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THE FINANCIAL CHARACTERISTICS OF U.S. COMPANIES ACQUIRED BY FOREIGN COMPANIES

Ozge Uygur, Rowan University
Gulser Meric, Rowan University
Ilhan Meric, Rider University

ABSTRACT

The number of cross-border mergers and acquisitions has increased considerably after the 2007-2008 financial crisis. However, the post-crisis M&A market has not been studied sufficiently. In this paper, we compare the financial characteristics of the U.S. companies acquired by foreign companies with a matched sample of non-acquired U.S. companies during the post-crisis period. Supporting the findings of the prior literature, we provide evidence that acquiring companies tend to target mismanaged firms with low profitability. We also find that liquidity is not a significant factor in the acquisition decisions of foreign buyers. This paper is one of the first attempts to empirically examine the post-crisis M&A market, which may encourage more future research on the subject.

INTRODUCTION

Foreign acquisition of U.S. companies has been increasing in recent years. For instance, it is stated in the Wall Street Journal (November 22, 2006) that more than 40% of the $1.28 trillion of announced U.S. mergers in 2006 came from foreign buyers. Low company valuations and the weak U.S. dollar have made U.S. companies particularly attractive acquisition targets for foreign buyers after the 2007-2008 financial crisis.

In this paper, we study the financial characteristics of the U.S. companies that were acquired by foreign corporations after the 2007-2008 financial crisis. We examine the liquidity, assets management, financial leverage, profitability, growth, and market value characteristics of the firms and we compare the merger targets with a matched sample of non-acquired U.S. companies. We explain how our findings correspond to merger theory.

We make a contribution to the extant M&A literature in several ways. First, we focus on the M&A activities after the 2007-2008 financial crisis. Our paper is one of very few empirical studies that deal with the post-crisis period. Secondly, we distinguish domestic M&A's from the cross-border M&A's, which received more interest after the financial crisis. Lastly, we examine the U.S. targets acquired by foreign buyers and compare their financial characteristics with the financial characteristics of non-acquired U.S. firms to determine what characteristics make U.S. companies attractive acquisition targets for foreign predators.

The remainder of the paper is organized as follows: The next section reviews the previous literature. In the section that follows, we explain our data and methodology. We present our empirical findings in the section titled "Empirical Findings." In the last section of the paper, we summarize our conclusions and offer suggestions for future research.

LITERATURE REVIEW AND BACKGROUND

The M&A literature focus has traditionally been more on the buyers, rather than the targets. The poor post-merger performance and bad market reaction to mergers are explained by reasons such as hubris (Roll, 1986), managerial entrenchment (Jensen 1986; Morck et al., 1988; Shleifer and Vishny, 1989), empire building (Rhoades, 1983; Black, 1989) and bad judgment (Morck et al., 1990). In addition, the value destruction of mergers has been evaluated extensively in the context of diversification (Lang and Stulz, 1994; Berger and Ofek, 1995; Servaes, 1996).

The focus on targets in M&A activities is typically limited either to specific industries or to certain countries (see, e.g., Meric et al., 1991; Rose, 1987; Trifts and Scanlon, 1987). For instance, Meric et al. (1991) studies the banking industry, in the context of interstate acquisitions, while evaluating the characteristics of target firms. These studies cover time periods prior to the 2007-2008 financial crisis.

There are very few published studies dealing with the M&A activities after the 2007-2008 financial crisis. The recent literature on the subject mainly focuses on the regulation and theory. Therefore, more empirical studies are needed on the subject. For example, Martin et al. (2008, 2011) evaluates the impact of financial crisis on the way M&A deals should be executed. They suggest some new strategies and explain how companies have overcome the lack of cash and credit by getting into more creative M&A deals. The post-crisis cross-border merger literature is also growing. For instance, Sherman and Badillo (2010) state that weak dollar and low valuation make U.S. companies cheaper and encourage foreign buyers. They suggest that this will help the U.S. M&A markets get back on their feet. Tokic and Beyea (2010) point out the latest trend of converging M&A regulation globally, especially after the financial crisis. They argue that such regulatory alignment reduced the differences between country regulations, creating new opportunities for harmonization in corporate governance.

Comparing the financial characteristics of different groups of firms with financial ratios has long been a popular research methodology in the finance literature. Altman (1968), Edmister (1972), and Dambolena and Khoury (1980) predict bankruptcy by comparing the financial ratios of bankrupt and healthy firms. Stevens (1973), Belkaoui (1978), Rege (1984), and Meric et al. (1991) use financial ratios to identify the financial characteristics of companies, which become the target of corporate takeover. Hutchinson et al. (1988) use financial ratios to identify the financial characteristics of companies, which achieve stock market quotation in the U.K. Meric et al. (2000) compare the financial characteristics of Japanese kieretsu-affiliated and independent firms with financial ratios. Meric and Meric (1994) and Meric et al. (2002) use financial ratios to compare the financial characteristics of firms in different countries.

DATA AND METHODOLOGY

Our data collection process consists of three steps. First, we identify the U.S. companies acquired by foreign companies during the 2007–2011 period. Secondly, we collect the data from the financial statements of the target U.S. companies. Lastly, we construct a matched-sample of non-acquired U.S firms and collect the data from their financial statements.

The mergers and acquisitions data are collected from the Capital IQ database. We first identified the U.S. public firms acquired by foreign companies during the period of 2007–2011. We then collected the annual data from the year-end financial statements of our sample firms from the Compustat database for the fiscal year one year prior to the year of merger. In order to mitigate the excessive influence of the outliers, we winsorized our sample at the 1% and 99% levels.

As the final step of our data collection, we created a matched-sample for the target firms. We matched every target company with a same-size non-acquired public company from the same industry. After we settled the matched sample, we collected their annual financial data again from the Compustat database. Overall, our sample consists of 110 U.S. targets and 110 matched U.S. non-acquired public firms. The summary statistics of the target sample and the matched sample are presented in Table 1.

