 4: Regulatory Environment – Africa vs. Other Regions

Regions	n	Regulatory Quality	Rule of Law	Govt. Effectiveness
North America	3	1.51	1.45	1.52
Europe & Central Asia	54	0.61	0.48	0.59
Latin America & Caribbean	37	0.14	-0.07	0.07
East Asia & Pacific	34	-0.09	0.19	0.01
South Asia	8	-0.60	-0.47	-0.42
Africa	53	-0.67	-0.67	-0.67
World	204	-0.03	-0.04	-0.03

Notes: Table 4 above presents three indicators of the overall regulatory environment in Africa vis-à-vis five regions. On all three indicators, Africa is ranked last among all regions with a highly negative score, which suggests that the overall quality of regulatory environment in Africa is weak in absolute terms and also weaker vis-à-vis other regions in relative terms.

Political stability is found to be a significantly positive determinant of FDI in Africa. African countries should, therefore, steer clear of politically destabilizing events that erode foreign investors' confidence and instead strive to maintain a politically stable environment that is conducive not only to foreign investment, but also to overall economic growth. Higher return on investment is found to exert positive impact on FDI, which suggests that FDI decisions in Africa, like any other region, are influenced by profit seeking opportunities. Higher quality human capital, improved infrastructure and economic freedom can also positively affect FDI inflows, which African countries should take into account when designing long-term strategies to enhance their locational advantage.

Finally, it is found that even after the economic fundamentals (i.e. political stability, rate of return, infrastructure, etc.) are accounted for, Sub-Saharan Africa still suffers from a locational disadvantage vis-à-vis the rest of the continent as a destination of FDI. This locational disadvantage is likely caused by a unique geographical feature of this region -- many Sub-Saharan African countries are land-locked. While this geographical feature is not a policy instrument for Sub-Saharan African countries, it is important to recognize the obstructive role played by their geography in raising transaction costs, which suppress commerce, trade and investment. To offset this locational disadvantage and attract the same amount of FDI as other countries in the continent, the Sub-Saharan African countries will have to attain higher levels in economic fundamentals vis-à-vis their competition.

## CONCLUSION

The primary goal of this study is to analyze the role of corruption and regulatory environment on FDI inflows in Africa. The mainstream view in the FDI literature holds that corruption impedes FDI as a *grabbing hand* by raising transaction costs for foreign investors, but the alternative view holds that corruption extends a *helping hand* to FDI by "greasing the wheels of commerce" in the presence of weak legal and regulatory frameworks. Using the Feasible Generalized Least Squares (FGLS) methodology on 1995-2011 panel data from 53 African countries, this study finds that corruption in fact facilitates FDI inflow to Africa. These results are in line with the *helping hand* hypothesis that corruption "greases" the wheels of commerce in the presence of a weak regulatory environment. Using the *Worldwide Governance Indicators (WGI)* data, this study also finds that the quality of regulatory environment in Africa is weak,

which helps explain the context in which the *helping hand* hypothesis can be validated. Finally, it is found that Sub-Saharan Africa suffers from a locational disadvantage in attracting FDI vis-à-vis the rest of the continent, likely due to the location of a high number of land-locked countries in this region.

A possible limitation of this study is that it tests the *grabbing hand* vs. *helping hand* hypothesis only in the context of Africa. This limitation can be addressed by expanding the sample to include more developing countries with weak regulatory environment (particularly from Latin America and Asia), which is an avenue of future research. The research focus of this study is worthwhile as it seeks to further our knowledge of the FDI dynamics in Africa. Results estimated in this study suggest that, in addition to corruption, there are several other significant determinants of FDI in Africa, which include foreign investors' better familiarity with host economy, political stability, higher return on investment, higher quality human capital, improved infrastructure, and overall economic freedom. African countries should, therefore, focus on formulating strategies to promote these economic fundamentals, which will not only attract more FDI inflows in the short run, but also foster a healthy economic environment necessary for their overall economic development in the long run.

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# THE DEMAND FOR MEDICAL COSMETOLOGY: EVIDENCE FROM CHINA

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## ABSTRACT

*The purpose of this study is to investigate the demand for medical cosmetology from the perspective of Mainland China, Hong Kong, and Macao people. We use a questionnaire, and examine the effects of demographic variables on the demand for medical cosmetology. The findings show that demographic variables may lead to significant differences in the most wanted channel, the most wanted surgery, and the acceptable expense. Only monthly income leads to significant differences in the main reason for medical cosmetology in Taiwan.*

**JEL:** I11, M30

**KEYWORDS:** Medical Cosmetology, Medical Tourism

## INTRODUCTION

With the advancement of technology and rising GDP, more people have a greater desire to enhance their beauty. They undergo various medical cosmetic procedures, such as breast augmentation, double eyelid surgery, nose augmentation, Botox injections, and cosmetic laser surgery, to make themselves look better or to retain their youthful looks.

Though Taiwan is in the early stages of developing medical care services for the international market, it has huge potential due to its advanced medical technology, highly qualified doctors, and cheaper medical expenses. Taiwan's medical tourism presently targets foreign visitors who expect to receive high quality medical services at reasonable prices. Over the past few years, most foreign medical tourists have sought out health examinations, minimally-invasive therapies, and cosmetic surgeries that do not require a long recovery period in Taiwan.

Mainland China, Hong Kong, and Macao residents are the most important consumers for Taiwan's medical tourism industry. This occurs because of accelerated development in cross-strait tourism, fast medical visas, a common language similar culture, and Taiwan's medical care being on par with international levels, but at reasonable prices. Research focusing on Taiwan's medical tourism industry or medical tourists from mainland China, Hong Kong, and Macao is rather limited. This study collected opinions of 535 medical tourists from these three areas to investigate their demand for medical cosmetology. We utilize a questionnaire format. Results of this study can provide a reference for medical and tourism industries in cross-industry cooperation as well as in the development of medical tourism programs and related facilities.

The rest of this paper is organized as follows. Section 2 reviews previous research on medical cosmetology and medical tourism. Section 3 describes the data and method we employ. Section 4 reports the results, and section 5 concludes the paper.

## LITERATURE REVIEW

With the advancement of technology and rising GDP, more people have a greater desire to enhance their beauty. They undergo various treatments, such as traditional facial treading, cosmetic products, and modern medical cosmetology, to make themselves look better or retain their youthful looks. The term "medical cosmetology" combines two key factors: medical and cosmetology. According to Frost and Sullivan Research Service in 2007, medical cosmetology can be classified into surgical cosmetic procedures and non-surgical cosmetic procedures. The former include invasive treatments such as breast

augmentation, liposuction, double eyelid surgery, nose augmentation and others. The latter encompass non-invasive treatments like chemical peel, Botox injection, cosmetic laser and others.

American Society of Plastic Surgeons (ASPS) statistics for all cosmetic surgical procedures in 2011, shows in the U.S., non-surgical cosmetic procedures accounted for 88%. The top five Minimally Invasive Solutions (MIS) are: Botox injection (46.3%), Autologous Fat Transplantation (15.4%), chemical peel (9.1%), laser hair removal (8.8%), and Microdermabrasion (7.4%), for a total of US\$13,828,760.

Medical tourism has grown rapidly in the past decade. The term “medical tourism” combines two key factors: medical and tourism. The word “medical” means the treatment of an illness, disorder, or injury, and the word “tourism” comprises “the activities of persons traveling to and staying in a place outside their usual environment for leisure, business and other purposes” according to the definition of the World Tourism Organization (WTO). In its broadest definition, medical tourism refers to “travel with the express purpose of obtaining health services abroad” (Ramirez, 2007). WTO defined medical tourism as “tourism services based on healthcare and nursing, sickness and health, and recovery and rehabilitation”, which consists of health tourism and medical tourism.

Carrera and Bridges (2006) classified health tourism as “organized travel outside one’s local environment for the maintenance, enhancement or restoration of an individual’s wellbeing in mind and body” and medical tourism as “organized travel outside one’s natural healthcare jurisdiction for the enhancement or restoration of the individual’s health through medical intervention”. Medical tourism focuses more on surgical procedures, while health tourism is a much broader concept centered mainly on maintaining or improving the body and relaxing the mind. This study focuses on medical tourism.

Factors leading to increasing popularity of medical tourism include high costs and long waiting times in a patient’s home country (Grennan, 2003; Forgione and Smith, 2007), new technology and skills in the destination countries, reduced transport costs (Carrera and Bridges, 2006; Connell, 2006), and Internet marketing (Connell, 2006). Factors motivating medical tourism vary from place to place. For example, avoidance of waiting times is the main reason for medical tourism from the UK (Bies and Zacharia, 2007), whereas in the U.S., the leading factor is lower costs abroad (Forgione and Smith, 2007). The most popular medical tourist destinations are Argentina, Cuba, Colombia, Costa Rica, Hungary, India, Jordan, Malaysia, Philippines, Singapore, South Africa, Thailand, South Korea, Tunisia, Ukraine, and New Zealand (Gahlinger, 2008). Asian countries are famous for “First World Health Care at Third World Prices”, because medical expenses are about one-tenth of Western country prices (Cetron et al., 2006; Turner, 2007).

Most research studies in Asia focusing on medical tourism destinations target South Korea (Lee, Han, & Lockyer, 2012; Yu, & Ko, 2012), Thailand (NaRanong & NaRanong, 2011), India (Crooks, et al., 2011; Vijaya, 2010), and Hong Kong (Heung, Kucukusta, & Song, 2011; Ye, Qiu & Yuen, 2011). Lee, Han, & Lockyer (2012) applied the Theory of Planned Behavior to examine the intention of Japanese tourists to travel to South Korea. Yu, & Ko (2012) observed factors related to perceptions of and possible participation in medical tourism by Chinese, Japanese, and Korean visitors to Jeju Island in South Korea. NaRanong & NaRanong (2011) explored positive and negative effects of medical tourism on the economy, health staff and medical costs in Thailand. Heung, Kucukusta, & Song (2011) analyzed factors influencing the development of medical tourism in Hong Kong. Ye, Qiu & Yuen (2011) explored motivations and experiences of obstetric patients from mainland China for traveling to give birth in Hong Kong. However, research focusing on Taiwan’s medical tourism industry or medical tourists from mainland China, Hong Kong, and Macao is rather limited.

## DATA AND METHODOLOGY

We administered the questionnaires from January 1, 2013 to April 1, 2013 to residents from mainland China, Hong Kong, and Macao using convenience sampling. The questionnaires were administered at some of Taiwan’s most famous scenic attractions where mainland Chinese tourists were likely to visit, such as the



National Palace Museum, Alishan National Scenic Area, Sun Moon Lake and Taipei 101. A total of 588 surveys were distributed resulting in 535 usable responses, for a response rate of 90.99%.

Gauging scales are selected from the literature. The main reason for medical cosmetology in Taiwan is gauged by five items taken from Carrera and Bridges (2006), and Connell (2006). These items are advanced medical technology, star effect, lower cost, highly qualified doctors, and easy to communicate. The most wanted channels are measured by five items: recommendation from friends, mass media, website (Connell, 2006), travel agency, and others. The most wanted surgery is measured by six items: liposuction slimming, breast augmentation, whitening and anti- wrinkle, facial cosmetic surgery, repair surgery, and others. Acceptable expense is gauged by six items: lower than RMB\$20,001, RMB\$20,001 - 40,000, RMB\$40,001 - 60,000, RMB\$60,001 - 80,000, RMB\$80,001 - 100,000, and more than RMB\$100,000.

## ANALYSES AND RESULTS

Through descriptive statistics analysis in Table 1, we identified basic attributes of the sample are female (74.4%), unmarried (54.6%), 21-30 years old (48.2%), university education level (54.4%), monthly income RMB\$5,001-8,000 (33.5%), and work in service industry (35.1%).

Table 1: Descriptive Statistics Analysis of Sample

	Items	No. of Respondents	Percent
Gender	Male	137	25.6
	Female	398	74.4
Marital status	Unmarried	292	54.6
	Married	243	45.4
Age group	younger than 20 years old	18	3.4
	21-30 years old	258	48.2
	31-40 years old	140	26.2
	41-50 years old	57	10.7
	older than 50 years old	62	11.6
Education level	junior high school	45	8.4
	senior high school	162	30.3
	University	291	54.4
	graduate school	37	6.9
Residential area	northern China	119	22.2
	central China	49	9.2
	eastern China	69	12.9
	southern China	79	14.8
	Hong Kong and Macao	106	19.8
	northeastern China	65	12.1
	southwestern China	26	4.9
	northwestern China	22	4.1
Occupation	service industry	188	35.1
	manufacturing industry	110	20.6
	public servants & teachers	58	10.8
	students	98	18.3
	Others	81	15.1
Monthly income (RMB)	below 2000	113	21.1

Table 2 shows the main reason for medical cosmetic surgery in Taiwan is consumers can communicate with doctors without language barriers (32%), followed by advanced medical technology (29.3%). The channels that consumers most wanted are recommendations from friends (31.4%), mass media (28.2%), and website (26.2%). Some 41.1% of the subjects want to conduct facial cosmetic surgery, followed by whitening and anti-wrinkle (21.5%), and liposuction slimming (17.8%). Finally, the most acceptable expense is lower than RMB\$20,001 (32%), followed by RMB\$20,001 - 40,000.

Table 2: Demand Analysis

	Items	No. of Respondents	Percent
Main reason for medical cosmetology in Taiwan	advanced medical technology	157	29.3
	star effect	71	13.3
	much cheaper medical expenses	49	9.2
	highly qualified doctors	87	16.3
	easy to communicate	171	32.0
Most wanted channel	recommendation from friends	168	31.4
	mass media	154	28.8
	website	140	26.2
	travel agency	54	10.1
	others	19	3.6
Most wanted surgery	liposuction slimming	95	17.8
	breast augmentation	60	11.2
	whitening and anti- wrinkle	115	21.5
	facial cosmetic surgery	220	41.1
	repair surgery	39	7.3
Acceptable expense (RMB )	others	6	1.1
	lower than 20,001	171	32.0
	20,001-40,000	169	31.6
	40,001-60,000	131	24.5
	60,001-80,000	38	7.1
	80,001-100,000	22	4.1
	more than100,00	4	0.7

As presented in Table 3, the p-values of gender, marital status, age group, educational level, residential area, and occupation are all larger than 0.05 except monthly income (p-value=0.046). This suggests that monthly income may lead to significant differences in the main reason for medical cosmetology in Taiwan. The p-values of gender, marital status, age group, educational level, residential area, occupation, and monthly income are all smaller than 0.05 in Table 4, Table 5, and Table 6. This implies that all demographic variables may lead to significant differences in the most wanted channel, most wanted surgery, and acceptable expense.

From Table 4 we see that subjects who are female, unmarried, 21-30 years old, university or graduate school education level, students or work in service industry, recommendation from friends is their preferred channel. Subjects who are male, married, 31-40 or more than 50 years old, junior high school education level, public servants or work in manufacturing industry, monthly income RMB\$5,001 - 8,000, mass media is their preferred choice. For people who are younger than 20 years old, senior high school education level, website is the most wanted channel. Table 5 shows that facial cosmetic surgery is the most wanted surgery for all subjects dominantly. Additionally, Table 6 shows that lower than RMB\$20,001 is the preferred expense for subjects who are unmarried, 21-30 years old, university education level, students, monthly

income below RMB\$2,000. Otherwise, RMB\$20,001 – 40,000 is the primary acceptable expense for most other subjects.

Table 3: Chi-Square Analysis – Main Reason

		Main Reason					Total
		1	2	3	4	5	
Gender (p=0.067)	male	35	12	19	23	48	137
	female	122	59	30	64	123	398
Marital status (p=0.393)	unmarried	92	35	27	41	97	292
	married	65	36	22	46	74	243
Age (p=0.247)	younger than 20	9	4	0	1	4	18
	21-30	76	37	19	39	87	258
	31-40	45	14	15	24	42	140
	41-50	14	6	5	9	23	57
Education (p=0.264)	older than 50	13	10	10	14	15	62
	junior high school	15	8	1	10	11	45
	senior high school	47	21	23	25	46	162
	university	82	39	23	48	99	291
Residential area (p=0.114)	graduate school	13	3	2	4	15	37
	northern China	45	8	7	16	43	119
	central China	12	8	6	9	14	49
	eastern China	17	8	9	11	24	69
	southern china	26	13	13	11	16	79
	Hong Kong & Macao	31	19	6	17	34	107
	northeastern China	13	8	6	17	21	65
	southwestern China	7	2	2	4	11	26
	northwestern China	6	5	0	2	8	21
	service industry	52	31	13	34	58	188
Occupation (p=0.128)	manufacturing	33	12	10	15	40	110
	public servants	17	6	10	9	16	58
	students	33	15	8	12	30	98
	others	22	7	8	17	27	81
Income (p=0.046)	below 2,000	40	15	8	19	31	113
	2,001-5,000	40	28	9	23	57	157
	5,001-8,000	54	23	21	31	50	179
	8,001-11,000	16	3	10	6	17	52
	11,001-14,000	6	0	1	4	7	18
	more than 14,000	1	2	0	4	9	16
	Total	157	71	49	87	171	535

1=advanced medical technology, 2=star effect, 3=much cheaper medical expenses, 4=highly qualified doctors, 5= easy to communicate.