Table 1: Summary Statistics of the Target Sample and the Matched Sample

	Target U.S. Public Firms			Matched Non-Acquired U.S. Public Firms		
Variables	**Mean**	**Median**	**Std. Dev.**	**Mean**	**Median**	**Std. Dev.**
Total Assets	4,406.32	567.80	16,474.00	4,097.92	561.44	16,621.37
Current Assets	1,288.25	315.51	3,848.85	1,152.18	237.30	4,382.36
Net Fixed Assets	1,960.82	91.56	9,540.50	1,955.20	117.14	9,071.85
Sales	4,015.18	568.03	16,293.18	2,905.42	269.79	11,797.76
Net Income	231.61	16.38	1,089.49	183.12	17.13	702.50
Stock Price per Share	19.76	16.26	18.89	20.93	12.81	24.23

This table displays the summary statistics of the sample. The values are in thousands of U.S. dollars.

Multiple Discriminant Analysis (MDA) and Multivariate Analysis of Variance (MANOVA) are the two statistical methods most commonly used in previous studies to compare the financial characteristics of different groups of firms. In this study, we use the MANOVA method to compare the financial characteristics of U.S. companies that were acquired by foreign corporations during the 2007-2011 period with an equal number of U.S. control group companies. The financial ratios used in the comparison are presented in Table 2.

Table 2: Financial Ratios Used in the Study as Measures of Firm Financial Characteristics

Financial Ratio Name	Financial Ratio Definition
Liquidity	
Current Ratio (CUR)	Current Assets / Current Liabilities
Quick Ratio (QUR)	(Current Assets - Inventories) / Current Liabilities
Liquid Assets Ratio (LAR)	(Cash + Marketable Securities) / Total Assets
Asset Management (Turnover) Ratios	
Accounts Receivable Turnover (ART)	Sales / Accounts Receivable
Inventory Turnover (INT)	Sales / Inventory
Fixed Assets Turnover (FAT)	Sales / Net Fixed Assets
Total Assets Turnover (TAT)	Sales / Total Assets
Financial Leverage	
Total Debt Ratio (TDR)	Total Debt / Total Assets
Profitability	
Net Profit Margin (NPM)	Net Income / Sales
Operating Profit Margin (OPM)	Operating Income / Sales
Return on Assets (ROA)	Net Income / Total Assets
Earning Power Ratio (EPR)	Operating Income / Total Assets
Return on Equity (ROE)	Net Income / Common Equity
Growth	
Capital Expenditures Ratios (CER)	Capital Expenditures / Total Assets
Market Value	
Market-to-Book Ratio (MBK)	Market Value Per Share / Book Value Per Share

This table explains the calculation methodology of the ratios used in the study. The ratios are calculated with data for the fiscal year prior to the year of the acquisition.

MANOVA TESTS

The MANOVA test statistics are presented in Table 3. The multivariate F statistic is used to test the null hypothesis that the mean ratio/variable vector for the acquired firms is not significantly different from the

mean ratio/variable vector for the control group firms. The multivariate F statistic in the table indicates that the alternative hypothesis should be accepted at the ten-percent level of significance (i.e., the overall financial characteristics of the acquired and control group firms are significantly different at the ten-percent level).

The univariate F statistics indicate that the liquidity levels of the two groups of firms, as measured by the current ratio (CUR), quick ratio (QUR), and liquid assets ratio (LAR), are not significantly different. None of the three liquidity ratios of the two groups of firms is significantly different. The quick ratios of the two groups of firms are almost identical. These results imply that liquidity level of the target company is not a significant consideration in the acquisition decision.

Table 3: Multivariate Analysis of Variance (MANOVA)

Financial Ratios	Means and Standard Deviations†		Univariate Statistics	
	Merger Targets	Control Firms	F value	P Value
Liquidity				
Current Ratio	2.55	2.64	0.080	0.777
	(1.63)	(1.76)		
Quick Ratio	2.00	2.00	0.000	1.000
	(1.50)	(1.53)		
Liquid Assets Ratio	0.17	0.20	1.186	0.278
	(0.16)	(1.09)		
Asset Management (Turnover) Ratios				
Acc. Rec. Turnover	6.87	12.03	6.779***	0.010
	(4.04)	(14.96)		
Inventory Turnover	30.38	15.22	3.862**	0.052
	(58.35)	(14.96)		
Fixed Assets Turnover	5.77	8.48	1.744	0.189
	(6.40)	(14.70)		
Total Assets Turnover	0.80	0.92	2.763*	0.099
	(0.42)	(0.42)		
Financial Leverage				
Total Debt Ratio	49.1%	51.6%	0.280	0.598
	(19.9%)	(30.0%)		
Profitability				
Net Profit Margin	-10.4%	2.5%	2.906*	0.091
	(57.1%)	(15.4%)		
Oper. Profit Margin	-3.5%	8.2%	2.744*	0.100
	(53.7%)	(12.9%)		
Return on Assets	-0.8%	2.8%	2.455	0.120
	(14.8%)	(9.9%)		
Earning Power Ratio	4.1%	7.8%	3.456*	0.065
	(12.1%)	(9.3%)		
Return on Equity	-3.6%	1.2%	0.597	0.441
	(39.5%)	(28.8%)		
Growth				
Cap. Expend. Ratio	4.9%	5.0%	0.011	0.917
	(0.2%)	(4.0%)		
Market Value				
Market-to-Book Ratio	2.44%	1.66%	3.636*	0.059
	(1.91%)	(2.61%)		
	Multivariate Statistics:		1.630*	0.078

This table compares the financial characteristics of the merger target companies with the control group companies using the MANOVA technique.† The figures in parentheses are the standard deviations. ***, **, * indicate that the difference is significant at the 1-percent, 5-percent, and 10-percent levels, respectively.

The univariate F statistics for the asset management (turnover) ratios imply that the asset management of the target company is an important consideration in the acquisition decision. The accounts receivable turnover ratios of the two groups of firms are significantly different at the 1-percent level. The mean value statistic indicates that the acquired companies have significantly higher accounts receivable levels compared with control group companies. This may imply mismanagement of accounts receivable in the

target companies and, perhaps, presence of a large amount of uncollectable accounts. However, inventory management does not appear to be an asset management problem in the acquired firms. The mean inventory turnover ratio of the acquired firms is significantly higher than that of the control group firms at the 5-percent level.

The fixed asset turnover ratios of the two groups of firms are not significantly different. However, the total assets turnover of the control group firms is significantly higher compared with the acquired firms at the 10-percent level. This implies the presence of a significant total asset management problem in the acquired companies compared with the control group companies. Since the acquired companies do not appear to have any problems related to fixed asset and inventory management, the problem appears to be related to accounts receivable management.

The merger theory argues that acquiring companies generally target mismanaged companies with an unused debt capacity and low profitability or loss. The idea is that the acquiring company can improve the management of the mismanaged target for synergistic benefits. The unused debt capacity can be utilized to improve the target's capital structure and to boost equity returns. The losses of the target company can be deducted from the profits of the acquiring company for tax benefits. The low profitability of the target company may be the result of mismanagement. By improving the target's management, the acquiring company can improve its profitability for significant synergistic benefits.

As the theory argues, the mean debt ratio of the acquired companies in the sample is lower than that of the control group companies. However, the difference is not statistically significant. We also find that, as the merger theory argues, the acquired companies are considerably less profitable compared with control group companies.

The mean net and operating profit margins of the acquired companies are significantly lower than those of the control group companies. This may imply cost management problems and/or product pricing problems in the acquired companies, which the acquiring companies would hope to be able to improve for synergistic benefits.

Asset profitability is also significantly better in the control group firms than in the acquired firms. This may be the result of poor asset utilization and cost or marketing management problems, which the acquiring companies would hope to be able to improve for synergistic benefits. The return-on-equity ratio is considerably better in the control group firms compared with the acquired firms. However, the difference is not statistically significant because the standard deviation figures for both samples are quite large.

The capital expenditure ratios of the two groups of firms are not significantly different. However, the market-to-book ratio of the acquired companies is significantly higher than that of the control group firms. This may be because the market may be viewing the acquired firms as good long-term growth prospects and biding up their prices. Furthermore, we use data for the year prior to the acquisition year in the study. It is possible that investors may have anticipated that the acquired firms could be acquisition targets and they may have bidden up their share prices in the year prior to the acquisition year.

SUMMARY AND CONCLUSIONS

Little is known about the effect of financial crises on cross-border mergers. There is a new growing strand of literature on post-crisis M&A markets. In this study, we make a contribution to this literature by studying the foreign acquisitions of U.S. target companies after the 2007-2008 financial crisis.

We use financial ratios and the MANOVA (Multivariate Analysis of Variance) methodology to compare the target U.S. firms that were acquired by foreign corporations during the 2007-2011 period with a matched sample of non-acquired U.S. firms to study the effect of liquidity, assets management, financial leverage, profitability, growth, and market value on the cross-border merger decision.

The merger literature suggests that acquiring companies tend to target mismanaged companies with low profitability or loss and with unused debt capacity. The objective for the acquiring company is to improve the performance of the target and utilize the unused debt capacity for synergistic benefits. Our findings in this study support the predictions of the merger theory. We find that the U.S. companies that were targeted by foreign predators during the post 2007-2008 financial crisis period had low profitability, mismanaged assets, and low debt ratios.

The target U.S. companies appear to have no asset management problems related to inventories and fixed assets. However, they appear to have significant problems related to accounts receivable management. The mean accounts receivable turnover ratio of the acquired U.S. companies is significantly lower than that of the non-acquired U.S. companies.

We also find that the total assets turnover ratio of the acquired U.S. companies is significantly lower than that of the non-acquired U.S. companies. Along with significantly lower net and operating profit margin ratios, this results in significantly lower asset profitability ratios for the acquired companies compared with the non-acquired companies. Although it is not statistically significant, in conformity with the merger theory's prediction, we also find that the acquired companies have a lower mean debt ratio compared with the non-acquired companies.

Our findings indicate that liquidity was not a significant consideration in the acquisition decision of the foreign predators. The liquidity ratios of the acquired U.S. companies are not significantly different compared with the liquidity ratios of the non-target U.S. companies. In fact, the quick ratios of the two groups of firms are almost identical in terms of the mean values and the standard deviations.

The capital expenditure ratio gives an idea about the current growth rate of a company. Whereas the market-to-book ratio gives an idea about the market's perception of a company's long term growth prospects. We find that the mean capital expenditure ratios of the acquired and non-acquired U.S. companies are not significantly different. However, the mean market-to-book ratio of the acquired companies is significantly higher than that of the non-acquired companies. This may be because the market may be viewing the acquired firms as good long-term growth prospects or potential acquisition targets.

There is considerable interest in the recent literature in the post-crisis M&A activities. In this paper, we make a contribution to this growing body of literature by studying the foreign acquisitions of U.S. companies after the 2007-2008 financial crisis. Our preliminary finding in this study may encourage further studies on this subject.

A limitation of our study is that it only focuses on the post-2007-2008-crisis M&A activities. A more comprehensive future study can compare the findings for several post-crisis periods to determine if the results are period-specific or if there are certain characteristics common to all post-crisis merger activities. In this paper, we study the post-crisis acquisition of U.S. target firms by foreign companies. Future research can also examine the post-crisis acquisition of U.S. target companies by other U.S. companies and compare the results.

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BIOGRAPHY

Dr. Ozge Uygur is an Assistant Professor of Finance at Rowan University. She can be contacted at: Department of Accounting and Finance, Rohrer College of Business, Rowan University, Glassboro, NJ 08028. Email: uygur@rowan.edu.

Dr. Gulser Meric is a Professor of Finance at Rowan University. She can be contacted at: Department of Accounting and Finance, Rohrer College of Business, Rowan University, Glassboro, NJ 08028. Email: meric@rowan.edu.

Dr. Ilhan Meric is a Professor of Finance at Rider University. He can be contacted at: Department of Finance and Economics, College of Business Administration, Rider University, Lawrenceville, NJ 08648. Email: meric@rider.edu.

LAGGED EFFECTS OF TRAINING ON FINANCIAL PERFORMANCE: EVIDENCE FROM LONGITUDINAL DATA

Yahn-Shir Chen, National Yunlin University of Science and Technology, Taiwan
Joseph Hsu, National Yunlin University of Science and Technology, Taiwan
Mei-Ting Huang, National Yunlin University of Science and Technology, Taiwan

ABSTRACT

This paper examines the lagged association between training and financial performance of audit firms. Based on a panel data of 136 audit firms in Taiwan from 1992 to 1998, this paper constructs a year fixed effect regression model to test our hypotheses. Both partners' and assistants' training have significantly positive effects on financial performance with the former occurring in the current and one-year-lagged periods and the latter occurring in the one-year-lagged and two-year-lagged periods. Positive and significant association between training and financial performance informs practitioners that training contributes to audit firms and justifies the continuous education requirement in the public accounting profession. The evidence of one-year-delay effect of assistants' training on performance conveys managerial implication to the practitioners in their employee recruitment policy. This paper is the first to exclusively examine the lagged association between training and financial performance at the organization level. The evidence of lagged association explains in part the mixed results on the relation between training and financial performance reported by prior studies. The two-year association between training and financial performance fills the literature gap left by researches on training both in the public accounting and in other industries.