Table 4: Chi-Square Analysis – Most Wanted Channel

		Most wanted channel					Total
		1	2	3	4	5	
Gender (p=0.033)	male	35	51	31	12	8	137
	female	133	103	109	42	11	398
Marital status (p=0.001)	unmarried	100	66	82	28	16	292
	married	68	88	58	26	3	243
Age (p=0.012)	younger than 20	5	5	7	0	1	18
	21-30	93	61	69	19	16	258
	31-40	39	46	34	21	0	140
	41-50	16	15	17	9	0	57
Education (p=0.008)	older than 50	15	27	13	5	2	62
	junior high school	12	17	9	3	4	45
	senior high school	45	45	51	19	2	162
	university	90	88	70	30	13	291
Residential area (p=0.000)	graduate school	21	4	10	2	0	37
	northern China	31	17	43	15	13	119
	central China	18	15	9	7	0	49
	eastern China	30	23	11	4	1	69
	southern china	21	24	24	7	3	79
	Hong Kong & Macao	39	25	34	8	1	107
	northeastern China	15	29	12	8	1	65
	southwestern China	8	14	2	2	0	26
Occupation (p=0.002)	northwestern China	6	7	5	3	0	21
	service industry	67	52	50	17	2	188
	manufacturing	28	33	31	14	4	110
	public servants	13	23	12	9	1	58
	students	35	20	28	6	9	98
Income (p=0.000)	others	25	26	19	8	3	81
	below 2,000	40	16	33	12	12	113
	2,001-5,000	52	40	47	12	6	157
	5,001-8,000	38	82	44	15	0	179
	8,001-11,000	20	13	9	10	0	52
11,001-14,000	11	2	2	3	0	18	
more than 14,000	7	1	5	2	1	16	
Total		168	154	140	54	19	535

1=recommendation from friends, 2=mass media, 3=website, 4=travel agency, 5= others, p=p value (2-sided)

Table 5: Chi-Square Analysis – Most Wanted Surgery

		Most Wanted Surgerv						Total
		1	2	3	4	5	6	
Gender (p=0.000)	male	26	2	34	40	31	4	137
	female	69	58	81	180	8	2	398
Marital status (p=0.000)	unmarried	57	27	50	147	7	4	292
	married	38	33	65	73	32	2	243
Age (p=0.000)	younger than 20	4	3	2	7	2	0	18
	21-30	57	27	51	115	4	4	258
	31-40	18	17	27	70	8	0	140
	41-50	12	8	11	16	9	1	57
Education (p=0.021)	older than 50	4	5	24	12	16	1	62
	junior high school	7	7	11	13	6	1	45
	senior high school	23	23	40	58	17	1	162
	university	55	27	57	136	14	2	291
Residential area (p=0.000)	graduate school	10	3	7	13	2	2	37
	northern China	31	4	14	67	2	1	119
	central China	5	8	10	22	4	0	49
	eastern China	14	6	18	28	3	0	69
	southern china	6	12	24	29	7	1	79
	Hong Kong & Macao	22	19	17	41	6	2	107
	northeastern China	6	8	20	20	10	1	65
	southwestern China	6	2	6	9	3	0	26
Occupation (p=0.001)	northwestern China	5	1	6	4	4	1	21
	service industry	32	32	32	84	6	2	188
	manufacturing	18	8	26	40	17	1	110
	public servants	8	5	15	26	4	0	58
	students	24	8	14	46	4	2	98
Income (p=0.003)	others	13	7	28	24	8	1	81
	below 2,000	30	10	15	53	4	1	113
	2,001-5,000	32	26	35	57	4	3	157
	5,001-8,000	19	21	45	69	23	2	179
	8,001-11,000	7	1	14	24	6	0	52
	11,001-14,000	3	1	3	9	2	0	18
	more than 14,000	4	1	3	8	0	0	16
	Total	95	60	115	220	39	6	535

1=liposuction slimming, 2=breast augmentation, 3=whitening and anti-wrinkle, 4=facial cosmetic surgery, 5=repair surgery, 6=others, p=p value (2-sided).

Table 6. Chi-Square Analysis – Acceptable Expense

		Acceptable Expense						Total
		1	2	3	4	5	6	
Gender (p=0.012)	male	36	33	44	14	8	2	137
	female	135	136	87	24	14	2	398
Marital status (p=0.000)	unmarried	122	94	48	16	9	3	292
	married	49	75	83	22	13	1	243
Age (p=0.000)	younger than 20	5	8	4	1	0	0	18
	21-30	108	88	38	12	9	3	258
	31-40	36	42	46	11	5	0	140
	41-50	11	17	17	7	5	0	57
Education (p=0.025)	older than 50	11	14	26	7	3	1	62
	junior high school	14	16	12	2	1	0	45
	senior high school	43	49	48	12	8	2	162
	university	101	92	67	22	9	0	291
Residential area (p=0.000)	graduate school	13	12	4	2	4	2	37
	northern China	89	24	4	2	0	0	119
	central China	8	20	13	7	1	0	49
	eastern China	19	27	16	5	2	0	69
	southern china	19	31	18	5	4	2	79
	Hong Kong & Macao	17	34	36	9	10	1	107
	northeastern China	11	22	27	2	2	1	65
	southwestern China	4	5	12	4	1	0	26
	northwestern China	4	6	5	4	2	0	21
	service industry	50	62	51	14	10	1	188
Occupation (p=0.001)	manufacturing	31	27	33	12	6	1	110
	public servants	19	18	13	5	3	0	58
	students	48	34	10	3	1	2	98
	others	23	28	24	4	2	0	81
Income (p=0.000)	below 2,000	78	31	3	0	0	1	113
	2,001-5,000	55	63	29	8	2	0	157
	5,001-8,000	21	49	81	20	7	1	179
	8,001-11,000	14	11	14	7	5	1	52
	11,001-14,000	1	5	3	3	5	1	18
	more than 14,000	2	10	1	0	3	0	16
Total		171	169	131	38	22	4	535

1=lower than 20,001, 2= 20,001-40,000, 3= 40,001-60,000, 4= 60,001-80,000, 5= 80,001-100,000, 6=more than 100,000.

## CONCLUSION AND SUGGESTIONS

This study’s demand analysis shows the main reasons for medical cosmetic surgery in Taiwan are that consumers can communicate with doctors without any language barrier and the use of advanced medical technology. The channels that consumers most wanted are recommendations from friends, mass media, and websites. The surgery most mainland Chinese want is facial cosmetic surgery, and the most acceptable expense is below RMB\$40,000. We suggest that providers of medical cosmetology should

devote more efforts to improve their medical technology, lower the medical cost and strengthen their communication with medical tourists. Additionally, they can work with mass media or websites in order to provide promotions that primarily focus on facial cosmetic surgery and attract more foreign visitors when they are marketing their services in the future.

Chi-square analysis shows that all demographic variables lead to significant differences in the most wanted channel, most wanted surgery, and acceptable expense. Thus, we propose that providers of medical cosmetology should develop different marketing strategies for people with different attributes. For example, they could develop a low-cost strategy for people who are 21-30 years old, students, or low-income salary earners through recommendations from friends or by word of mouth. On the other hand, they can develop a higher cost strategy for people who are male, married and older than 30 years old mainly through mass media.

The primary limitation of this study is that it only focuses on the main reason, the most wanted channel, the most wanted surgery, and the acceptable expense for medical cosmetology, as well as the effects of demographic variables on these dimensions. We suggest that future research can further consider what causes this study's findings and why Taiwan is a medical tourism destination. Moreover, because there are many determinants of behavioral intention for medical cosmetology, future research can also look into motivations, expectations, risks, and quality and availability of care or service quality in a more comprehensive model.

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# COMMUNITY PERSPECTIVES ON ACCOUNTABILITY AND TRANSPARENCY IN THE MANAGEMENT OF LOCAL AUTHORITY TRANSFER FUND IN KENYA

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## ABSTRACT

*The Local Authorities Transfer Fund (LATF) is one of the funds that the Kenyan Government has decentralized to local authorities to supplement the financing of service delivery, enhance financial management and accountability, as well as reduce debts accumulated by the authorities. The purpose of this study was to assess and document community perspectives on accountability and transparency in the management of LATF resources. We sourced primary data from 162 community members, including opinion leaders and civil servants. The study found that participants were satisfied with community involvement in the planning and budgeting process (48.8%), enhancing accessibility of external auditor's reports (42.0%) and liability management (34.0%). However, they expressed dissatisfaction with indicators such as transparency in the procurement process (58.0%), management of Council assets (57.4%), publicization of expenditure reports (44.0%), cash flow management (42.0%), budget execution discipline (35.2%), accounting system (30.9%) as well as internal control and audit system (30.2%). The success of LATF largely depends on the Government's enforcement of existing regulations, identifying gaps and formulating additional controls, as well as taking public officers and political leaders through the change process. This will provide necessary safeguards against political interference and corruption in the management of LATF projects.*

**JEL:** 016

**KEYWORDS:** Accountability, Transparency, Local Authority, Service Delivery, Decentralization, Fiscal Decentralization

## INTRODUCTION

The Local Authorities Transfer Fund (LATF) was established through the Local Authorities Transfer Fund Act, No. 8 of 1998 (GoK, 1999), to achieve three objectives - improve service delivery, enhance financial management and accountability as well as reduce outstanding debts accumulated by local authorities (Kibua & Mwabu, 2008; Mboga, 2009). LATF is one of the public funds devolved to peripheral governance units, within the decentralization framework. As noted by Rondinelli (1999), decentralization entails the transfer of authority and responsibility for public functions from the central government to subordinate or quasi-independent public institutions as well as the private sector. Decentralization involves a combination of dimensions, including fiscal, administrative, political, and economic functions (Rondinelli, 1999; Cheema, 2007; Phillip, 2009). Public finance scholars have applied the concept in various fields, including public administration, economics, management science, law, and public finance, among others. Whatever the area of application, decentralization responds to limitations and challenges associated with centralized governance systems (Conyers, 2007).

Fiscal decentralization is one of the components of decentralized government functions, whose purpose is to improve efficiency in handling, management, expenditure, and accountability for public funds. As noted by Menon, Mutero, and Macharia (2008), fiscal decentralization involves the passing of budgetary authority from centralized governance systems to elected sub-national governments in the form of the power to make

decisions on matters revenue and expenditure. Fiscal decentralization has four key attributes, including assigning clear expenditure and revenue responsibilities; intergovernmental fiscal transfer mechanisms from central to local governments; as well as authorization for borrowing and revenue mobilization through loan guarantees from the central government (Phillip, 2009). According to Wachira (2010), governments pursue fiscal decentralization to facilitate the participation of citizens in identification of community priorities, planning and budgeting, implementation as well as monitoring and evaluation. According to Bonoff and Zimmerman (2010), fiscal decentralization stems from the premise that local communities have the ability to prioritize projects in line with their needs, and that, local resources are easily accessible where community members are involved in development processes. In view of this, fiscal decentralization strengthens citizens' role in ensuring accountability and transparency in the management of public funds.

Decentralization is not a new concept in Kenya. The Government first proposed decentralization in the Sessional Paper No. 10 of 1965 on *African Socialism and its Application to Planning in Kenya*, with a view to strengthening the fight against poverty, disease and illiteracy (Chitere & Ileri, 2008). The Sessional paper marks one of the key initial attempts to decentralize development agenda and resources to the districts and local government authorities across the country (Kibua & Mwabu, 2008; Chitere & Ileri, 2008). In 1983, the Government introduced the District Focus for Rural Development (DFRD) mechanism as its official decentralization policy (Alila & Omosa, 1996; Chitere & Ileri, 2008). Under the DFRD framework, districts became the planning units for decentralized service delivery. However, performance of the strategy was constrained by various factors including limited involvement of communities in project cycle management (Chitere & Ileri, 2008).

As noted by Kibua and Mwabu (2008), decentralized development initiatives brings forth numerous benefits including increased community participation in decision-making, better governance, improved equity in resource sharing, improve the quality of government service delivery, as well as enhanced accountability in fund administration. More recently, decentralization was revisited in the *Economic Recovery Strategy for Wealth and Employment Creation (ERSWEC) 2003-2007*, which stands out as the policy document providing a clear framework against which devolved funds are leveraged (Kibua & Mwabu, 2008; GoK, 2003). Fiscal decentralization framework is further set out in the *First Medium Term Plan (MTP) 2008-2012* (GoK, 2008), as well as *Kenya's Vision 2030* (GoK, 2010).

These policy efforts culminated to the establishment of various devolved funds, including LATF. The fund draws from the national revenues - 5% of the annual national income tax collection (Kibua & Mwabu, 2008; Mboga, 2009). The allocation criteria are designed to ensure consistency, fairness and transparency, as follows: a basic minimum lump sum of KES 1.5 million (6.6%) is shared equally among the country's 175 local authorities, while 60% of the fund is disbursed according to relative population sizes of local authorities. The Government allocates the remaining 35.4% subject to local authorities meeting set financial management and accountability criteria (Kibua & Mwabu, 2008; Mboga, 2009). The money disbursed through LATF supplements local authorities' revenues; it forms about one-quarter of local authority revenues (Kibua & Mwabu, 2008; Mboga, 2009).

In order to access LATF resources, local authorities are required to have action plans, known as Local Authority Service Delivery Plans (LASDAP), which are prepared through participatory processes, involving various stakeholder groups and community members. LASDAP specifies prioritized projects and activities for which the Government and local authority funds should finance. The participatory approach amplifies local communities' voice in project identification, planning, monitoring, evaluation, and accountability processes, as well as nurture ownership of LATF projects (Kibua & Mwabu, 2008; Menon et al., 2008; Bonoff & Zimmerman, 2010).

Furthermore, LASDAP anchors on key pillars focusing on poverty reduction line with the *Poverty Reduction Strategy Paper (PRSP)* and the *Economic Recovery Strategy (ERS)* whose priority areas include

health, education, and infrastructure and upgrading of informal settlements (Mboga, 2009). The concept behind the LASDAP is to match all expenditure by local authorities to the needs of a local authority area; thus, avoid spending scarce resources on areas that are not of high priority (Institute of Economic Affairs [IEA], 2005). Local authorities adopt completed plans as a resolution, before submission to the Ministry of Local Government (MoLG). It is however, the responsibility of stakeholders to hold councilors and chief officers accountable for LASDAP's implementation; hence, the primacy of their monitoring role (Kibua & Mwabu, 2008; Mboga, 2009).

The MoLG encourages accountability and transparency by disbursing 60% of LATF upon submission of necessary budgetary and technical proposals. The Ministry further emphasizes performance by distributing the remaining 40% of the funds based on LASDAP's performance metrics, such as revenue enhancement strategies (Bonoff & Zimmerman, 2010). In the event of delayed delivery of reports, local authorities are subject to penalties: 15% loss of allocated funds for late filing of returns of up to 30 days, 40% of allocations for lateness of between 31 and 60 days late, and complete loss of LATF for local authorities whose documents are more than 60 days late (GoK, 1999; Bonoff & Zimmerman, 2010).

Furthermore, accountability improves through legal provisions for transparency to citizens. In this regard, the central government requires local authorities to publicize funds received each year through national newspapers. Besides, local authorities are required to hold annual budget days in the month of June, which provide forums to discuss revenues and expenditures for previous financial years and planned budgets for subsequent financial years with citizens (GoK, 1999; Bonoff & Zimmerman, 2010). Accountability is the obligation of public officers and elected leaders to take responsibility for their actions and decisions (World Bank, 2005). On the same note, Jalal (1999) perceives accountability as a process of holding public office bearers responsible for their performance, actions, and consequences of their decisions. Accountability in the management of public resources is a right to citizens and an obligation to those bearing the responsibility of managing such resources (Jalal, 1999).

There exist conflicting opinions regarding the point at which public servants should account to stakeholders. According to Ackerman (2004), whereas some scholars perceive accountability as an *ex-post* phenomenon, others argue that accountability measures should apply before, during and at the end of office tenure. Whatever the timing, accountability remains the cornerstone for good governance and democracy (World Bank, 2005). Social accountability mechanisms are potentially the most powerful tools against public sector corruption; involving citizens in the project cycle is an important strategy for initiating a strong oversight authority for the management of public resources in decentralized public institutions, including local authorities (World Bank, 2005). Accountability is an important component of empowerment for poor community members, poverty reduction, and sustainable development. Shende and Bennett (2004) note that the level of poverty significantly associates with lack of accountability and responsiveness to citizens' needs. Without accountable governance, poor citizens are likely to suffer most due to constrained service delivery (UNDP, 1996).

Furthermore, transparency denotes free access to all information about decisions, expenditures, revenues, and other activities of public institutions. Premchand (2001) notes that transparency enables stakeholders, including citizens, community-based organizations, service providers, civil servants, political leaders and development partners, among others to access and appreciate information published data on public finances, annual accounts as well as investigative and other general reports prepared by independent agencies (Shende & Bennett, 2004). Transparency is achievable in institutions where reliable information on government's fiscal policy intentions and forecasts is accessible consistently at minimal or no effort (Premchand, 2001). According to Singh, Rahim & Ray (2006), transparency connects closely to accountability. Enhancing accessibility of institutional information to stakeholders is a sure way of making public officers accountable and answerable for their decisions. Similarly, UNDP (1996) notes that the level of accountability depends on how much relevant information about public expenditure is accessible the

general public, as well as how well members of the public can analyze the information and develop action-oriented conclusions. Access to such information enables citizens to evaluate the intentions of central or local governments, which in turn, reinforces discipline in handling and management of public resources (UNDP, 1996)

The International Monetary Fund (IMF) has set out four principles that define what transparency should entail in public institutions. In this regard, public institutions may improve transparency by ensuring: public availability of comprehensive information on financial stocks and flows; public availability of information on budget preparation and execution; financial data meeting accepted quality standards and subjected to independent audit scrutiny (IMF, 2001). The audit process often results into financial reports, which should be available to the public to improve transparency (Premchand, 2001).

Fiscal transparency is essential for sound economic governance. As noted by Shende and Bennett (2004), transparency should result in better-informed public debate about fiscal policy objectives; thus, strengthen the credibility of macroeconomic policies. For this matter, Singh, Rahim, and Ray (2006) asserts that developing the culture of transparency is key for efficient allocation of resources and effectiveness of public fiscal policies. According to Premchand (2001), transparency helps the general public and market participants to hold public officers accountable for their policy decisions, while Shende and Bennett (2004) point out that an important underlying objective of improved transparency is to reduce corruption. According to Hondeghe (1998), public institutions characterized by high degrees of transparency have exhibited greater degree of fiscal discipline and have achieved robust economic performance.

In Kenya, the demand for accountability and transparency in the management of public resources has been gaining momentum over the past two decades (Nyangena, Misati & Naburi, 2010). While the country's budgetary portfolio has been increasing every financial year, accountability for the resources allocated to decentralized public institutions has been a key challenge (Mwawashe, 2010). In the financial year 2012/13, various public institutions, including local authorities could not account for about KES 300 million, particularly due to inadequate enforcement of regulatory frameworks, as well as politically influenced corruption. A review of pertinent literature reveals that various studies, including Smoke (2000), IEA (2005), Kageri (2010) and Nyangena et al. (2010) have documented issues associated with financial management practices in Kenyan local authorities. However, none of the studies explicitly brought out information about community perspectives on the accountability and transparency in the management of LATF resources. This study adopted a social audit approach to assess community perspectives about various indicators of accountability and transparency in the management of LATF resources by Siaya Municipal Council. We have organized the remainder of the paper into four key sections, including literature review, data, and methodology, results, as well as concluding comments, which include limitations and further research.

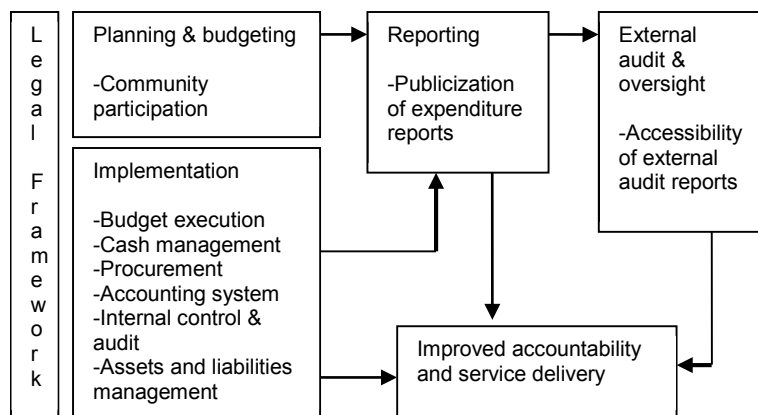
## LITERATURE REVIEW

A strong public financial management system is the key to achieving development objectives and an efficient service delivery system in public institutions, including local authorities (Singh et al. 2006). The public financial management and accountability framework, in Figure 1 indicates key linkages between legislative, budgeting, implementation, reporting, and oversight processes in public institutions. Decentralized public funds such as LATF are established and regulated through various statutes, whose goal is to enhance accountability, transparency, as well as service delivery. Although such statutes may provide a watertight framework for financial management and reporting, enforcement remains a key challenge in many developing countries, including Kenya. Community involvement in the planning and budgeting process is critical for fiscal accountability and transparency in public institutions. According to Wagle and Shah (2001), community involvement in the entire project management cycle provides an omnipresent oversight authority, which in turn, is likely to improve accountability and transparency.

Annual budgets are typically the legal authority for spending public funds; hence, involvement of community members in the budgetary process is paramount in enhancing accountability and control at various levels of operations (Shende & Bennett, 2004). Laws, regulations, and codes of conduct are insufficient on their own, unless public institutions translate them into action. Consequently, adherence to fiscal regulations is often a challenge to many local authorities (Wagle & Shah, 2001; Shende & Bennett, 2004). Changing social mindsets is important for laws, regulations and codes of conduct to facilitate the achievement of desired results (Hondeghem, 1998).

An effective public financial management system should have in place measures to encourage strict implementation of budgetary items, monitoring and intermittent reviews. More still, public institutions require accounting systems that are complete, accurate, and valid. Such systems should facilitate the preparation of truthful performance reports and provide statements of financial status. For this matter, a computerized accounting system may be more advantageous in enhancing accountability than a manual system (Shende & Bennett, 2004). As noted by Singh et al. (2006), in a manual accounting system, the multiplicity of registers and limited capacity of staff generally often results in accounts remaining in arrears for several years. Furthermore, Andrea, Lucas and Pasteur (2000) point out that sound accounting control systems can make the greatest contribution to the reliability of fiscal data, and are the starting point for ensuring the integrity of the recording and reporting processes.

Figure 1: Public Finance Management and Accountability Framework



*This Figure shows that analytical framework, which we have adapted and modified from Singh et al. (2006). The Figure indicates linkages between the legislative framework that establishing and regulating public funds in a decentralization context; planning and budgeting processes, which often result to action plans; implementation, reporting and external oversight processes in public institutions. The Figure further outlines indicators of accountability and transparency.*

The existence of strong cash flow management systems also improves accountability and transparency in public institutions. Whereas, excessive liquidity is likely to create opportunity for leakages and non-prioritized spending, cash constraints may cause discontinuation of projects and stifle service delivery. More still, procurement of goods, services and works is a key area that is vulnerable to abuse and loss of public funds. Strict adherence to procurement regulations is perhaps the most important indicator of accountability and transparency in public institutions (World Bank, 2005). Public institutions should have clear and effective policies, systems, and procedures for internal control and audit. Shende & Bennett (2004) indicates that internal control includes administrative procedures governing decision-making processes as well as accounting procedures for governing the reliability of financial records. Public institutions should have functioning internal audit departments and standing committees, whose functions should include scrutinizing fiscal accounts at each level and ensuring compliance with budgetary priorities. According to the International Organization of Supreme Audit Institutions (INTOSAI), the objectives of internal control systems are to promote orderly, economical, efficient, and effective operations as well as

safeguard resources against mismanagement, errors, or fraud. Internal control systems also encourage adherence to regulations, maintenance of reliable financial and management data, as well as timely disclosure of financial reports (Shende & Bennett, 2004). Effective internal control systems must be appropriate, consistent and cost-effective (Singh et al., 2006).

Public institutions should also have in place proper policies, procedures, and database of assets, which should inform decision-making in capital investments. The management of institutional assets and liabilities is an indication of the level of accountability. Furthermore, accountability and transparency anchor on fiscal reporting and dissemination to stakeholders, including taxpayers and voters (Singh et al., 2006). Accountable and transparent institutions should have regular and consistent fiscal reporting as part of institutional culture. Furthermore, such institutions should have in place clearly defined systems for timely and independent external audit, whose reports should be accessible to stakeholders and partners (Singh et al., 2006). Besides, involving community members in the project cycle is important for external oversight, which associates with high levels of accountability in public institutions (Andrea et al., 2000).

## DATA AND METHODOLOGY

We applied the cross-sectional survey design to guide the research process, including planning, training and pretesting, data sourcing, data processing and analysis, as well as reporting. The study targeted community members, opinion leaders and civil servants in Siaya Municipality. For a period of 10 days, we contacted 200 potential participants. However, only 162 (81.0%) met the inclusion criteria; and we issued them with self-administered questionnaires. We collected primary data in the month of June 2011 and the process involved identification and prequalification of potential participants, consenting, questionnaire issuance and follow-up. Whereas some participants completed the questionnaire on the spot, we gave others two days to provide their perspectives on various indicators of accountability and transparency in management of public funds. We applied purposive and snow-ball sampling procedures to select potential participants. In this regard we selected key opinion leaders and civil servants who demonstrated awareness about Local Authority Transfer Fund (LATF) and who had either participated in Local Authorities Service Delivery Plan (LASDAP) planning and budgeting processes or had ever engaged in formal business with Siaya Municipal Council, in their capacity as government officers or personal capacity as suppliers of goods, services or works.

As part of prequalification for participation, we engaged participants in informal interviews to gauge their knowledge about operations of the local authority. We used a self-administered questionnaire with structured and semi-structured questions to source the data. Furthermore, we employed quantitative and qualitative techniques to process and analyze the data. Quantitative analysis generated frequency distributions with percentages and cross-tabulations, we also transcribed, clustered into nodes and explored qualitative data for perspective patterns about the selected accountability and transparency indicators. Detailed description of the design and approaches that we used in this study are available in following publications, including Nachmias & Nachmias, 1996; Bryman & Cramer 1997; American Statistical Association, 1999; Owens, 2002; Rindfleisch, Malter, Ganesan & Moorman, 2008.

## RESULTS

We sourced the requisite information from 162 community members, including opinion leaders and civil servants. We present these results under two sub-sections, including information on participants' background profile in the first sub-section as well as community perspectives about the accountability and transparency indicators in the second sub-section. In this regard, Table 1 provides a summary of participants' socio-economic profile, where it may be noted that participants included 120 (74.1%) men and 42 (25.9%) women, suggesting that men were probably more aware and more involved in LATF activities than women. Besides, the participants reported ages ranging from 25 to 65 years, with majority,

56 (34.6%) being in the 40-49 years bracket and about one-third, 49 (30.2%) falling between 30 and 39 years. The results in Table 1 further show that most participants had attained at least secondary education. More specifically, 81 (50.0%) reported having college training, 56 (34.6%) had attained secondary education, while 22 (13.6%) were university graduates. Regarding occupation type, the results show that most participants, 72 (44.4%), were businessmen and women, while 21 (13.0%) were politicians, including serving and retired councillors.

Table 1: Socio-Economic Profile of Participants

Participants Attributes	Frequency	Percent
<i>Gender</i>		
Male	120	74.1
Female	42	25.9
<b>Total</b>	<b>162</b>	<b>100.0</b>
<i>Age</i>		
20-29 years	37	22.8
30-39 years	49	30.2
40-49 years	56	34.6
50 years+	20	12.3
<b>Total</b>	<b>162</b>	<b>100.0</b>
<i>Education level</i>		
Primary	3	1.9
Secondary	56	34.6
College	81	50.0
University	22	13.6
<b>Total</b>	<b>162</b>	<b>100.0</b>
<i>Occupation</i>		
Civil servants	12	7.4
Business	72	44.4
Faith leaders	7	4.3
Politicians	21	13.0
Teachers	12	7.4
Farmers	10	6.2
Lecturers	3	1.9
Healthworkers	8	4.9
Retired civil servants	6	3.7
Community health workers	7	4.3
NGO worker	4	2.5
<b>Total</b>	<b>162</b>	<b>100.0</b>
<i>Average monthly income</i>		
<KES 20,000	5	3.1
KES 20,000-39,000	34	21.0
KES 40,000-69,000	44	27.2
KES 70,000-99,000	33	20.4
KES 100,000+	46	28.4
<b>Total</b>	<b>162</b>	<b>100.0</b>

*Presented in this Table is the distribution of participants with regards to socio-economic attribute, such as gender, age, educational attainment, occupation and average income level. Participants included insiders such as Ministry of Local Government staff, Council staff as well as serving and retired councillors. The purpose is to show the caliber of the people whose perspectives about the financial management and accountability systems existing at the time of the study, we have documented in this paper.*

In addition, among the participants were 12 (7.4%) civil servants sampled from MoLG, Municipal Council, District Treasury, Ministry of Water and Irrigation, District Tender Committee and Ministry of Health. Participants also include 12 (7.4%) primary and secondary school deputy and head teachers, 10 (6.2%) farmers, 8 (4.9%) health facility staff, and 7 (4.3%) faith leaders, among others. Furthermore, participants reported average monthly incomes ranging from KES 18,000 to KES 166,000. More specifically, 46 (28.4%) participants stated average incomes of at least KES 100,000, 44 (27.25) were in the KES 40,000 to 69,000 income group, while 34 (21.0%) stated average incomes ranging between KES 20,000 and 39,000. These results suggest that the study included participants with good educational, income background, as well as general awareness about functions of the Council vis-à-vis the management of LATF resources. The next sub-section presents results related to community perspectives on the accountability and transparency systems for managing LATF resources at the Council. Involvement of community

members in the planning and budgeting processes is important for ensuring that LATF projects match with pressing community needs; thus, set good footing for community ownership of such projects. In view of this, we requested participants to indicate their perspectives on community involvement in planning and budgeting processes. Table 2 indicates that 76 (46.9%) participants rated community involvement as 'good', while 65 (4.1%) described the same as 'fair'. Cumulatively, about one-half (48.8%) of the participants expressed affirmative perspectives about community involvement in the stated processes.

Participants indicated that involvement of community members in LATF planning and budgeting processes was necessitated by guidelines provided by the MoLG, which require communities to be involved in the formulation of Local Authority Service Delivery Plans (LASDAP). Arguably, involving community members in the planning and budgeting processes is crucial for the understanding of LATF project priorities right from the start, which in turn, will provide a basis for holding public officers accountable at the end of implementation periods. Nonetheless, the Council should improve community involvement in terms of wider scope of representation of community-based groups and organizations, irrespective of their political inclination, as well as increase women's representation in the process.

Table 2: Community Involvement, Budget Execution and Cash Flow Management

Community Perspectives	Frequency	Percent
<i>Community involvement in planning &amp; budgeting</i>		
Very good	3	1.9
Good	76	46.9
Fair	65	40.1
Poor	12	7.4
Very poor	6	3.7
<b>Total</b>	<b>162</b>	<b>100</b>
<i>Budget execution discipline</i>		
Very good	1	0.6
Good	22	13.6
Fair	82	50.6
Poor	32	19.8
Very poor	25	15.4
<b>Total</b>	<b>162</b>	<b>100</b>
<i>Cash flow management</i>		
Very good	1	0.6
Good	29	17.9
Fair	64	39.5
Poor	56	34.6
Very poor	12	7.4
<b>Total</b>	<b>162</b>	<b>100</b>

*This Table presents participants perspectives on various indicators of accountability in public institutions, including community involvement in planning and budgeting processes, budget execution discipline and cash flow management. Cumulatively, about one-half (48.8%) of the participants expressed affirmative perspectives about community involvement in the stated processes; however, up to 35.2% expressed dissatisfaction with budget execution discipline, while 42.0% of the participants expressed negative perspectives about cash flow management.*

The LASDAP preparation process specifies priority projects, which local authorities should target with LATF resources. The main purpose of LASDAP implementation is to match expenditures with community priority needs. Thus, budget implementation process should focus on LASDAP priorities, to avoid potential deviations to activities outside the budgetary scope. Based on this, we requested participants to indicate their perspectives on budget execution discipline. In this regard, Table 2 shows that 22 (13.6%) participants rated budget execution discipline as 'good', while 32 (19.8%) and 25 (15.4%) rated the indicator as 'poor', and 'very poor', respectively. Cumulatively, 35.2% expressed dissatisfaction with the indicator; thus, suggesting need for the Council to improve budget adherence to effectively deliver services that are responsive to community priority needs.