JEL: M42

KEYWORDS: training, financial performance, lagged association, audit firms

INTRODUCTION

Professional training is a compulsory requirement in the auditing industry to advance the expertise and competency of auditors and audit quality. All professional staffs, including partners and assistants, are required to participate continuing professional education (CPE) and take some minimum CPE hours in a specified period. In practice, partners always take the CPE curriculums first and then pass the new knowledge on to assistants through internal training programs. Assistants apply the knowledge gained directly to audit engagements. From the initial training of partners to the final application of assistants to field works takes time. Does training matter? Prior studies indicate that the association between training and financial performance is mixed (Tharenou et al, 2007). We argue that lagged association exists between training and performance and the degree of association varies for different training participants. Few prior studies directly examine the lagged association between training and financial performance, which motivates us to investigate it with the results to fill the gap left.

Panel data of 136 audit firms are constructed from 1992 to 1998 and our focusing the research on specific industry adds research homogeneity (Fasci and Valdez, 1998). This study defines professional training as training hours taken by partners and by assistants. At a given time, training hours of partners and assistants have significantly positive effects on financial performance with the former occurring in the current and one-year-lagged periods and the latter occurring in the one-year-lagged and two-year- lagged periods. The effects of partners' and assistants' training on performance cease in the two-year-lagged and three-year-lagged periods, respectively. Namely, the financial performance effect of training lasts two years and the effect of partners' training occurs immediately but that of assistant's delays one year. Next, the degree of the effects of partners' training on performance is higher than that of assistants' in the current period but lower in the two-year-lagged period.

Prior studies most closely related to this study are d'Arcimoles (1997) and Chen et al. (2008). The former examines the correlation between human resource policies (including training) and company performance, and the latter investigates the association between CPE and financial performance of audit firms. d'Arcimoles (1997) defined training as rate of training expenses and reports an immediate and permanent correlation between training and performance. Using a cross-sectional data set of audit firms in Taiwan, Chen et al. (2008) assessed training by CPE hours taken by partners and assistants but have mixed results regarding the association between CPA and performance. This study is an extension of d'Arcimoles (1997) by dividing training participants into partners and assistants, and measures training by training hours which is a more complete or perfect depiction of training results compared to training expenses (Atkinson et al, 2007). Our evidence that differences exist in the periods of financial performance effects of training taken by partners and by assistants naturally extends d'Arcimoles (1997). However, our finding that the impact of training on financial performance lasts two years is different from d'Arcimoles (1997). Although Chen et al. (2008) and this study use the same data set, they employ a cross-sectional observations but we utilize panel data. Hence, this study has data refinement over them and our results of lagged relation between training and financial performance explain their mixed results.

To the best of our knowledge, this paper is the first to exclusively examine the lagged relation between training and financial performance at an organization level. The evidence of lagged association explains in part the mixed results identified in prior studies, which contributes to the literature of human resources management. Additionally, our results provide managerial implications for the public accounting practitioners. First and foremost, the evidence of one-year-delay financial performance effects of assistants' training signals managerial implication to the employee recruitment policy of audit firms. It is advisable for the practitioners to lower the turnover of assistants, especially those of entry level assistants, to retain the experienced employees and in turn to accumulate human capital for the firms. Next, positive association between training and financial performance informs practitioners that CPE contributes to audit firms. Further, the two-year but not permanent significant financial performance effects of training justifies the continuous education requirement in the auditing industry. That is, training has positive effect on financial performance for two running years only. To keep auditors proficient with the new accounting and auditing standards and to make auditors knowledgeable about new information and communication technology, auditors' taking continuous professional training is warranted.

The remainder of this paper proceeds as follows. This paper reviews prior literature and develops hypotheses in Section 2. Section 3 describes the methodology and Section 4 presents empirical results. Practical implication discussions are appeared in Section 5. This paper concludes in Section 6.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

By definition, training is the systematic acquisition and development of knowledge, skill, and attitudes required by employees to adequately perform a task or job or to improve performance in the job environment (Goldstein, 1980; Latham, 1988). Prior studies document that training is positively related to both human resource outcomes (such as low absenteeism, low turnover, and motivation) and organizational performance (such as output or quality). However, the relationship between training and financial performance is mixed (Tharenou et al, 2007). Some researchers find positive results (e.g., Aragón-Sánchez et al, 2003; García, 2005; Guerrero and Barraud-Didier, 2004) but some have negative findings (e.g., Paul and Anantharaman, 2003). One of the reasons behind the mixed results is the lagged effects of training on financial performance. The effects of training on organizational performance actually have an average maturing period which exceeds the financial year (García, 2005).

In this line of studies on professional training of audit firms, low levels of technical training associate with deficient practice (Wallace and Campbell, 1988) but high level of continuing education relates to increased knowledge, a necessary component of competence demand (Grotelueschen, 1990). Substandard professional performance related to competency is typically accompanied by relatively low levels of technical professional training (Thomas et al, 1998). When professionals or experts receive more formal instructions through either academic education or professional training courses of audit firms, they have

better audit performance (Bonner and Pennington, 1991).

Milgrom and Roberts (1992) stated that the most important specialized input in partnerships is typically the knowledge and abilities of the workers, that is, their human capital. Investment in education and training expedites the formation of human capital and then improves the productivity of employees (Psacharopoulos, 1985). From the perspective of human capital theory, education and training are regarded as a critical path to invest human capital. Educational training thus is a supporting system to enhance human capital, especially the firm-specific human capital. Audit firms are a professional service organization and their human capital is embodied in the auditors with expertise and competency. By virtue of pre-employment formal academic education, continuing professional education, and work experience, auditors are qualified to perform audit (Boynton et al, 2001). Much of an organization's knowledge resides in its human capital (Lepak and Snell, 1999) and human capital is fostered by the knowledge and skill gained from education and training (Schultz, 1961). Hence, audit firms communicate related knowledge and professional skills to employees through educational training in the following situations: when employees are newly recruited or promoted, or when accounting/auditing standards or related laws/rules are promulgated or amended. This makes the employee possess necessary competence to fulfill audit job and to perform it efficiently and effectively.