Cash flow management is important for balancing incoming and outgoing cash. Whereas over liquidity bears the risk of cash leakage for unintended purposes and loss or earnings for the Council, under-liquidity



may stifle service delivery or lead to discontinuation of LATF projects. The results in Table 2 show that 29 (17.9%) participants were of the view that cash flow management at the Council was ‘good’; however, 56 (34.6%) rated the indicator as ‘poor’ and 12 (7.4%) said cash flow management was ‘very poor’. Cumulatively, 42.0% of the participants expressed negative perspectives about cash flow management, which indicates the need for appropriate action to minimize the risks associated with over and under-liquidity. The procurement is probably the heart of accountability and transparency in the management of LATF resources. Without optimal adherence to the existing regulations, procurement is highly at risk of abuse by public officers and elected leaders. It provides the avenue through which public institutions, including local authorities, can lose LATF resources that should improve service delivery. The results in Table 3 indicate that 26 (16.0%) participants rated transparency of the procurement system as ‘good’; however, 35 (21.6%) and 59 (36.4%) were of the view that the process was ‘poor’ or ‘very poor’, respectively. Overall, 58.0% of the participants reported dissatisfaction with transparency in the procurement process.

Table 3: Perspectives on Procurement Process, Accounting System and Internal Control System

Community Perspectives	Frequency	Percent
<i>Transparency of the procurement process</i>		
Very good	3	1.9
Good	26	16.0
Fair	39	24.1
Poor	35	21.6
Very poor	59	36.4
<b>Total</b>	<b>162</b>	<b>100</b>
<i>Accounting system efficiency</i>		
Very good	8	4.9
Good	37	22.8
Fair	67	41.4
Poor	36	22.2
Very poor	14	8.6
<b>Total</b>	<b>162</b>	<b>100</b>
<i>Internal control and audit system</i>		
Very good	4	2.5
Good	32	19.8
Fair	77	47.5
Poor	38	23.5
Very poor	11	6.8
<b>Total</b>	<b>162</b>	<b>100</b>

*This Table presents participants’ perspectives on three indicators of accountability and transparency in public institutions, including transparency of the procurement process, efficiency of the accounting system, as well as internal control and audit system. Overall, 58.0% of the participants reported dissatisfaction with transparency in the procurement process; about one-third (30.9%) expressed dissatisfaction with the accounting system, while the majority, 67 (41.4%) believed that the accounting system was ‘fairly’ efficient.*

The efficiency of accounting systems is a key pillar for enhancing accountability in the management of public resources. An efficient accounting system ensures ready availability of complete, valid, and accurate financial information to facilitate decision-making as well as inform stakeholders. In this regard, a computerized accounting system may be more advantageous in enhancing accountability than a manual system. The results presented in Table 3 show that 37 (22.8%) participants rated the efficiency of the accounting system as ‘good’, while 36 (22.2%) stated that the system was ‘poor’ and 14 (8.6%) hinted that the system was ‘very poor’. Cumulatively, about one-third (30.9%) expressed dissatisfaction with the accounting system. Nonetheless, the study found revealed that the Council was in the process of computerizing its accounting system, albeit with numerous obstacles, including under-funding, high turnover of technical staff, leading to discontinuation.

Clear policies, systems, and procedures for internal control and audit are essential for enhancing accountability and transparency in the management of public resources. Effective internal control mechanisms should reveal issues such as over-expenditure or unnecessary expenditure, among others, to

enable public officers to seek appropriate corrective measures in time. Besides, such a system should have appropriate safeguards against political influence, which may manipulate the system to cover-up expenditure irregularities. The results presented in Table 3 show that 32 (19.8%) participants rated the effectiveness of internal control and audit systems as 'good', 38 (23.5%) felt the system was 'poor', while 11 (6.8%) said it was 'very poor'. Overall, 30.2% of the participants suggested that the system was not effective. Issues surrounding the internal control and audit system included political influence and lack of independence, which often led to manipulation of financial reports to serve the interests of chief accounting officers and their accomplices.

The management of institutional assets and liabilities is an indication of the level of accountability in public institutions. Besides, proper management of institutional assets is an important indication of good stewardship on the part of chief accounting officers. In this study, we requested participants to indicate their perspectives about management of the Council's assets, including buildings, automobiles, furniture, and equipment, among others. The results in Table 4 show that only 10 (6.2%) participants rated the management of Council's assets as 'good', 47 (29.0%) and 46 (28.4%) indicated 'poor' and 'very poor' respectively. Overall, up to 57.4% of the participants, expressed outright dissatisfaction with the way public officers were managing Council assets; thus, suggesting the need for appropriate measures to enhance accountability.

Furthermore, liability portfolio is a key indicator of accountability in public institutions. Accountable management systems often have in place guidelines to ensure that the level of liability does not cripple institutional operations as well as service delivery. In this study, Table 4 shows that 52 (32.1%) participants expressed satisfaction with liability management at the Council by rating it as 'good'; contrastingly, 24 (14.8%) rated the indicator as 'poor', while 9 (5.6%) said it was 'very poor'. Cumulatively, up to 34.0% of the participants hinted satisfaction with liability management at the Council. Nonetheless, the results suggest that the Council was making effort to control its liabilities, by servicing its debts. However, participants pointed out that improvement in liability management was due to the requirement that all local authorities in the country should address their outstanding debts by the year 2010, as a pre-condition for continued access to LATF resources.

Furthermore, the MoLG requires local authorities to publish information about funds that they receive from the central government each year in national newspapers, while at the community level, the authorities should publicize expenditure, and external audit reports by holding annual budget days in the month of June. The authorities should also post such information on public notice boards and websites to enhance transparency. In view of these requirements, we requested participants to indicate their perspectives on the publicization of expenditure reports at the Council. The results presented in Table 4 indicate that 22 (13.6%) were of the view that publicization of such reports was 'good'. Contrastingly, 50 (31.0%) and 21 (13.6%) hinted that the indicator was 'poor' and 'very poor', respectively. Cumulatively up to 44.0% of the participants were unhappy with the publicization of expenditure reports.

Regarding the accessibility of external audit reports, the results in Table 4 show that 68 (42.0%) participants expressed satisfaction by rating the indicator as 'good'. However, up to 17 (10.5%) participants rated the same as 'poor', while 10 (6.2%) were of the view that accessibility of such reports was 'very poor'. Overall, only 16.7% of the participants expressed their reservations about accessibility of such reports. Nonetheless, the results suggest that accessibility of external auditor's reports was a significant achievement by the Council in efforts to enhance transparency in managing LATF resources. However, some participants noted that this is an area where the MoLG put emphasis to make local authorities more accountable to communities, which they serve.

Table 4: Perspectives on Management of Council’s Assets, Liabilities, and Financial Reports

Community perspectives	Frequency	Percent
<i>Management of Council's assets</i>		
Very good	6	3.7
Good	10	6.2
Fair	53	32.7
Poor	47	29.0
Very poor	46	28.4
<b>Total</b>	<b>162</b>	<b>100</b>
<i>Management of Council's liabilities</i>		
Very good	3	1.9
Good	52	32.1
Fair	74	45.7
Poor	24	14.8
Very poor	9	5.6
<b>Total</b>	<b>162</b>	<b>100</b>
<i>Publicization of expenditure reports</i>		
Very good	6	3.7
Good	22	13.6
Fair	79	48.8
Poor	34	21.0
Very poor	21	13.0
<b>Total</b>	<b>162</b>	<b>100</b>
<i>Accessibility of auditor's reports</i>		
Very good	13	8.0
Good	68	42.0
Fair	54	33.3
Poor	17	10.5
Very poor	10	6.2
<b>Total</b>	<b>162</b>	<b>100</b>

*This Table presents community perspectives on additional indicators of accountability, including management of Council assets and liabilities, publicization of periodical expenditure reports and accessibility of external auditor’s reports. The results show that overall, up to 57.4% of the participants expressed outright dissatisfaction with the way public officers were managing Council assets; about 34.0% were satisfied with liability management at the Council, while up to 44.0% were unhappy with the publicization of expenditure reports.*

## CONCLUDING COMMENTS

The purpose of this study was to assess and document information on community perspectives on accountability and transparency in the management of LATF resources. The study found that participants were satisfied with indicators such as community involvement in the planning and budgeting process (48.8%), enhancing accessibility of external auditor’s reports (42.0%) and liability management (34.0%). However, higher levels of dissatisfaction emerged with regards to indicators such as transparency in the procurement process (58.0%), management of Council assets (57.4%), publicization of expenditure reports (44.0%), cash flow management (42.0%), budget execution discipline (35.2%), accounting system (30.9%) as well as internal control and audit system (30.2%).

Community perspectives provide indications about key areas on which the Government and the local authority should focus to strengthen accountability and transparency in the management of LATF resources. Although the pursuit of decentralized development in Kenya started soon after independence in 1963 (Chitere & Ireri, 2008), these results suggest that the country has not fully reaped the benefits of the paradigm. LATF is one of the special funds that the Government has devolved to the peripheral local authorities, whose purpose is to enhance financial management and accountability, among other objectives (Kibua & Mwabu, 2008; Mboga, 2009). However, its success largely depends on the Government’s enforcement of existing regulations, identifying gaps and formulating additional controls, as well as taking public officers and political leaders through a change process.

As noted by Hondelghem (1998), behavior change in public service is not just about enforcement of laws, regulations, and codes of conduct. It requires a change in the mindset, a process that one may not realize

overnight. This will provide necessary safeguards against issues such as political interference and corruption in the management of LATF projects. Furthermore, the results suggest that participants were satisfied with indicators in which the Government had earmarked as pre-conditions for continued funding. This implies that enforcement of existing regulations is an approach that the Government should seriously to help nurture the culture of fiscal accountability and transparency, which are the cornerstones of successful decentralized funds.

This study adopted a social audit approach to assess community perspectives about various indicators of accountability and transparency in the management of LATF resources by Siaya Municipal Council. The challenge arising from this approach is that perspectives are vulnerable to distortion by political affinity, as well as socio-economic circumstances; thus, leading to inaccurate and biased findings. Although we contacted 200 community members during data collection, up to 38 (19.0%) indicated lack of awareness about LATF; leading to their exclusion from the study, but which, may have implications on the representativeness of the findings. Even though Kenya has 175 local authorities, this study purposively focused in Siaya Municipal Council. Hence, the findings reported in this paper should be treated with caution, because it may not provide an accurate national picture regarding community perspectives on accountability and transparency in the management of LATF. In view of this, there is for future research activities to scale-up the study to cover at least one-third of the Kenyan local authorities.

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# AN EXPLORATION OF THE EFFECTIVENESS OF FIJI'S PUBLIC SERVICE CODE OF CONDUCT

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## ABSTRACT

*In the Pacific region, public service codes of conduct establish standards by which behavior is often judged proper, or otherwise, for public service officials. However, current research indicates there is very little evidence within Pacific Island Countries (PICs) to demonstrate whether approved Public Service Commission (PSC) codes of conduct are really ensuring that public service officials are able to maintain even minimal standards of professional and personal conduct. One of the promises of the early 1990's civil service reform in Fiji was to build a highly ethical and professional civil service. A Code of Conduct for all public service officials in Fiji came into effect under the Public Service Act of 1999. This study aims to explore and describe the perceived effectiveness of code of conduct in Fiji's public service. There are in fact external controls in place to keep public officials in line; however, there seems to be limited awareness and weak monitoring of the code in individual ministries and line departments to ensure it is strictly and constantly upheld. Special measure to support understanding, awareness and adherence to code of conduct also seems to be missing.*

**JEL:** H830

**KEYWORDS:** Public Service, Ethics, Code of Conduct

## INTRODUCTION

Contemporary social psychological research indicates that proper codes of conduct can often guide behaviors in developing countries that are essential to a functioning civil service (White, 1999 cited in Gilman, 2005). In fact, such codes are often the first formal structure that is established and recognized when attempt is made to elevate the profile of an organization (Larmour, 2001). Within the Pacific region, public service codes of conduct establish standards by which behavior is often judged proper or otherwise. In this line, it is anticipated that an effective code of conduct will promote good governance, transparency, accountability and integrity among public officials of the Pacific Island Countries (PICs) whilst improving the reputation of the public service among the community and current and potential international partners, on who support for public officials depend. Of course, ethical codes of conduct alone are not panaceas for resolving ethical problems in organizations - but once established, such codes can help the civil service focus, and maintain high levels of professionalism and personal conduct, provided other key elements are present to support this.

Previous studies on codes of ethics or codes of conduct, (Cressy & Moore, 1983; Mathews, 1987; Weaver et al., 1999) have targeted private sectors in more developed economies like the United States of America (USA) or the United Kingdom. Only more recent studies (Svensson & Wood, 2004; Svensson & Wood, 2009) have targeted code of ethics studies in the public sector organizations of Sweden. While the above studies were mostly carried out in more developed economies, no study to this date has been carried out on the codes of conduct for public sector organizations in Fiji. Fiji's civil service has been subjected to public criticism and humiliation for unethical acts in the past and in recent years. The Commodity Development Framework scandal in the late 1990s; the Agriculture scam in 2001; and the Water and Sewerage Department mishap in 2003 are some of the many incidents that reflect unscrupulous practices in the country's public service. In aggravating the situation, most of those senior officials at the center of these scams were spared while their junior colleagues were taken to task. It is evident that such an environment

is conducive to encouraging unethical conduct in the country's civil service. In light of the recurring dishonest practices in the country's civil service in the past, the numerous declarations by successive governments including the present regime to build an ethical and professional civil service; what then are the changes that have been made in recent years to combat corrupt and unethical behavior in the civil service; and how effective are such measures? This is the query that is central to this investigation. It is beyond contention that unethical conduct is a concern in Fiji's civil service and if the words of successive governments and the current regime were to take seriously, one would assume that this area should be one of the priorities.

Presumably, the 2006 political takeover in Fiji was partially driven by a commitment to eliminating corruption in the government. Over time, various State Service Decrees have been issued and external controls to keep public officials in line have been established. The Public Service Commission (PSC) of Fiji under the State Services Decree of 2009, No.6, being the central agency, is in fact, not only responsible for the overall management and development of human resources, but also responsible for the continuous improvement of its public services. In accordance with this Decree, one of its statutory functions is to promote and uphold the Public Service values and the Public Service code of conduct, whilst monitoring and evaluating of the same (Public Service Commission, 2012). It also has the mandate to take disciplinary action(s) against public office holders found to be violating the code of conduct under provisions of the Public Service Act of 1999.

The main objective of this investigation is to explore and describe the perceived effectiveness of the Fiji's public service code of conduct. It is hoped that the findings will provide the various Ministries and enforcing authorities with the necessary information to be able to strengthen and improve their internal control mechanisms to better enforce and promote the ethical values enshrined into their codes of conduct. The rest of the article discusses some more literature in this field, describes the methodology, discusses the empirical findings and presents some concluding thoughts.

## LITERATURE REVIEW

The question of ethics has its links with the history of humankind. Ethics deals with character, conduct, as well as morals of human beings. It deals with both good or bad and right or wrong behavior. Ethics is both a process of inquiry as well a code of conduct that requires people to evaluate right and wrong. Since it has to do with actions of a man, it similarity requires the public officials in relation to both colleagues and the public, to make adjustments in their actions and attitudes. In the daily execution of their duties and management of public funds, public officials dispose discretionary competencies. This should protect both the citizens and the public authority against misuse of the position by the public officials (Raga & Taylor, 2005).

In the recent years, formal codes of conduct or code of ethics have become the centerpiece of discussion as one of the tools to building and maintaining ethical competence in the public sector. While there is a lack of consensus on its effectiveness, codes that make provisions for both aspirational goals and operational guidelines have proved to be more effective especially when supported by enforcement mechanisms (Meine & Dunn, 2013). Public sector organizations around the world have largely evolved from just basically being service organizations and have had to embrace an ethos that takes greater appreciation of the implementation, communication and benefits of their codes of ethics than may have been the case in the past (Svensson & Wood, 2009). According to Webb (2010), the chaotic implementation of management reforms within the public services of various countries could also lead to weaknesses in the management of ethics within the public service. Hence organizational and other societal factors like consequences of unethical behaviors, negative political ramifications and unfavorable perceptions about organizational performances, is no doubt pushing organizations today towards more devoted and increased attention to ethical issues. Beerli, et al. (2013) have identified unethical behavior as one of the most dangerous ills of

modern governance that can potentially damage public trust in government and undermine the foundations of democracy in developed as well as developing economies. The need to improve ethical standards of public officials has become a major public agenda throughout these economies. A major expectation arising from this is that the public sector organizations should better equip and adopt their codes of conduct as the private sector. A code of conduct, should therefore, be one of the first considerations for the public sector organizations. If organizations do not live up to its code of ethics (if such a code exists), or encourage employees to seek further guidance or training during ethical deliberations, employees might feel that the organizations put ethics on the “back burner” (Pelletier & Bligh, 2006). While the interest in research on codes of ethics is old as the 1980s, the focus mainly has been on private sector organizations of more developed countries like USA (e.g. Cressey and Moore, 1983; Mathews, 1987; Weaver et al., 1999; Berenbeim, 2000; Chonko et al., 2003). Other studies in the UK (e.g. Langlois & Schlegelmilch, 1990, Le Jeune & Webley, 1998), and Canada (e.g.

LeFebvre and Singh, Schwartz, 2002; Singh, 2006,) were also similar. A few years old studies were also carried out in Sweden (e.g. Svensson et al., 2006), and in Australia (e.g. Wood, 2000; Wood & Callaghan, 2003). While these studies were mostly targeted at private sector organizations, only more recent studies (Svensson & Wood, 2004; Svensson & Wood, 2009) have targeted code of ethics studies in the public sector organizations of Sweden. Wood (2000) and Nijhof et al. (2003) suggest that a written code of conduct alone will not guarantee an ethically responsible organization unless the values stipulated within the code are embedded in the organization. This way, one can expect both responsible individuals as well as responsible organizations. Vitell and Hidalgo (2006) also highlight the important role that organizational culture plays in supporting codes and ethical decision-making. Most often, the pressure to conform to the ethical expectations of the organization is a potential outcome of a certain degree of organizational culture at all levels of the organization, for an overall commitment towards ethical behavior. Therefore, codes of conduct or codes of ethics play a pivotal role in enhancing ethical performance of organizations (Wood, 2000).

However, when it comes to the perceived benefits of public sector codes of ethics, there appears to be very little agreement on whether the code is often used by public officials to resolve ethical dilemmas or problems. Svensson and Wood (2009), however, argue that the code of ethics still positively influences the operations of public sector organizations. Codes of conduct or codes of ethics clearly signal that the organization is aware of the need for ethical behavior and requires a commitment to such behavior from its workforce (O’Dwyer & Madden, 2006 cited in Dominques et al. 2009). Taking into account that no such study to this date has been carried out in a developing country like Fiji, this study aims to explore and describe the perceived effectiveness of the Fiji’s public service code of conduct. Given that Fiji’s public service code of conduct has been formally in existence since 1999 and was deduced from the 1999 constitution, the research is also timely as Fiji embraces a new 2013 constitution. It is believed that the study will not only add valuable knowledge to the literature on codes of ethics, but also provide wider perspectives to various ministries in Fiji on the effectiveness of its public service code of conduct.

## DATA AND METHODOLOGY

An essential part of this task included carrying out interpersonal interviews with the senior officials of the Fiji Public Service Commission (PSC) and various other ministries that are bound by the Fiji public service code of conduct. Meeting appointments were made over emails and phone, and the researchers themselves were available to carry out the interviews at the scheduled times. Face to face interviews were mostly carried out with the deputy secretaries of the various ministries overseeing the affairs of the corporate and administration divisions. Where deputy secretaries were unavailable for the interviews, officials mainly responsible for the human resources and disciplinary sections were interviewed. Our target group was mostly deputy secretaries, as they are entrusted with the power by the Public Service Commission (PSC) of Fiji, to oversee the awareness, monitoring, consultation and enforcement of the public service code of

conduct within their individual ministries. Each of the interviewees was briefly introduced to the research study to stimulate their interest and willingness to be interviewed. The interview questions were mostly semi-structured in nature, with both open and closed ended questions. Where there were closed-ended questions, respondents were requested to provide further explanations. For example, if an answer is restricted to “Yes / No / Don’t Know” then further “Why” or “Please Explain” questions followed. Some of the areas of questioning were Year of establishment. What are the mechanisms used to enforce the code? Who is responsible for its enforcement? What oversight mechanisms are there to ensure this enforcement process within their ministry? How often is the code of conduct reviewed or re-adopted? What are the possible consequences of non-compliance or breach of the code by public officials? How is information on the requirements on the code of conduct disseminated? Whether they felt the code of conduct is effective and how? Identify some strength(s) and/or weakness (s) of the current code? Any aspect of the code that they felt needed changing? At the time of this research study, there were eighteen (18) amalgamated government ministries in Fiji. This was our initial sample size for the interviews which later were reduced to twelve (12) because six (6) other ministries were unavailable for interviews despite repeated calls and emails.

**RESULTS AND DISCUSSION**

Macdonald (2009) identified seven most common motivations for the adoption of codes which are (1) ensuring to legal compliance, (2) guide for formalized behavior and expectations, (3) protection and enhancement of organizational reputations, (4) ensuring employee compliance and minimization of risks, (5) ensuring consistency across global networks, (6) creation and maintenance of trust with various other stakeholders and (7) for communication of organizational principles and commitments to the organization’s other stakeholders. While this was primarily focused on codes for the private sector companies, these motivations could also be most often common for adoption of codes within the public sector. The Fiji Public Service code of conduct came into effect almost thirteen (13) years back under the provisions of the Public Service Act 1999. A key question in the surveys was to distinguish between ministries that knew when their code of conduct was established or adopted from the ones that did not know, as is presented in Table 1. The results in Table 1 show the percentage of responses that the researchers got when asked about the year of establishment of their code.

The results in Table 1 above show that out of the twelve (12) ministries interviewed, 25% of the ministries did not seem to know since when their ministry was required to adapt to a code of conduct, while 42% of the respondents revealed that the code of conduct was adopted under the Public Service Act (1999). Interestingly, 17% stated that code of conducted was in existence since 1990, but only got its legal basis in 1999, while another 16% of respondents revealed that the code existed within their ministries even prior to 1990. According to one respondent, prior to 1999, the codes of conduct existed in the Fiji public sector but more through conventional methods. The interview with the senior officials in the public service revealed that the code of conduct was adopted to ensure compliance to the Public Service Act of 1999, which provided the code of conduct with a legal basis. It is somewhat worrying to know that 25% of respondents did not know about when the code came into existence - how then would decisions about timely revisions and re-adoptions of code can be made? The main reason why code of conduct was developed in Fiji’s public sector was to ensure legal compliance under the Public Service Act of 1999.

Table 1: Year of Establishment and Percentage of Respondents

Prior 1990	16%
1990	17%
1999	42%
Don't know	25%

*The table above shows the percentage of respondents relative to the year of establishment stated by the individual ministries.*

Table 2 shows the different mechanisms employed by ministries to effectively enforce and implement the code of conduct within their individual ministries. 67% of the ministries utilize disciplinary committees, while 25% of the ministries hold consultations with the staff, and another 8% do not seem to be doing anything about it. The methods that organizations institute to enforce their codes tend to reveal their level of commitment to the process. If they adapt to existing processes, then it is indicative of their level of commitment and if new processes are created, then there is visibility of higher level of commitment towards implementation or enforcement of the code. Wood and Rimmer (2003) related existing processes to things like discipline, communication of the code to employees, induction, staff appraisal and strategic planning. A higher level of commitment, on the other hand, is associated with new initiatives like ethics committees, ethics education committees and ethics education. This seems to be lacking in the case of Fiji’s public service as existence of ethics education committees and/or ethics committees is not present.

Table 2: Mechanisms Used for Effective Enforcement/Implementation of the Code

Disciplinary committees	67%
Consultations	25%
Nothing	8%

*This table shows the percentage of ministries who responded to various forms & mechanisms they use to enforce & implement the code of conduct.*

Table 3 shows the various channels through which ministries disseminate information to their staff about the requirements of the code of conduct. It is to be noted that the total sum of the percentage of responses is more than hundred percent because some respondents gave multiple responses like ‘website’ and ‘handbook’. Respondents were asked to state the channels through which they disseminated information to their ministry staff on the requirements of the code of conduct. 50% of the ministries revealed that they do it by “uploading the code of conduct on the ministry website” or “advise staff” to visit the Public Service Commission (PSC) website for information about the requirements of the code. One of the respondents further stated that it is assumed that as public office holders, public service officials will constantly visit the code periodically. 42% of the respondents stated that a major way of dissemination of this information was by way of “issuing a copy of the booklet”. The other 17% revealed that staffs are trained on the code of conduct during the induction program when they first join the office. For example, one of the ministries revealed that when new recruits are inducted, the code of conduct booklet is issued to them then. Some other 17% of the ministries said that the code’s requirements are constantly discussed during periodic meetings and consultations with the staff and via official Public Service Commission (PSC) circulars. The concern here is that by just handing out a booklet or posting the code electronically might mean a minimal follow up later.

Table 3: Information Dissemination about the Code

Ministry or PSC Website	50%
Handbook	42%
Induction	17%
Periodic trainings/consultations/official circulars	17%

*This table shows the various channels through which ministries disseminate information to their staff about the requirements of the code of conduct. It is to be noted that the total sum of the percentage of responses is more than hundred percent because some respondents gave multiple responses like website and handbook.*

According to Svensson and Wood (2009), booklets and electronic communication also have a tendency to be ignored, filed, or even discarded. This practice in itself can lead to employees not fully appreciating the significance of the handed ethics document to them. Furthermore, the impact that these ministries would want the code to make on the employee may be lost if the required attention is not given to it at the time of induction. Wood (2002) also highlighted that during induction time; an employee turns to be barraged with many new ideas and other organizational protocols and is often overwhelmed with other information that they turn to lose sight of the importance of the code itself. Notably, while the role of the Fiji Public Service

Commission (PSC) is to provide guidance and interpretation of the code to other ministries, the onus lies solely on the permanent secretaries and other line departments in each of the ministries to ensure proper communication and enforcement of the code. Table 4 shows the percentage of ratings given by the participating ministries in terms of the effectiveness of the code. When the respondents were asked to rate their current code of conduct in terms of its effectiveness in ensuring ethical performance by employees, the above results originated. 25% of the respondents rated it as ‘excellent’ while the other 50% and 25% of the respondents gave a rating of “average” and “poor” respectively. Respondents were further asked to explain why they had selected the respective scales from the three that were given and the results of this are reported in Table 5 as below

Table 4: Ratings on the Effectiveness of the Code

Excellent	25%
Average	50%
Poor	25%

*This table shows the percentage of ratings in terms of the effectiveness of the code, given by the participating ministries.*

Table 5: Reasons for Effectiveness or Ineffectiveness of the Code

Clear disciplinary procedures	75%
Employees didn't understand and/or confused	9%
Enforcement strategies/awareness	16%

*This table displays the various reasons why the respondents either thought the code was either effective, or not so effective or poor.*

Table 5 displays the various reasons why the respondents either thought the code was “effective”, “average” or “poor”. 75% of the participating respondents felt that the code was “effective” in terms of providing clear disciplinary procedures. On the other hand, 16% of the respondents felt that enforcement and/or awareness strategies needed improvement, while the remaining 9% raised concerns about employee confusions surrounding the code of conduct, that is either they did not understand the code or were still confused about some aspects. During the face-to-face interviews, the respondents in this 9% category further highlighted that since the public service officials are often required to adhere to several other service regulations and new regulations as per official Public Service Commission (PSC) circulars, there seems to be some level of confusion among certain staff in relation to the requirements and/or importance of the code. This may somewhat signal that the mechanisms through which the code or its information is disseminated to officials is either ineffective or needs improvement, as was highlighted in Table 3. It can also be somewhat speculated that perhaps the code is largely being used as a punishing tool to punish unethical behavior rather than promoting ethical behavior, as a large percentage of respondents (75%) highlighted that it provides “clear disciplinary procedures”. Table 6 highlights some of the common consequences that the staff may face in each of the ministries for breaching the code of conduct.

Table 6: Consequences for Breaching the Code

Suspension	40%
Termination	15%
Prosecution	25%
Counseling	12%
Caution letters	8%

*The table highlights some of the common consequences faced by staff in each of the ministries for breaching the code of conduct. The sum of total percentage is more than hundred percent because some ministries identified multiple consequences for a breach.*

The most common consequence for breaching the code is “suspension” being at 40%. 15% of the ministries highlighted “termination” as the most common outcome of a breach of code within their ministries, while 25% of the respondents also talked about “prosecution” as one of the consequences. Some 12% and 8% of

the ministries highlighted most common consequence or disciplinary action is “counseling” and “caution letters” respectively.

Several studies, Sims (1991), Fraedrich (1992), and Stoner (1989) suggests that within a code, enforcement provisions for those that do not uphold the code should be outlined. The organization, by having these types of procedures will signal to the employees the significance of the need to abide by the code for both themselves and the organization. In Fiji’s case, there are obviously legislations in place to ensure ethical behavior in the public service. The Public Service Act 1999, in particular, outlines the public service values and code of conduct and any breach of the code of conduct calls for a disciplinary action against the employees. Charges are then laid against the alleged staff and are reported to the Ethics Division of the Public Service Commission (PSC), which records this and initiates the disciplinary processes via the Public Service Disciplinary Tribunal.

The Disciplinary Tribunal has powers to hear the cases and prosecute the same, whereby penalties are laid down as per section (22) of the Public Service Act of 1999. Table 7 highlights some of the common strengths of the current code of conduct that were identified by the interviewed ministries. During the interview process, the ministry officials that were interviewed were asked to identify some of the strengths of their current public service code of conduct. As above, 50% of the ministry officials identified the “presence of clear rules and disciplinary procedures” within the code, while 33% of identified the *easy to enforce* feature. 17% of the respondents mentioned that because of clear procedures, it is easy to detect poor or unethical performances among staff. From the above results, one can see that many ministries appear to be using their code of conduct in only disciplining staff. As it is, the code currently adopts a reactive rather than a pro-active approach. Whilst most employees are punished for breaching the code, no employee is rewarded for adherence to the code or reporting others on the breaches.

Table 7: Identification of Strengths of the Code of Conduct

Clear rules & disciplinary procedures	50%
Detection of poor or unethical performance	17%
Easy for enforcement	33%

*The table highlights some of the common strengths of the current code of conduct that were identified by the interviewed ministries.*

Table 8 highlights some of the weaknesses of the current code of conduct or ones that the respondents thought need changing. Participating ministry officials were asked to identify some of the weaknesses in the current code of conduct (if any) and identify aspects of the code that they thought needed to change. Interestingly, 42% of them identified the lack of constant awareness on the code of conduct. The other 25% of the respondents/ministries thought that nothing needs changing within the code, while 17% said that the code of conduct needs to harmonize with other new regulations that are now in place so to avoid confusions. Some respondents further stated that since the enactment of the code in 1999 under the Public Service Act, a holistic revision of the code has not taken place.

Most often many ministries are not consulted either. 16% of the ministries interviewed said that it is time that each ministry should be given powers to be able to design their own code of conduct as per their needs and nature of operations. A couple of respondents in this category further stated that each ministry’s complexities of operation are different and the *one-suits-all* concept of the current code does not rest well with them. For example, a health ministry dealing with doctors is completely different from a ministry dealing with teachers.

Table 8: Identification of Weaknesses or Aspects of the Code of Conduct That Need Changing

Awareness	42%
Harmonization with other regulations	17%
Custom made for each ministry	16%
None	25%

*The table highlights some of the weaknesses of the current code of conduct or ones that respondents thought needs changing.*

The development of a code in an important task for any organization and time and careful thought needs to be devoted to frame the document so it fulfills its rightful purpose. McDonald (2009) highlights that careful thought must be given as to how the code and its content are being developed. A code can be enhanced by undertaking consultations with the employees. Stead *et al.* (1990) recommended that to be effective, a code should be developed in an open, participative environment involving as many employees as possible. This will grant both an ownership to employees to this process, as well as to their code of conduct. However, it is important to note that while staff have input into the development or revision of the codes of conduct, the initiation of this development process, implementation and revisions of the code is still is a primary responsibility of the senior management, in this case being the Permanent Secretaries via the Public Service Commission.

### CONCLUDING COMMENTS

The results within this study seem to indicate that while Fiji’s public service code of conduct has been in formal existence since 1999, it does not sufficiently detain a formalized periodic and comprehensive review process for re-adoption of their code. Whilst more emphasis is placed on disciplining staff and employing basic means of communicating the code to employees, there is still an absence of other informal methods like social norms of the organization, ethics education committees and ethics education, which are likely to yield greater awareness about the code and its importance, and greater commitment by staff to its values. The purpose of an ethics committee is to ensure that ethical standards are observed by employees in the organizations and is considered one of the initiatives for building an ethical organization. It also provides focus and initiatives to expose its employees to discussion on ethics and professional conduct for various situations they might face during the course of their employment. However, no ministry or department in Fiji seems to have gone out of the ordinary to make sure ethical conduct remains intact for their respective agencies. Most departments turn to rely on supervisors and managers to handle this aspect of the job, which does not take effect. Many ministries seem to be more reliant on internet technology and most of their responses being “code is on the website” is a bit worrying. Follow-up trainings and discussions on the code of conduct with existing employees is also seems to be lacking. How an employee is then meant to know that their code of conduct is important, if it is not discussed or timely education not given or feedback taken?