Practically, professional training of audit firms can be administered internally or externally. Public accounting association of each country is always responsible for most of the external CPE programs and for the registration of internal and external CPE hours taken by auditors. For example, auditors are required to have 120 CPE hours in every 3-year period in some states of the U.S. (Arens et al, 2003). The Financial Supervisory Commission in Taiwan requires auditors serving public companies to have 100 CPE hours in every 3-year period and have minimum 24 CPE hours in each year. External training curriculums contain general courses for all auditors in the industry. The external training curriculums include courses such as auditing and financial accounting standards and financial attestation practices, tax rules and tax attestation practices, enterprise resource planning (ERP), new information technology of eXtensible Business Reporting Language (XBRL), or inheritance tax planning. Internal training courses are designed to cater to the needs of individual audit firms. Most internal curriculums are arranged for audit engagements with specific topics such as internal control assessment, introductory of computer auditing, audit planning and supervision, detection of management fraud, and analytical review procedure.

In practice, partners always take part in external training curriculums first and then pass the knowledge gained on to the assistants through internal training programs. Take the internal training programs of a big international audit firm, Ernst & Young, as an example. To introduce a new audit software being used within its global member firms, the headquarter office of Ernst & Young in London first trains seeds instructors from area offices. Then, area seeds instructors hold a training program for seeds instructors from local offices. Finally, local seeds instructors take charge of training their firms' employees. In the training program, partners are always the seeds instructors. Apparently, time lag exists between the professional training taken by partners and by assistants.

In audit firms, partners play dual role as chief executive officers and owners. Partners thus have more incentives to advance the growth and performance of the audit firms than do assistants (Pennings et al, 1998). The average years of experience for partners, managers, senior or in-charge auditors, and staff assistants are over 10 years, 5-10 years, 2-5 years and 0-2 years, respectively (Elder et al, 2008). Partners are much experienced and the human capital embedded in partners constitutes the critical resources that are valuable, rare, unique, and difficult to imitate. Equipped with more experience and expertise, partners absorb knowledge from professional training and apply it to audit tasks immediately. In contrast, it takes time for assistants to be proficient at applying knowledge gained from professional training.

Based on prior studies and the practical phenomenon observed, this paper expects that training of partners affects financial performance in both current and future periods but training of assistants affects future period only. This study establishes the following hypotheses to articulate the expectations.

Hypothesis 1: Professional training taken by partners has both immediate and lagged association with financial performance of audit firms.

Hypothesis 2: Professional training taken by assistants only has lagged association with financial performance of audit firms.

METHODOLOGY

Empirical panel data used in this paper are registered audit firms in the Taiwanese auditing industry. Based on the Structure-Conduct-Performance theoretical framework developed by Cowling and Waterson (1976), we establish the following year fixed effects regression equation to test our hypotheses due to a panel of four years data is used (Greene, 1997).

$$PERF_{t+\tau} = \beta_0 + \beta_1 PARTTRAIN_t + \beta_2 ASSITRAIN_t + \beta_3 SIZE_{t+\tau} + \beta_4 DIV_{t+\tau} + \beta_5 GDP_{t+\tau} + \beta_6 YEAR_t + \varepsilon_{t+\tau}$$

where,

t =1992, 1993, 1994, and 1995;
τ= number of lagged period, 0, 1, 2, and 3;
PERF= financial performance;
PARTTRAIN= training taken by partners;
ASSITRAIN= training taken by assistants;
SIZE= size of audit firms;
DIV= degree of business diversification;
GDP= economic indicator;
YEAR= dummy variable coded 1 for observations in year t, and 0 otherwise
ε= error term.

Accounting defines financial performance as total revenues minus total expenses, that is, net income or net profit. Partners are the owners and residual interest claimants of audit firms and their annual income comprises salaries received and shares of operating profit. The salaries of partners, weekly or monthly, are part of the total expenses of the firms. According to related laws and regulations, operating profit of audit firms should be allocated to partners annually and is not allowed to be kept as retained earnings. The more salaries paid to the partners, the less the operating profit of the audit firms. It is indifferent for the partners to receive salaries or not in terms of their comprehensive annual income. In addition, the criteria for salary payment to partners differ across firms. The salary expenses of partners are thus added back to financial performance to reduce the artificial noise caused by partners' salaries. As a result, this study defines financial performance (*PERF*) of audit firms as an organizational level outcome, total revenues minus total expenses plus partner salaries then deflated by the ending number of partners.

Measures of training commonly used in prior studies include training expenses and training hours. Training hours are leading indicator of training expenses in the measurement of economic outcome of training (Atkinson et al, 2007). From the perspective of managerial accounting, training hours are more complete or perfect depictions of training results compared to training expenses. Further, global public accounting professions employ the total-training-hour approach for both partners and assistants. To provide a refined measurement of training, this study defines professional training as mean training hours taken by partners (*PARTTRAIN*) and by assistants (*ASSITRAIN*).

Apart from the variables of interest, some other factors affecting financial performance of audit firms are incorporated into the empirical model as control variables. In theory, audit firms can enjoy economy of scale when their size expands (Watts and Zimmerman, 1986). Audit firm size can be estimated by either the number of full-time employees (Collins-Dodd et al, 2004) or market share of the individual firms (Chen et al, 2002; Chen et al, 2008). Prior studies report a positive relationship between audit firm size and performance (Collins-Dodd et al, 2004; Chen et al, 2002; Chen et al, 2008). Based on prior studies,

this study expects a positive association between financial performance and size of audit firms (*SIZE*), defined as nature logarithm of the total number of employees in the firms.

To meet the growing need for non-audit services, audit firms have expanded their scope of services to provide non-audit services, such as tax services, management consultation services as well as accounting and bookkeeping services (Elder et al, 2008, p.12). Owing to economies of scope arising from the sharing or joint utilization of inputs, diversities in service line enhance a firm's efficiencies (Baumol et al, 1982, p.75-79). We measure the degree of business diversification (*DIV*) by the following Entropy index.

$$DIV = \sum_{i=1}^{10} S_i LOG\left(\frac{1}{S_i}\right)$$

where S_i denotes revenues from practice i as a percentage of total revenues in an audit firm. According to the data set used by this paper, audit firms may offer ten practices, including audit of financial statements of public companies, audit of financial statements of private companies, audit of financial statements for granting a bank loan, audit of financial statements for special purposes, audit of corporate income tax returns, tax planning and consultation, tax appeal and tax litigations, other tax operations, management advisory services, registration filing and bookkeeping services. In theory, the larger amount the Entropy index, the greater the degree of diversification. Based on prior studies (Rumelt, 1974; Khanna and Palepu, 1997; Singh et al, 2001), this study expects a positive relationship between degree of business diversification and financial performance.

As a professional service organization, audit firms are affected by local economy (e.g., Reynolds and Francis, 2001). Economic indicator (*GDP*), defined as Taiwanese Gross Domestic Product, is included to control the effects of external environment on performance. However, auditors have provided services to the same clients for years (Chang and Lin, 2000) and most of their practices are statutory. This makes the effects of environment factors on financial performance of audit firms to be limited. As a result, this study does not specify any directional prediction on the relationship between economic indicator and financial performance.

RESULTS

Empirical panel data of 136 audit firms are obtained from the 1992-1998 Survey Report of Audit Firms in Taiwan, published by the Financial Supervisory Commission (FSC). To collect business information on the auditing industry for macro-economic analyses and industrial policy formations, the Taiwanese Ministry of Finance had annually administered the survey over all registered audit firms from 1989 to 2003. Hence, the empirical data of this study are annual observations. The FSC took charge of the official survey in 2004. Both agencies publish the Survey Report annually except in 1991. Items surveyed include quantitative information of total revenues and their compositions, total expenditures and their compositions, demographics of various levels of employees, ending amount of fixed assets. Qualitative information is collected by an open questionnaire asking about operating difficulties encountered and future business strategy to be taken. As the survey is administered pursuant to the Act of Statistics, audit firms surveyed are obligated to fill the questionnaire correctly and in due time period. Thus annual response rate, according to the Survey Report, is over eighty percent.

In the Survey Report, data about professional training include training expenses and training hours. Although information of training expenses is provided annually, it is an aggregate amount for the audit firms. Information of training hours includes annual training hours taken by partners and by assistants, but is available from 1992 to 1995 only. To investigate the lagged association between training hours and financial performance, this paper constructs a panel data of 136 audit firms for the sample period. As the periods of lagged association investigated are three, our sample period covers from 1992 to 1998. To account for inflation, we deflate all monetary variables by the yearly consumer price index. The number of observation for current, one-year-lagged, two-year-lagged, and three-year-lagged periods is 544

firm-years (136 firms*4 years). Specifically, experimental variables of professional training taken by partners and assistants include 136 audit firms from 1992 to 1995 and dependent and control variables are provided for current period (1992-1995), one-year-lagged period (1993-1996), two-year-lagged period (1994-1997), and three-year-lagged period (1995-1998).

Descriptive Statistics and Correlation Analysis

Descriptive statistics of variables for current, one-year-lagged, two-year-lagged, and three-year-lagged periods are displayed in Panels A, B, C, and D of Table 1. As shown in Panel A, mean training hours taken by partners (*PARTTRAIN*), 48.149, are higher than mean training hours taken by assistants (*ASSITRAIN*), 30.595. Mean financial performance (*PERF*) ranges from 1,521,602 (current period) to 1,610,322 (two-year-lagged period). Average size of audit firms (*SIZE*) lies between 2.756(three-year-lagged period) and 2.798(one-year-lagged period), indicating that total number of employee in audit firms is about eight to ten. All of the amounts of degrees of business diversification (*DIV*) are about and above 1 in either period.

Table 1: Descriptive Statistics

	Mean	S.D.	Min.	Q1	Median	Q3	Max.
Panel A: Current Period (n=544)							
PARTHOUR	48.149	43.371	1.500	22.000	38.000	60.375	450.000
ASSIHOUR	30.595	30.014	1.071	8.643	22.269	40.000	215.667
PERF	1,521,602	1,307,277	-670,309	631,252	1,154,618	2,017,443	7,451,213
SIZE	2.786	1.024	0.693	2.197	2.639	3.258	6.581
DIV	1.107	0.351	0.174	0.852	1.129	1.379	1.972
GDP	6,394,819	655,044	5,502,802	6,094,146	6,673,939	7,252,757	7,252,757
Panel B: One-year-lagged Period (n=544)							
PERF	1,575,710	1,334,485	-670,309	656,056	1,219,408	2,115,922	7,114,911
SIZE	2.798	1.041	0.693	2.197	2.565	3.277	6.686
DIV	1.091	0.351	0.000	0.857	1.081	1.360	1.911
GDP	7,020,257	692,779	6,094,146	6,673,939	7,252,757	7,944,595	7,944,595
Panel C: Two-year-lagged Period (n=544)							
PERF	1,610,322	1,497,432	-830,166	635,088	1,195,145	2,123,632	11,106,571
SIZE	2.772	1.071	0.693	2.079	2.565	3.219	6.782
DIV	1.086	0.349	0.081	0.853	1.076	1.339	2.011
GDP	7,652,025	729,216	6,673,939	7,252,757	7,944,595	8,610,139	8,610,139
Panel D: Three-year-lagged Period (n=544)							
PERF	1,599,332	1,571,286	-830,166	576,918	1,192,095	2,048,463	11,106,571
SIZE	2.756	1.105	0.693	2.079	2.485	3.219	6.879
DIV	1.080	0.356	0.000	0.840	1.062	1.338	2.045
GDP	8,279,264	741,225	7,252,757	7,944,595	8,610,139	9,238,472	9,238,472

This table shows the information about descriptive statistics of variables in the empirical model with Panel A for current period observations. Panels B, C and D display descriptive statistics for observations in the one-year-lagged, two-year-lagged and three-year-lagged periods, respectively. PERF is expressed in NT dollars but GDP in million NT dollars. Number of observations is 544 in each panel. Variable definitions are as follows: PARTTRAIN=training taken by partners; ASSITRAIN= training taken by assistants; PERF=financial performance; SIZE=size of audit firms; DIV=degree of business diversification; GDP= economic indicator.

Table 2 lists the correlation coefficient matrix for both dependent and independent variables. All independent variables except economic indicator (GDP) are significantly correlated with dependent variable financial performance (PERF) for all periods either in Pearson or Spearman coefficients. Mean training hours taken by partners (PARTTRAIN) significantly correlates with that of assistants (ASSITRAIN). Further, some other independent variables also significantly correlate with each other. However, the correlation coefficients are less than 0.5, implying no serious multi-collinearity exists among the independent variables.