Additionally, the code currently adopts a reactive rather than a pro-active approach. Whilst most employees are punished for breaching the code by way of suspension, termination and/or prosecution, no employee is rewarded for adherence to the code or reporting others on the breaches. Supporting this, Logsdon and Yuthas (1997) observed that employees make more effort to understand and follow top management’s ethical guidelines if employees are rewarded for following the desired ethical practices while punishing unethical behavior. Weber (1993) identified four possible incentives that could act as rewards: recognition, appreciation, commendation and monetary rewards. Dean (1992) has also cautioned that fear of sanctions may not be enough to ensure desired ethical behavior. As Fiji embraces a new 2013 constitution, it might embark on a comprehensive review and revision process of its current public service code of conduct. However, replicating, or just slightly modifying the code without required attention given to the customization of the code to the specific needs of the Fiji’s public service, can be dangerous. There needs to be a more formalized and agreed structures for periodic reviews and re-adoption of the code of conduct. Most often, codes are viewed as static and once written, remain unchanged for years. This is incorrect and



it must be recognized that codes need constant and timely revisions in order to be updated to accurately reflect the concerns of employees, the organization and the community at large. It is hoped that the findings of the study will assist users, especially the various ministries, to effectively review the current process pertaining to the awareness and compliance of the code, and to be able to identify areas that need improvement to better achieve the desired behavior from public service officials through its code of conduct.

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# RELATIONSHIP BETWEEN MOBILE NUMBER PORTABILITY AND CONSUMER CHOICE OF ACTIVE MULTIPLE MOBILE PHONE NUMBERS IN GHANA

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## ABSTRACT

*The use of multiple mobile phone numbers in Ghana has become a dominate phenomenon in recent years. The introduction of mobile number portability (MNP) makes it possible for a subscriber to conveniently switch from one mobile network to another without losing his or her number. Because of mobile number portability, we expected that use of multiple numbers would become less attractive. This study examines how mobile number portability has affected the use of multiple phone numbers. We use top, middle and lower level managers of both private and public formal sectors of the economy for examination. Thousands of multiple mobile phone number subscribers were surveyed from Accra where all the mobile networks operate and porting is well known. This study uses the mean and standard deviation to measure the relationship between mobile number portability and multiple phone number use. The study revealed low customer appreciation for mobile number portability, and customers' negative perception of service quality since introduction of mobile number portability. The article further showed weak or no relationship between number portability and use of multiple mobile numbers. Further, we show the introduction of number portability cannot be a panacea to the use of multiple phone lines even in the near future.*

**JEL:** M31, M38, M39

**KEY WORDS:** Consumer Choice of Active Mobile Numbers, Mobile Number Portability, Porting, Multiple Phone Numbers

## INTRODUCTION

Mobile number portability officially became operational in Ghana on 7<sup>th</sup> July, 2011, making it possible for mobile consumers to use service providers as they desire. As has been the custom of countries who previously implemented the facility, the push for mobile number portability implementation in Ghana was led by market regulators in an effort to provide mobile consumers the freedom to move between service providers. The eventual hope was it would lead to healthy competition in the mobile industry (Dewenter & Haucap, 2005; Kumaravel & Kandasamy, 2011). The implementation enables mobile phone subscribers to keep their phone numbers, including the network code even when they switch or port to another network.

Since its introduction in Singapore in 1997, the concept and practice of mobile number portability has attracted widespread research attention. Researchers have tried to investigate mobile number portability effects on brand changing behavior, switching costs, consumer satisfaction and loyalty on provider changing intention, portability and buyer switching intentions (Buehler and Haucap, 2003; Buehler, Dewenter and Haucap, 2005; Shin, 2006; Shin and Kim, 2008; Durukan, Bozaci and Dogan, 2011). Buehler and Haucap (2003) developed a mathematical model for the effects of mobile number portability on switching cost. The findings confirmed that mobile number portability is associated with switching cost. Shin and Kim (2008) studied the relationships between variables of customer satisfaction, switching intention, switching barrier, consumer loyalty, switching costs, quality of service and perceived price. The

study found that MNP had a positive correlation with customer satisfaction, customer switching intention and customer loyalty. MNP related inversely with switching barriers and switching cost. Vaghela (2012) did a study to investigate customer preference for mobile number portability. The study confirmed that mobile number portability increases customer awareness of competing products, and increases customer switching intentions. Furthermore, using the Indian Mobile Market, Kumaravel & Kaudasamy (2011) studied the impact of MNP on mobile users switching behavior. The results revealed the mobile operator's ability to retain its customers has a direct impact on its profitability and effectiveness. Similarly, Durukan, Bozaci & Dogan (2011) undertook an empirical analysis of mobile number portability and consumer switching behavior in Turkey and found that MNP introduction increased the mobile traffic rate, improves subscriber quality, and increased penetration rate.

The related literature illustrates the plethora of studies that have been done on mobile number portability. Yet, one obvious area of concern, which is under research, is how the introduction of mobile number portability impacts consumer choice of active multiple mobile telephone numbers. This exploratory study is significant because a primary reason for introducing MNP is to improve service quality. It was expected that this would reduce the use of multiple phone numbers as networks become more reliable (Keelson, 2012). The simultaneous use of multiple mobile phone networks in Ghana cannot be overemphasized. Studies on use of multiple phone numbers indicate that the phenomenon is a characteristic of mobile phone subscribers in Ghana. An estimated 15 million to 16 million people used 25,344,745 active mobile phone lines in Ghana as of November, 2012. This translates to an average of 1.7 to 1.6 mobile phone lines per subscriber. Similarly, Keelson (2012) revealed that over 40% of tertiary students in Ghana used more than one active phone lines.

Popularity of multiple phone line use may be because mobile phone subscribers, after using a particular line for a long time they find it difficult to stop using it because they become the source of long standing personal and business contacts. Thus, they like to maintain these lines even if the need for acquiring new lines emerge (Buehler & Haucap, 2004; Katka, 2004; Keelson, 2012). This compels subscribers to move from one service provider to another for better service, while maintaining their old lines.

We conceptualize that introduction of mobile number portability seeks to address this emerging challenge of subscribers using multiple mobile numbers. Implementation of mobile number portability in Ghana has intensified competition in the mobile telephony industry, compelling players in the marketplace to adopt competitive pricing and quality strategies. Since mobile number porting allows customers to switch without necessarily changing or losing their number, it is possible under the MNP regime for a subscriber to retain his mobile telephone number when changing from one network provider to the other (Haucap, BOhler & Dewenter, 2005; Buehler, 2007; Vaghela, 2012). This means with the introduction of the MNP, the use of multiple mobile numbers should be discouraged, as the facility improves network reliability. Thus, this paper explores the extent to which introduction of MNP has impacted on service quality and subsequently the use of active multiple mobile phone numbers. The remainder of the study considers review of related literature, data and methodology, results and discussions, and concluding comments.

## LITERATURE REVIEW

### Mobile Number Portability (MNP): The Global Perspective

The development and implementation of mobile number portability originated with Singapore in 1997 followed by Hong Kong and UK in 1998 and 1999 respectively (Buehler and Haucap, 2003; Kumaravel and Kandasamy, 2011). The facility continued to other Asian, European, American and African countries, including Netherland, 1999; Spain and Switzerland, 2001; Australia, 2001; Germany, 2002; USA, France

and Finland, 2003; Austria and Greece, 2004; South Africa and Morocco, 2006; Nigeria, 2007; Egypt, 2008; and Ghana, 2011.

Mobile number portability is a system that makes it possible for a mobile phone subscriber to switch subscription from one provider to another and retain the subscriber's phone numbers (Haucap, 2004). Since the facility allows consumers to switch service providers and yet retain their old mobile phone number, mobile service operators are required to actively compete, and provide innovative as well as improved customer service, if they would retain and expand their market share.

MNP is usually implemented in one of two ways. The first is where the consumer starts the process by contacting the current service provider (Donor Led Porting). The second system is the Recipient Led Porting, which involves contacting the new service provider. This system has been favored by most countries to be a more efficient and smoother process for consumers, (Buehler, Dewenter & Haucap, 2005; Shin, 2006; Shin & Kim, 2008). The process of porting involves a subscriber walking into the shop of the new network provider (Recipient), then the new network (Recipient) contacts the old network (Donor). The request is processed and the subscriber is ported to the new network, after the subscriber is informed of the successful porting and starts using the network.

The introduction of mobile number portability requires that network operators first identify all internal systems that would be influenced by this change and then resolve the system to use for routing the calls from an originating network to the mobile network associated with a given mobile number (Nilsson, 2006; Kumaravel & Kandasamy, 2011). Switching cost is identified as one of the major element associated with the use of mobile phone (Lin, Chlamtac and Yu, 2003; Haucap, 2004; Buehler, Dewenter and Haucap, 2005; Kumaravel and Kandasamy, 2011). Switching cost is real or perceived expenditures incurred when altering supplier but which are not incurred by remaining with the current supplier (Padila et al, 1995). Switching cost is a crucial factor that influencing firm behavior in the mobile telephony market (Kumaravel & Kandasamy, 2011). To address the full impact of switching cost associated with mobile phone service, regulators use mobile number portability to reduce switching cost and facilitate consumer choice and ensure effective competition (Sutherland, 2007). On the other hand, mobile number portability encourages churn, in which service providers try to put at an optimum level (Smura, 2004). Thus, Gans, King & Woodbridge (2001) suggested that implementation of mobile number portability thrives in a dynamic market with as many operators as possible. In such a market, regulators are able to work with a group of determined individuals who support the successful implementation of the facility.

#### Mobile Number Portability (MNP) in Ghana

On Thursday June 30, 2011, Ghanaian parliament adopted the report of the Committee on Subsidiary Legislation on Mobile Number Portability (MNP) Regulations 2011, Legislative Instrument (LI) 1994. By that action, MNP received the legal backing to begin. Mobile Number Portability (MNP) was launched in Ghana on 7th July 2011, enabling mobile subscribers to move from one mobile network to another, while retaining their mobile number (Haucap, 2004). There were 5 active mobile networks in Ghana: MTN, Tigo, Vodafone, Airtel and Expresso. The licensed Glo Mobile was yet to begin operations. The introduction of MNP has generated positive competition in the Ghana's mobile communications sector, compelling mobile operators to offer incentives to woo subscribers from other networks while keeping their existing subscribers (Dewenter and Haucap, 2005; Kumaravel and Kandasamy, 2011). Statistics by National Communications Authority (NCA) indicated that by July 18, 2011 over 6,000 subscribers had ported from one mobile network to another, with most of them being 'hassle-free'.

Smooth implementation of mobile number portability was due to the fact that Ghana, being one of the countries to recently adopting the MNP facility, had the opportunity to learn from previous implementations of MNP in other nations around the world. Thus stakeholders were able to identify most challenges associated with number porting, and carefully planned the MNP system to be successful by avoiding potential pitfalls. Since every facility has its own challenges, the National Communications Authority (NCA) in collaboration with mobile operators did institute measures to quickly resolve problems that arose. At the same time, some mobile providers opened special desks to manage MNP complaints.

The fastest port recorded so far in Ghana took place in a mere 1 minute, 31 seconds, with the average porting time for the first ten days being 4 hours, 17 minutes. This performance compared favorably with recent MNP implementations in other countries, where porting a mobile number can take up to seven days. Even in Europe, porting can take considerably longer than it does in Ghana, and the European Union is only now moving toward a 24 hour maximum, which has been the benchmark for Ghana since implementation of the facility. It took Ghana only 17 months to implement the MNP.

As indicated earlier, worldwide, MNP is usually implemented in one of two main ways. It involves either starting the process by contacting your current service provider (Donor Led Porting) or contacting the new service provider (Recipient Led Porting). Ghana has opted for the Recipient Led porting system. In Ghana, the network that the subscriber is switching to initiates the move. The subscriber only has to go to the recipient network or the network he or she wants to switch to and the switch is initiated. The fee for recipient networks is estimated to be \$2.5, while donor networks will incur about GH¢0.12 in costs. All mobile networks, excluding Expresso for now, have expressed their desire to absorb all costs for users who switch to their networks.

With the introduction of the MNP, all mobile subscribers qualify to benefit from the facility. The only reasons that may disqualify a consumer are: number not being active on the donor network, that is, the network that a subscriber is moving away from. Fraud having been reported; phone reported stolen; not enough of the ID items matching with the request. The request to port to a different operator may not be rejected in the case of debt still owed to the donor network. As at July 2013, as many as 800,000 subscribers have ported from one network to another. This shows the success of MNP's introduction in Ghana. Therefore, one would expect that with such successful implementation, MNP should be able to improve service quality and discourage the use of active multiple phone numbers.

This study aims at measuring the degree to which the introduction of MNP has discouraged subscriber use of multiple mobile phone numbers. To address this general objective, the following significant questions were necessary: 1) What is the degree of subscriber appreciation of MNP in Ghana? 2) What is consumer perception of service quality since the introduction of MNP in Ghana? 3) How does the introduction of MNP affect the use of multiple mobile phone numbers? 4) What is the future of multiple uses of phone numbers in Ghana?

## **DATA AND METHODOLOGY**

This exploratory research uses both primary and secondary research methods to address the information needs. To have a better conceptual framework secondary research was necessary since many studies have been conducted on mobile number portability. Also, primary data was needed because some variables used in this study were different from those of previous studies. Thus, survey was appropriate to confirm the reliability of existing variables, and to test the new variables which were used for the first time. Quantitatively, the survey method was the research instrument for the study. This was appropriate because certain information needed for the study were by nature numerical and could better be handled by



quantitative research instruments. Structured and undisguised questionnaires were used for survey data collection. Close-ended questions were used to limit the responses to specific and manageable items, and avoid possible exhaustive lists of items. In this connection, a 5-likert scale of strongly disagree to strongly agree, were used to measure the magnitude of respondents responses.

One thousand users of mobile phones were selected from managerial positions of both private and public sectors. Participants were surveyed in October 2013. All 1000 people were selected from Accra. For the purposes of the study, this was appropriate because unlike other areas where some mobile telephone companies do not effectively reach, all the mobile network operators have good coverage in Accra. Also most major companies are located in Accra, making it possible to sample views from managers from diverse business and social situations. The survey instrument is presented in Appendix 1. Research question 1 was answered by the use of frequency distribution method. Furthermore, mean and standard deviation were used to analyze the data for questions 2, 3 and 4.

One thousand survey questionnaires were administered to managers of both public and private sector organizations who use active multiple mobile phone numbers. Nine hundred and sixty two completed and usable questionnaire were received, constituting 96.2% response rate. The findings and their discussions are found below:

Gender, number of years one has been using multiple mobile numbers and individual respondent's organizations were used as respondent's details for the study. Tables 1 – 3 represent the findings of the profile of respondents. Table 1 presents findings on the gender of managers who participated in the survey. The results of Table 1 show that 501 females and 461 males respectively constituted respondents for the survey. This implies that more female managers use multiple phone numbers compared to their male counterparts. Similarly the findings of the study represent more views of females than males.

Table1: Gender of Respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	461	47.9	47.9	47.9
	female	501	52.1	52.1	100.0
	Total	962	100.0	100.0	

*This table shows the sexes of respondents. Column two shows the frequency results of number of males against females, while column three shows the percentage of male respondents to female respondents. The frequency distribution table indicate that respondents were made up of 47.9% males as against 52.1% females*

Table 2 represents results of number of years respondents have been using multiple mobile phone numbers. As indicated by Table 2, over 50% of the respondents have used multiple phone number for five years and above. This suggests that the use of multiple mobile numbers in Ghana is historic in nature.

Table 2: Years Multiple Mobile Numbers Used

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 2 years	224	23.3	23.3	23.3
	2 - 4 years	256	26.6	26.6	49.9
	5 or more years	482	50.1	50.1	100.0
	Total	962	100.0	100.0	

*This table shows the number of years respondent has been using multiple phone numbers. Column two shows the frequency results of number of a respondents has been using multiple numbers, while column three shows the percentage of use. The frequency distribution table shows that 23.3% have used multiple numbers for less than 2 years, 26.6% have used up to 4 years and 50.1% have used for at least 5 years*

Table 3 shows whether a respondents is working in the public sector or the private sector. Another significant detail of the respondents were that more public sector workers were involved in the study

relative to those from the private sector. The relationship was 63.5% and 36.6% for public and private sector respectively.

Table 3: Respondent's Organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public	611	63.5	63.5	63.5
	Private	351	36.5	36.5	100.0
	Total	962	100.0	100.0	

*This table shows whether a respondents work in the public or private sector. Column two shows the frequency results of respondents from public and private sectors, while column three concern itself with the percentage public sector workers against private sector workers. The frequency distribution table shows that 63.5% of respondents were from the public sector and 36.5 were from the private sector*

## RESULTS AND DISCUSSION

### Degree of Subscriber Appreciation of the MNP in Ghana

This section presents and discusses the extent to which mobile phone users apply the number portability facility since its introduction in the country. Table 4 below depicts the results. The mean of 2.66 and SD 1.036 indicate that mobile phone users’ knowledge of MNP was centered between ‘knowing much’ and not ‘knowing much’. Thus mobile subscribers’ knowledge of MNP is just around average. Regarding subscribers’ use of the porting facility, the results show very low usage. The mean of 3.01 implies that mobile phone subscribers are not taking advantage of the MNP, while the standard deviation of 0.996 suggests that the attitude toward the use of mobile number porting facility is almost the same among subscribers. The results further illustrate that mobile customers have some amount of technical knowledge to port if they want to. This is explained by the mean of 2.60 and SD 0.717, which indicates that subscribers are either able or somehow able to technically port. However, the results also suggest there is not much subscriber education on the introduction and use of mobile number portability. This is supported by the mean of 2.97, which lies close to the ‘not much of 3. The standard deviation of 0.936 also shows that almost all the responses hover around not receiving much education.