Table 2: Correlations Matrix

	PERF	*PARTHOUR*	*ASSIHOUR*	*SIZE*	*DIV*	*GDP*
Panel A: Current Period (n=544)						
PERF		0.141***	0.214***	0.558***	0.428***	0.031
PARTHOUR	0.259***		0.449***	-0.006	0.030	0.089**
ASSIHOUR	0.159***	0.432***		0.154***	0.141***	-0.003
SIZE	0.424***	0.012	0.096**		0.401***	0.018
DIV	0.407***	0.091**	0.137***	0.312***		-0.053
GDP	0.032	0.120***	0.006	0.015	-0.047	
Panel B: One-year-lagged Period (n=544)						
PERF		0.144***	0.245***	0.560***	0.420***	0.024
PARTHOUR	0.270***		0.456***	-0.019	0.042	0.091**
ASSIHOUR	0.196***	0.426***		0.178***	0.156***	-0.008
SIZE	0.441***	-0.007	0.114***		0.416***	-0.024
DIV	0.376***	0.107**	0.140***	0.311***		-0.057
GDP	0.006	0.122***	0.001	-0.048	-0.053	
Panel C: Two-year-lagged Period (n=544)						
PERF		0.095***	0.237***	0.596***	0.439***	0.013
PARTHOUR	0.224***		0.460***	-0.030	0.051	0.081*
ASSIHOUR	0.178***	0.426***		0.193***	0.174***	-0.002
SIZE	0.460***	-0.012	0.118***		0.425***	-0.031
MKS	0.704***	0.070	0.176***	0.880***	0.400***	0.004
DIV	0.371***	0.121***	0.164***	0.310***		-0.029
GDP	-0.031	0.107**	0.001	-0.061	-0.030	
Panel D: Three-year-lagged Period (n=544)						
PERF		0.080*	0.227***	0.620***	0.458***	-0.009
PARTHOUR	0.198***		0.453***	-0.032	0.007	0.092**
ASSIHOUR	0.173***	0.429***		0.185***	0.182***	0.007
SIZE	0.480***	-0.012	0.117***		0.438***	-0.001
DIV	0.377***	0.068	0.178***	0.331***		0.000
GDP	-0.045	0.125***	0.013	-0.025	-0.009	

Panels A, B, C and D of this table display the correlation matrices for current period, one-year-lagged, two-year-lagged and three-year-lagged periods observations, respectively. *, **, *** Denote two-tailed significance at the ten percent, five percent, and one percent levels. Number of observations is 544 in each panel. For each panel, Pearson coefficients locate in the upper triangle and Spearman coefficients in the lower triangle. Variables are defined in Table 1.

Regression Results

The year fixed effects regression results are presented in Table 3. The explanatory power of models, adjusted R^2, lies between 0.413 and o.499, which implies that our empirical models are well specified. All t-statistics of variable coefficient are calculated using White (1980) robust standard errors to correct for heteroscedasticity. As a check on the multi-collinearity among independent variables, we estimate the variance inflation factors (VIF). In econometrics, VIF greater than 10 implies serious multi-collinearity existing among independent variables. In the regression models of table 3, the variable VIFs are less than 3.418.

Panel A of Table 3 displays the regression results. The current period model, shown in Column (A), indicates a positive coefficient on training taken by partners (*PARTTRAIN*) (p < 0.01) but an insignificantly positive coefficient on training taken by assistants (*ASSITRAIN*). Column (B) lists results for the one-year-lagged period. As indicated, both coefficients on training taken by

partners (*PARTTRAIN*) and by assistants (*ASSITRAIN*) are significantly positive (p < 0.01 and p < 0.05). For the two-year-lagged period appeared in Column (C), coefficient on training taken by partners (*PARTTRAIN*) is positive but insignificant, however coefficient on training taken by assistants (*ASSITRAIN*) is significantly positive (p < 0.10). Finally, Column (D) reports the results for three-year-lagged period and shows that both coefficients on training taken by partners (*PARTTRAIN*) and by assistants (*ASSITRAIN*) are positive but insignificant.

In sum, training taken by partners has positive effects on financial performance in the current and one-year-lagged periods. The effects of training taken by assistants on financial performance exist in the one-year and two-year-lagged periods. In other words, there are immediate and lagged associations between training taken by partners and financial performance, which lends a support to the hypothesis 1. There is only lagged association between training taken by assistants and financial performance. Thus, hypothesis 2 is supported as well. In sum, the significant association lasts two years for either professional training taken by partners or by assistants. The financial performance effects of training taken by assistants delay one year but that of training taken by partners occurs immediately.

To examine the differences in degree of performance effects of professional training, this paper performs the Wald test on coefficients of training taken by partners (β_1) and by assistants (β_2). As shown in Panel B of Table 3, the coefficient differences between β_1 and β_2 are positive and significant (F-statistic= 10.225) in the current period. It means that the degree of performance effects of training taken by partners is higher than that of the training taken by assistants. Namely, partners' training contributes more to financial performance than does assistants' training. In the one-year-lagged period, the coefficient differences between β_1 and β_2 are positive but insignificant, implying no difference in the degree of performance effect between training taken by partners and by assistants. However, the coefficient differences between β_1 and β_2 are negative and significant (F-statistic= 5.445) in the two-year-lagged period. It denotes that the degree of performance effect of training taken by partners is less than that of training taken by assistants. Finally, in the three-year-lagged period, the coefficient differences between β_1 and β_2 are negative but insignificant, indicating no significant difference in degree of performance effects of professional training taken by partners and assistants. Taken together, the performance effects of professional training taken by partners differ from that of taken by assistants in different periods, echoing to the results reported in Panel A of Table 3.

With regard to the results of control variables, all variables but economic indicator (*GDP*) are positively associated with financial performance as hypothesized. Moreover, we conduct hierarchical regressions to verify the explanatory power incrementally contributed by our experimental variables in Table 3 (un-tabulated results here). Given the control variables in the regression model, experimental variables, training taken by partners (*PARTTRAIN*) and training taken by assistants (*ASSITRAIN*), additionally explain 43.21%, 43.21%, 43.21%, and 43.21%, variation in dependent variable for Columns (A), (B), (C), and (D). Results above demonstrate that professional training explains financial performance with both econometric and economic implications.