From the Table 4 we see that consumers’ appreciation with regards to knowledge of porting and ability to port are about average, while that of frequency of porting and education received on porting are below average. This suggests that consumers overall appreciation of the coming into force of the mobile number portability is not encouraging.

Table 4: Mean and Standard Deviation Statistics

		Knowledge of MNP	Frequency of Use of MNP	Technical Ability to Port	Education on MNP
N	Valid	962	962	962	962
	Missing	0	0	0	0
Mean		2.66	3.01	2.60	2.97
Std. Deviation		1.036	.996	.717	.936

*This table shows the degree of consumer appreciation for Mobile Number Portability by private and public sector workers. The mean and standard deviation results show above average knowledge, but relatively low frequency of use, below average technical know-how on use and below average education on the use of Mobile Number Portability in Ghana*

### Consumer Perception of Service Quality

In this section we present data presentation and interpretation on how subscribers of mobile phone services in Ghana perceive service quality delivered by the mobile network companies, especially after the coming into force of mobile number portability. The results are shown in Table 5.

The results in Table 5 are a reflection of the fact that consumer perception of the competitiveness of the call rate is just about average. The mean of 3.44 shows that consumers either agree or in some cases not sure of the competitive nature of the mobile call rates in Ghana. Almost all respondents share the same view as indicated by the standard deviation of 1.330. Also, consumers are almost indifference about the erratic nature of the mobile network services. The descriptive statistics results showed a mean of 3.21, which lie between consumers’ being ‘indifferent’ and ‘agreeing’ that the service is erratic. This means that while consumers think the supply is erratic, they are careful to express it. Regarding network coverage, consumers could not fully agree whether coverage is wide enough. The mean of 3.32 and SD 1.336 suggest that network coverage is still a little below average in most cases. It is also significant to note that consumers believe that mobile network companies are not doing much to manage customer complaints. The mean of 2.77 implies that while some subscribers disagree with the manner in which complaints are handled others are indifferent. This means consumers have a negative perception about complaint management by network companies. The standard deviation of 1.183 indicates that respondents have almost the same view. Finally, consumers do not see much improvement in the quality of service since the introduction of MNP. The mean of 2.81 and SD 1.237 suggest that the majority of mobile phone users are either unhappy with the quality of service or cannot say if the service is any better.

In sum, we conclude from Table 5 that consumers of mobile phone services have a negative perception about service quality. The results show that consumer expectations were not met in any of the five scales used to measure consumer perception of service quality. The results suggest that introduction of mobile number portability has not yet contributed to improvement in perceived service quality.

Table 5: Mean and Standard Deviation Statistics

		Competitiveness of Call Rate	Erratic Nature MNP	Network Coverage of Service Providers	Response to Complaints	Customer Service Since Introduction of MNP
N	Valid	962	962	962	962	962
	Missing	0	0	0	0	0
Mean		3.44	3.21	3.32	2.77	2.81
Std. Deviation		1.330	1.203	1.336	1.183	1.237

*This table shows respondent’s perception of service quality since Mobile Number Portability was introduced in Ghana. The mean and standard deviation results show multiple mobile users have negative perception about the competitiveness of call rate, extent of network coverage, suppliers’ response to complaints and customer service. Also, multiple mobile users are concern about the erratic nature of number portability.*

### Relationship between Number Portability and Choice of Multiple Phone Numbers

The manner in which subscribers believe the introduction of mobile number portability could influence their decision to continue using or stop using multiple mobile numbers is discussed in this section. The findings are presented by Table 6. Results show consumers do not think they have any reason to use one mobile number because of the introduction of mobile number portability. The mean of 2.72 and SD 1.165 indicate that most consumers are either not going to stop using multiple numbers or not too sure of what to do with multiple number after the introduction of mobile number portability. Secondly, consumers were almost indifferent as to whether number portability should be a substitute for use of multiple mobile lines. The findings showed a mean of 3.21, which indicates that while some agree that with the porting facility they can concentrate on the use of one line, others were not too sure whether that is a good option. The standard deviation of 1.292 also shows that consumers preference to use one line and port when necessary compared to using multiple lines is between agree and neutral, indicating little or no deviation from majority view. Thirdly, the ability to switch from one number to another is not encouraging enough to consumers to stop using multiple mobile lines. The descriptive findings revealed a mean of 3.21 and SD 1.188, suggesting that while a number of consumers believe that once you have the technical ability to port you may not need to use multiple phone lines, an equal number are not sure whether the ability to port should determine the use of multiple phone lines. Fourth, consumers could not fully agree whether

there are more superior factors influencing their choice of multiple phone line. This is shown by the descriptive results of mean 3.32 and SD 1.201. These findings indicate that as many consumers agree there are some superior determinants factors of using multiple phone lines, as there were those who could not be sure whether there were any such superior factors or not. Finally, there was some level of agreement among users of multiple mobile numbers that portability is good but should not stop one from using multiple lines. The mean of 3.39 and SD 1.169 show that a majority of respondents either agree to the view or were not too sure of themselves.

We conclude from Table 6 that there is weak correlation between mobile number portability and consumer choice of multiple mobile phone lines. This suggest that porting may not be the best marketing practice to minimize the use of multiple mobile phone lines in Ghana, at least for now. Apparently introduction of number portability has neither seen serious appreciation nor improved service quality.

Table 6: Mean and Standard Deviation Statistics

		Use of Multiple Network after MNP	Desire to Use More Network Than One	Ability to Switch Determine Number of Network	Superiority of Multiple Use to MNP	How Benefit of MNP Affect Use of Multiple Lines
N	Valid	962	961	961	962	961
	Missing	0	1	1	0	1
Mean		2.72	3.21	3.21	3.32	3.39
Std. Deviation		1.265	1.292	1.188	1.201	1.169

*This table shows the relationship between the Mobile Number Portability and consumer use of multiple mobile phone lines. The mean and standard deviation results show that even after introduction of number portability, multiple use of mobile phone is still not declining; the desire to use multiple phone is also not going down, consumers consider multiple use of mobile phone ahead of using number portability.*

### Future of MNP and Choice Multiple Phone Numbers in Ghana

The predicted effected of the introduction of MNP on the future use of multiple mobile numbers in Ghana is ascertained. The results is presented in Table 7. The results show a gloomy picture about the future of mobile number portability and the choice of multiple mobile phone networks. Consumers have low belief that continuous application of number portability can reduce consumer choice of multiple phone lines. The mean of 2.62 and SD 1.292 show that respondents were between disagreeing that use of multiple phone lines will cease with increasing application of number portability and being indifferent. This means that consumers hardly expect that increasing application of number portability is anything to stop the future use of multiple phone lines. Again, the results indicate that despite the introduction of MNP, consumers somehow expect that the use of multiple mobile phone lines will rather increase in Ghana with time. This is depicted by the mean of 3.21, which is between agree ‘4’ and neutral ‘5’. Furthermore, consumers do not perceive the growth of MNP to potentially have any future consequences on choice of multiple mobile phone numbers.

The above results suggest that mobile number portability is not a panacea to discouraging multiple use of mobile networks in the future. Consumers rather expect multiple uses of phone lines to increase if number portability is the only factor to discourage the use. Thus, in the near future choice of multiple mobile phone numbers will not have anything to do with the existence of number portability.

### **CONCLUDING COMMENTS**

The purpose of the study was to establish the relationship between mobile number portability and consumer choice of active multiple mobile numbers. Using survey methods, with Likert Scale questions, data were collected from 1000 managers of public and private institutions in Ghana. The data were then analyzed using frequency distribution, mean and standard deviation as statistical tools. The results

indicated that there is relatively good consumer appreciation of the existence of mobile number portability. Also consumer perception of number portability seemed quite positive. The study showed a negative correlation between number portability and multiple uses of mobile phone lines. It further showed no relationship between the growth of use of number portability and minimization of multiple phone line use in the future. We conclude that porting might not be the best marketing practice to minimize the use of multiple mobile phone lines in Ghana. Similarly, as long as the introduction of number portability continues to be less appreciated it shall be a challenge to use that as a means to discourage multiple phone line use. Again, consumers’ negative perception of service quality since the introduction of number portability could be translated to mean that consumers believe that use of multiple phone lines is the means to address the poor services of mobile networks and not porting. In sum, the study found no statistical relation relationship between mobile number portability and service quality, and subsequently, consumer choice of multiple mobile phone number.

Table 7: Mean and Standard Deviation Statistics

		Appreciation of MNP and Use of Different Lines	Expectation of Future of Use of Multiple Lines	Can Portability Discourage Use of Multiple Lines
N	Valid	962	962	962
	Missing	0	0	0
Mean		2.62	3.21	3.29
Std. Deviation		1.292	1.175	1.215

*This table shows the relationship between the Mobile Number Portability and future use of multiple mobile phone lines. The mean and standard deviation results show that consumers will continue to prefer use of multiple mobile numbers to number portability. Thus expectation of future use of multiple mobile numbers seems to be in the ascendancy. The results also show the emergence of number portability cannot be a panacea to multiple uses of mobile numbers.*

We emphasize that use of multiple phone lines go with both economic and social costs (Keelson, 2012), which have implications for the user and the regulator of mobile telephony in Ghana. It is therefore relevant that the introduction of MNP live to its bidding by ensuring quality service. In this case consumer appreciation in the number portability facility will increase. This shall discourage use of multiple phone line now and in the future. This will require that education on the use of number portability is heightened to inculcate the regular use of porting to register displeasure of poor service, instead of using multiple phone lines. The regulators of mobile telephone companies must also attach number portability with some standards of quality service. This will provide consumer confidence in the number portability facility, which may not only be used for its sake but as a means of showing disloyalty to non-performing companies.

The results of the study suggest there may be factors that influence consumer choice of multiple phone lines other than number portability. Future studies may try to identify factors that directly influence the choice of multiple mobile numbers. Also this study used only 1000 managers from public and private sector. The limitation is the view may not represent the over 17 million users of mobile networks in Ghana. Again, the study used frequency distributions and means with standard deviation as statistical techniques. While these are not bad in themselves, a use of techniques such as correlation and regression analysis might be superior to establish the relationships. Thus, future studies may consider using a bigger and wider sample that can cover a whole spectrum of the economy. It is recommended that since introduction of mobile number portability does not seem to be the panacea to continuous use of multiple mobile numbers, research must be carried out to find the primary reasons behind the use of multiple mobile phone numbers. This should heighten attention into the study of use of multiple phone numbers with the aim of discouraging the practice with its associated cost, social and psychological implications.

## APPENDIX: RESEARCH QUESTIONNAIRE

Dear Respondent you have been selected among 999 other officer for a survey to investigate *the relationship between mobile number portability and consumer choice of multiple mobile phone numbers*. Your honest and frank response shall be very much appreciated.

### Instruction

Please tick [] one appropriate response from the sets of responses for the questions below:

### Respondents Profile

1. Gender Male  
[  ] Female [  ]
2. I have used multiple mobile phone numbers for:  
Less than 2 years [  ] 2 – 4 years [  ] 5 or more years [  ]
3. Organization  
Private [  ] Public [  ]

### Subscriber Appreciation of the MNP in Ghana

4. How much do you know about mobile number portability?  
Very much [  ] Much [  ] Not much [  ] Not at all [  ]
5. How often do you use mobile number portability facility?  
Very often [  ] Often [  ] Not often [  ] Not at all [  ]
6. How would you describe your technical ability to port from one network to another?  
Very able [  ] Able [  ] Somehow able [  ] Not able [  ]
7. How much education have you personally received on MNP?  
Very much [  ] much [  ] Not much [  ] Not at all [  ]

### Consumer Perception of Service Quality

8. The mobile call rate is very competitive these days  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
9. The supply of mobile service is still erratic  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
10. No mobile phone service provider still cover covers all the places I usually go in the country  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
11. Response to customer complaints has improve since the introduction of MNP  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
12. Customer services in general has improved since the introduction of MNP  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]

### Relationship between Number Portability and Choice of multiple Phone numbers

13. With the introduction of mobile number portability, I see no reason for using more than one phone  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
14. I prefer to use more than one phone services than to use one number and switch when necessary  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
15. I do not think the ability to switch with the same number should determine the number of phone numbers I use  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
16. My reasons for using multiple phone numbers are far superior than just number portability  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
17. Mobile number portability is good but I do not think it should affect the number of phones one choose to use  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]

### Future of choice of MNP and choice multiple phone numbers in Ghana

18. I foresee that as more people continue to appreciate MNP, the use of multiple lines will cease  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
19. I expect the use of multiple mobile numbers to increase in the coming years  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]
20. I do not think MNP has any potential to discourage the use of multiple phone numbers  
Strongly disagree [  ] Disagree [  ] Neutral [  ] Agree [  ] Strongly agree [  ]

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# DO MULTILATERAL TRADE AGREEMENTS HELP OR HINDER THE U.S. CURRENT ACCOUNT BALANCE?

Mehdi Hojjat, Neumann University

## ABSTRACT

*This paper investigates the effects of Regional Trade Agreements (RTAs) also known as bilateral or multilateral trade agreements on the U.S. current account balance. In contrast to the common belief that RTAs provide export opportunities for U.S. companies, hence improve the U.S. trade balances that are part of the U.S. current account balance, this paper shows that trade agreements adversely impact both of these accounts.*

**JEL:** F, F13

**KEYWORDS:** Trading Bloc, Regional Trade Agreement, Current Account Balance

## INTRODUCTION

The current account is composed of four sub-accounts: (1) Merchandise trade consists of all raw materials and manufactured goods exported, minus those that are imported, (2) Services include tourism, transportation, entertainments, engineering and business services, such as law, management consulting and accounting, as well as fees from overseas amusement parks, such as Euro Disney' patents and copyrights on new technology, software, books, music and movies also are recorded in the service category, (3) Income receipts include income derived from ownership of U.S. assets abroad, such as dividends on holdings of stock and interest on securities, and (4) Unilateral transfers represent one-way transfers of assets when Americans donate humanitarian aids to other countries. (Using the above methods, bilateral and multilateral trade agreements first affect Balance on Merchandise Trade, then the current account. Their final impact can be observed in the Capital and Financial accounts which are on the other side of the ledger in the balance of payment accounting.) Although politicians portray these agreements a positive influence on the U.S. trade, the reality is somewhat different.

The U.S. trade deficit with its Canadian and Mexican partners in NAFTA (North American Free Trade Agreement) is running about \$100 billion a year. Similar deficits exist with the U.S.'s partners in the Central America Free Trade Agreement (CAFTA). U.S. has persistent surpluses with countries in which no trade agreements currently exist, such as Brazil, Hong Kong, Australia and the Netherlands. Therefore, U.S. trading partners are reaping the benefits of the trade agreements and the U.S. comes out short. A review of the literature shows that many studies distort the effects of multilateral trade agreements by exaggerating incremental U.S. exports and underestimating imports from the partnering countries. This research paper attempts to dissolve the myth of the positive influence of the multilateral trade agreements on U.S. exports and job creation. This article first presents a review of literature, followed by a data analysis which projects the U.S. current account balance. The results and concluding remarks are presented at the end of the article, which shows that this projected "balance" is severely undermined by presumably "good" trade agreements.

## REVIEW OF LITERATURE

Simonelli (2007) demonstrated that multilateral trade agreements commenced after a long period of negotiation which on average takes about 10 years. Spending this length of time for an agreement which has questionable benefits for the United States also undermines the work of World Trade Organization (WTO) whose main responsibility is to reduce trade and non-trade barriers at the global level. Moreover,

even if a trade agreement is proven to benefit the U.S. trade balance it should not be approved without a vigorous study of the impact of the additional trade on the environment.

Robalino and Herrera (2010), using the example of Mexico, revealed that deforestation is one of the side effects of additional trade that plays a significant role in the overall balance of carbon in the atmosphere exacerbating the effects of global warming. With the regional trade growing at the rate of 12 percent per year, this trend must be expected to continue Foster & Rosenzweig (2009). Regional trade agreements (RTAs) are proliferating. According to Freun and Ornelas (2010), the average WTO member now has agreements with more than 15 countries. The expected gains from such increased openness to trade stem from the assumption that resources will flow to their most productive uses and lower consumer prices. These authors also warn about preferential liberalization, which can result in creating trade within the members of RTA at the expenses of non-members. While trade creation is associated with the standard gains from trade, trade diversion can make a trade agreement harmful for both members and nonmembers. The consequences of regionalism are generally tied to whether the trading bloc is open to others or not. Yi (1996) shows that regionalism (with custom unions - CUs) is a building bloc to free trade, if it is open. However, if it is not open it can be a stumbling block. A set of related studies reveals the long-run equilibrium of bilateral agreements that are supported by both countries. This literature finds that the spread of regionalism mostly leads to free trade provided that the countries trade policies are symmetrical (e.g., Goyal & Joshi 2006). However, in accordance with Riezman's (1999) finding, regionalism can be either a stumbling bloc or a building bloc when the benefits are unevenly shared by the countries involved (Saggi & Yildiz 2010).

Researchers have identified a number of macroeconomic variables influences U.S. export growth. For example; Jun Nie and Lisa Taylor found that U.S. export growth depends on the economic growth in the rest of the world. Not many scholarly papers have examined the effects of growth in the service sector and petroleum production on the U.S. current account balance. As shown in Figure 1, except for 1990, Americans have run an annual current account deficit with the rest of world in every year since 1982. That unbroken string of deficits has colored much of the trade debate in the United States in the last two decades. Indeed, the deficit was partly to blame for a wave of angst in the late 1980s over American "decline." Best-selling books such as Paul Kennedy's *The Rise and Fall of the Great Powers* and Clyde Prestowitz's *Trading Places: How We Allowed Japan to Take the Lead* caught the mood of the time.

## DATA AND METHODOLOGY

*Projection of the Current Account Balance* : Throughout the 1980s and 1990s, the current account deficit spawned worry about "unfair" foreign trade barriers, lost jobs, and America's ability to compete in the global marketplace. However, the argument of this section will show that none of these statements are true. Beginning in the early 1990s, annual U.S. trade deficits reached unprecedented levels. After decades of postwar surpluses, the U.S. current account deficit reached a record of \$800 billion in 2006, as a percentage of GDP, it approached the unprecedented level of 6% (see Figure 2). In the aftermath of the global financial crisis, the current account deficit started to shrink. By 2009, the account trade deficit was cut in half to less than \$400 billion, which shattered all doom and gloom projections in this area.

In 1998, two years after the 1996 Asian financial turmoil, Daniel Griswold (1998) from the Cato Institute wrote an article about the U.S. trade deficit. One of the main points of his article was the following: the U.S. trade deficit is not caused by unfair trade practices. He also mentioned a survey of America's major trading partners that revealed there is no relationship between bilateral trade balances and openness to U.S. exports. These points are valid but less important since in recent years we are observing inflection points in all trade data that make much of the previous trade analysis erroneous. In 2014, five years after the global financial crisis, I broaden Griswold's research from a mere trade balance to the U.S. current account balance

and examine the most recent data and analyze the current account in relationship to the recent trade agreements.

Figure 1: The U.S. Current Account Balance (\$Millions) Figure 2: The U.S. Current Account Balance As Percentage of GDP

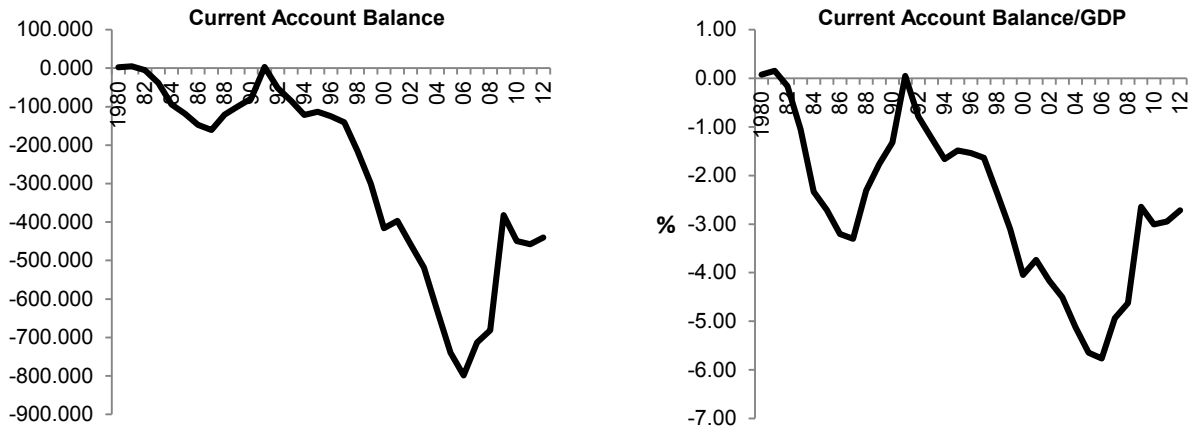


Figure 1 shows quarterly data of the U.S. current account balance from 1980 through 2013. The inflection point took place in the last quarter of 2006 and the improvement is continuing. Source of Data: U.S. Bureau of Census and Federal Reserve Economic Data. Retrieved from <http://research.stlouisfed.org/fred2> Figure 2 shown the U.S. current account balance as a percentage of U.S.GDP. Again inflection point happens in 2006 and the improvement is continuing. Source of Data: U.S. Bureau of Census and Federal Reserve Bank of St. Louis. Retrieved from <http://research.stlouisfed.org/fred2>

Hojjat (2014) demonstrated that the U.S. Current Account balance will reach equilibrium by 2020. Figure 3 shows this projection which uses Bureau of Census quarterly data on the four sub-accounts of the U.S. current account balance and the following three assumptions: (1) Four percent improvement of trade in services per year, (2) Increase in export of LNG from 1 billion CF in 2014 to 6 billion CF by 2020, and (3) A reduction of 4 percent in imports of petroleum products. This projection was confirmed by both cross sectional and time series forecasting.

Figure 3: Projected U.S. Current Account Balance (\$B)

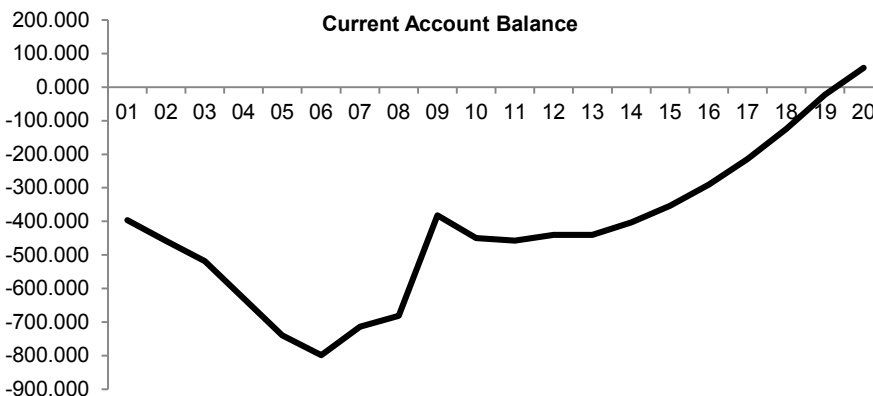


Figure 3 is the projection of the U.S. current account balance based on cross sectional analysis of trade and service accounts of the U.S. balance of payments account. The assumptions include 4 percent increase in the service account, four percent decline on petroleum imports and a gradual increase in LNG exports from Louisiana and Maryland LNG ports. For more information see Hojjat (2014): "Cross Sectional and Time Series Forecast of the U.S. Current Account Balance"

Table 1 is the numerical presentation of the above graph, showing a positive balance by 2020. Both time series and cross section projections display a rather robust outlook for the U.S. current account balances. Both are projecting that by 2020 the U.S. will have a current account surplus.

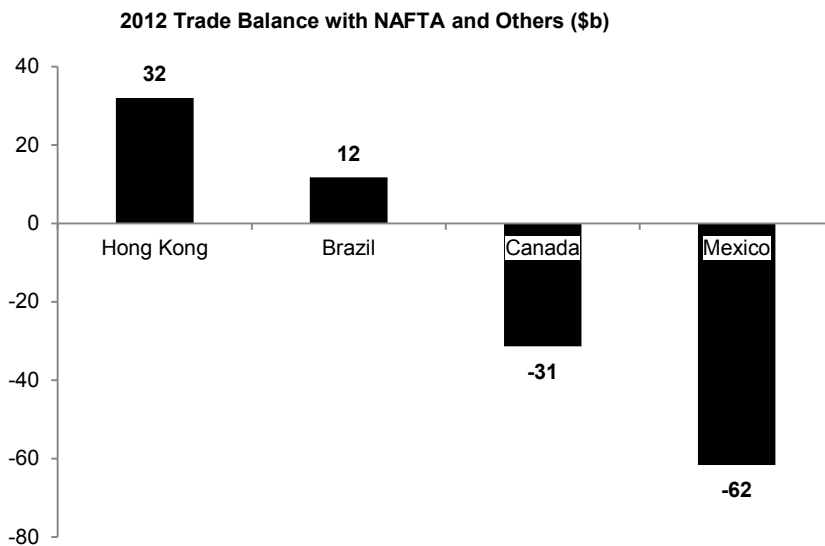
Table 1: Projected U.S. Current Account Balance Using Time Series Data (\$B)

2014	-193.22
2015	-149.36
2016	-105.5
2017	-61.64
2018	-17.78
2019	26.08
2020	69.94

Table 1 presents the projection of the U.S. current account balance, equilibrium will be achieved by 2018 and for the first time in 4 decades U.S. will have a surplus in the current account balance by 2020

Since the focus of this research is to show if the RTAs help or hinder this projection, readers can review the projection in the above referenced citation. Multilateral Trade Agreements and the U.S. Current Account Balance : The most important economic truth to grasp about the U.S. current account deficit is that it is affected by trade policies. Commencing new trade agreement may initially improve the U.S. trade deficit but it has always resulted in a huge trade imbalance in a longer term. The following figure proves this point.

Figure 4: 2012 U.S. Trade Deficits with Selected Countries



Data in Figure 4 retrieved from [www.export.gov](http://www.export.gov). It shows that U.S. has been running trade deficit with countries that has Regional Trade Agreements and surpluses with selected countries that does not have trade agreement

As shown above, the trade deficit with our trading partners in NAFTA has been creating close to a \$100 billion dollar deficit year after year going back more than a decade. The same thing is true about the Central America Free Trade Agreement (CAFTA). At the same time, the U.S. has persistent surpluses with countries with which no trade agreements currently exist, such as Brazil, Hong Kong, Australia and the Netherlands. Therefore, multilateral trade agreements increases U.S. trade, but this is like expanding a two-lane highway of trade into a six-lane highway; four lanes coming in for imports and two lanes going out for export. It has more benefits for the U.S. trading partners than for U.S. exporters.

On the other hand, working within the framework of the WTO to reduce tariffs and NTBs will benefit all member countries, as well as U.S. consumers who will have more choices and lower prices due to the higher level of competition. In this regard, to describe other countries as currency manipulators is a wrong trade policy. This is both an allegation which brings politics into trade policy, and it has never been proven. As shown in the above graph, the protectionist policies of other countries have not significantly affected U.S. trade balances. The U.S. has trade surpluses with rather protectionist countries, such as Brazil, and deficits with Canada and Mexico, which are considered free traders and are members of NAFTA. The same cannot be said for our bilateral deficit with China. Despite substantial progress in the last 10 years, its barriers to imports remain relatively high. Those barriers partly explain the bilateral surplus China runs with the United States, but the primary explanation is more benign: We like to consume the products China sells. In 1995 the Council of Economic Advisers concluded, "China's persistent surplus with the United States in part reflects its specialization in inexpensive mass-market consumer goods. China similarly runs bilateral surpluses with Japan and Europe for this reason."\_ Griswold (1998) asserted that: "If China were to further open its market, America's bilateral deficit with China would probably shrink, but our overall trade deficit—determined by aggregate savings and investment—would remain largely unaffected." How true is this? As shown in the following graph, Dr. Griswold was overly optimistic with regard to our trade deficit with China.

Figure 5: U.S. Trade Deficit with Major Trading Partners

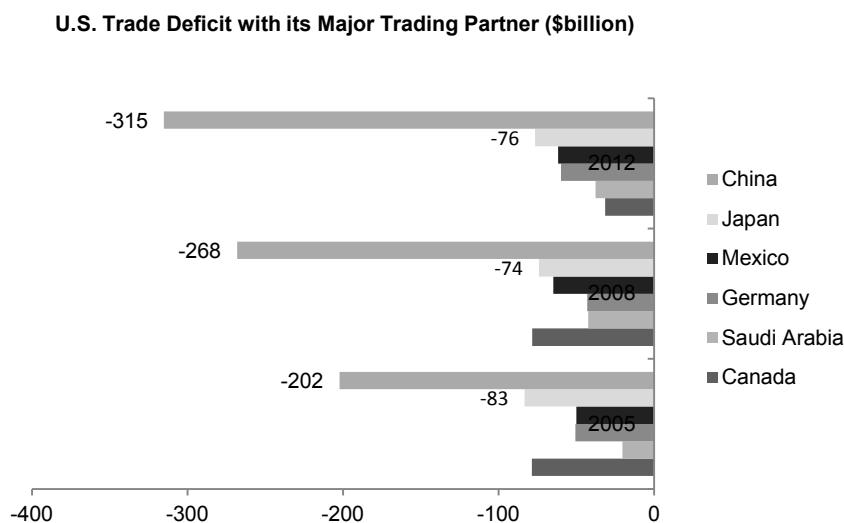


Figure 5 presents U.S. Trade imbalances with its six major trading partners. These deficits, from 2005-2012 have become a permanent part of U.S. trade pattern. Trade agreements can further exasperate these imbalances and retard the current improvement in the U.S. current account balance. Source of Data: Bureau of Economic Analysis, U.S. Department of Commerce

The deficit with China has been ballooning. It is now over 43 percent of the total U.S. trade deficit. See the following graph. The U.S. should complain about the Chinese protectionist policy to the WTO, where it would find many sympathetic ears among countries that have similar deficits with China, and China as a member of WTO has to comply with its ruling.

Figure 6: U.S. Trade Deficit with China



Figure 6 reveals the danger of continuing trade deficit with China. It shows that over 40% of the U.S. trade deficit with the world income is due to imbalance trade with China. If this deficit remains unchecked, it will derail the trend toward U.S. current account surplus by 2010.  
 Source of Data: Bureau of Economic Analysis

## RESULTS

Given the fact that multilateral trade agreements do nothing but deteriorate the U.S. trade position, why do U.S. policy-makers legislate them? The answer is beyond the scope of this article but anyone with knowledge of the hegemonistic intentions of U.S. foreign policy, supported by huge corporate lobbying groups, would not be surprised if the U.S. pushes even further to bring additional groups of countries under its umbrella - Moyer (2013). The formation of regional trade agreements is more about the politics than economics and job creation. In short, multilateral trade agreement increases U.S. trade but it is like expanding a two-lane highway of trade into a six-lane highway; four lanes coming in for imports and two lanes going out for export. It had more benefits to the U.S. trading partners than to the U.S. exporters.

## CONCLUDING COMMENTS

The goal of this paper is to show that there is a brighter future waiting the U.S. current account balance and to warn that this brighter future can be harmed by a reckless push toward more regional trade agreements, including a possible custom union with Europe. The U.S. current account deficit is shrinking due to the underlying strength in the U.S. energy sector. Higher gas efficiencies in cars have reduced the consumption of oil in the U.S. More domestic oil production and the upcoming start of LNG exporting will dramatically brighten the U.S. current account balance. According to our forecast, by 2020 the U.S. will have a current account surplus with the rest of the world. However, there are some stumbling blocks in the way of this forecast. The most important one is the proliferation of trading blocs in which the U.S. is engaged. This paper clearly shows that bilateral and multilateral trade agreements do not help the U.S. current account balance, in fact they do the opposite, i.e., they add the U.S. current account deficit. These agreements are designed to gain political advantages and to keep corporate lobbyists happy. There is a limitation to this research is related to the forecast of the U.S. current account. This discussion was curtailed to limit the length of the article. For details, researchers are encouraged to read Hojjat (2014). A research of this topic can be advanced by examining the effects of potential trade agreements with China and Europe on the U.S. current account balance.

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All papers submitted to the Journal are double-blind reviewed. AT is listed in Cabell's and Ulrich's Periodicals Directory. The Journal is distributed in print, through EBSCO*Host*, ProQuest ABI/Inform and SSRN.

The journal acceptance rate is between 5 and 15 percent.

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### REVISTA GLOBAL de NEGOCIOS

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#### Revista Global de Negocios

Revista Global de Negocios (RGN), a Spanish language Journal, publishes high-quality articles in all areas of business. Theoretical, empirical and applied manuscripts are welcome for publication consideration.

All papers submitted to the Journal are double-blind reviewed. RGN is distributed in print, through EBSCO*Host*, ProQuest ABI/Inform and SSRN. RGN will be submitted to Ulrich's Periodicals Directory, *colciencia*, etc. The Journal is distributed in print, through EBSCO*Host*, ProQuest ABI/Inform and SSRN

The Journal acceptance rate is 20 percent.

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