DISCUSSIONS

In this study, the evidence of positive association between training and performance informs practitioners that CPE contributes to audit firm financially. That is, audit firms as a whole are benefited from both partners' and assistants' training. However, there are differences in the period of financial performance effects of training taken by partners and assistants. The former's effects occur in the current and one-year-lagged periods but the latter's effects exist in the one-year-lagged and two-year-lagged periods. During the sampling period, on average, assistants account for 77.4% of employees in audit firms. Practitioners state that turnover of auditors is relatively high and that of entry level assistants is about 30%. Most entry level assistants send in their resignation and leave audit firms at the end of two-year employment contract. As entry level assistants constitute the major manpower of each audit engagement,

audit firms put in more resources on their professional training. Under the organization of employment, the evidence of one-year-delay performance effect of training taken by assistants conveys managerial implication to the practitioners in their employee recruitment policy. If the entry level assistants enter audit firms at the beginning of the current period and leave at the end of one-year-lagged period, the financial performance effects of training taken in the one-year-lagged period vanish. Accordingly, it is advisable for practitioners to lower the turnover of assistants, especially entry level assistants. To retain more experienced employees and in turn accumulate human capital benefit audit firms should deliberately take action to lowering the turnover of assistants.

Table 3: Regression Results of the Association between Training and Performance

Panel A Regression Results				
	(A) Current Std. Coef. (t-sta.)	**(B)** One-year-lagged Std.Coef. (t-sta.)	**(C)** Two-year-lagged Std. Coef. (t-sta.)	**(D)** Three-year-lagged Std. Coef. (t-sta.)
Variables(Expected Sign)				
Experimental variables				
PARTHOUR(?)	0.108***	0.100***	0.055	0.057
	(2.918)	(2.630)	(1.505)	(1.643)
ASSIHOUR(?)	0.049	0.076**	0.073*	0.058
	(1.308)	(1.979)	(1.960)	(1.631)
Control variables				
SIZE(+)	0.265***	0.278***	0.268***	0.273***
	(5.601)	(5.723)	(5.722)	(6.096)
DIV(+)	0.208***	0.185***	0.173***	0.182***
	(5.744)	(4.961)	(4.835)	(5.280)
GDP(?)	0.029	0.033	0.021	-0.018
	(0.870)	(0.997)	(0.664)	(-0.585)
YEAR (?)	(included)	(included)	(included)	(included)
Adjusted-R^2	0.418	0.413	0.463	0.499
F-statistics	65.973***	62.988***	77.198***	90.190***
Number of observation.	544	544	544	544
Panel B Wald Test(Expected Sign)				
β_1-β_2=0(+/-)	0.059***	0.024	-0.018***	-0.001
	(10.225)	(0.019)	(5.445)	(0.130)

$PERF_{t+\tau} = \beta_0 + \beta_1 PARTHOUR_t + \beta_2 ASSIHOUR_t + \beta_3 SIZE_{t+\tau} + \beta_4 DIV_{t+\tau} + \beta_5 GDP_{t+\tau} + \varepsilon_{t+\tau}$ *This table lists the regression results of the association between training and performance in Panel A. Panel B reports the Wald Test results for differences in the coefficient between β_1 and β_2. In the Panel A, regression results of current period, one-year-lagged, two-year-lagged and three-year-lagged periods observations are shown in the Columns (A),(B), (C),and (D). *, **, *** Denote two-tailed significance at the ten percent, five percent, and one percent levels, respectively. Number of observations is 544 in each column. Variables are defined in Table 1.*

Using the same data set as this paper, Chen et al. (2008) examined the association between CPE and financial performance of audit firms by cross-sectional pooled data from 1992 to 1995. They establish training hours of partners and assistants for big, medium, and small-sized audit firms. Except the training hours of assistants in big-sized audit firms, the association between CPE and financial performance is either insignificantly positive or negative. Their mixed results may be attributed to the lagged effects of training on financial performance identified by this paper.

From an outsider's perspective, d'Arcimoles (1997) examined the correlation between human resource policies and company performance using a longitudinal data of 61 large French companies during the period 1982-1989. Because of missing financial data, only 42 companies could be used for testing correlations between social data and the change in economic performance of a firm. Social data include employment, wages, training, and social climate. When efforts devoted to training and performance are considered at a given time, their associations are immediate and permanent. The associations seem to be delayed by 3 or 4 years when change in this effort is taken into consideration.

In contrast, this paper reports that the financial performance effects of partner and assistant training cease in the two-year and three-year-lagged periods, respectively. Namely, the effects of training on financial

performance lasts for two years only. Besides, the association between training of assistants and financial performance delays one year only. In terms of auditing industry, our results sound logical. First, when rendering services to clients, auditors have to keep pace with the progress of economy development. To do this, auditors should be equipped with the rapidly changing information and communication technology. Our two-year effects of training on financial performance seem to be more practical than the permanent effects identified by d'Arcimoles (1997). Second, partners are seasoned employees in audit firms. Accumulated with expertise and experience, partners are more apt at converting knowledge gained from training to field work, resulting in the immediate improvement of financial performance. High turnover rate and lacking much work experience and competency make assistants apply the knowledge from training to audit tasks difficult. This leads to the delayed effects of assistant training on financial performance. Thus, there are differences in the period of financial performance effects of training taken by partners and by assistants, which is a natural extension of d'Arcimoles (1997).

Reviewing the researches on training, Tharenou et al. (2007) concluded that training does not appear to be related to a firm's financial performance. The evidence of lagged association between training and financial performance obtained in this study can be used to disentangle the black box of mixed relation identified by prior studies.

CONCLUSION

In the aftermath of major financial reporting scandals such as Enron and WorldCom, both American PCAOB and the British Financial Reporting Council pay much attention to the quality control of audit firms. In the auditing industry, continuing professional education (CPE) is a mechanism of professional training with which to heighten the expertise and competency of auditors, audit quality, and in turn financial performance. By a panel data of annually selected 136 audit firms, this paper investigates the lagged effects of CPE on financial performance of audit firms in Taiwan.

After controlling other factors affecting financial performance, empirical results indicate that training taken by partners has significantly positive effects on financial performance in the current and one-year-lagged periods, while training taken by assistants has positive effects in the one-year lagged and two-year-lagged periods. That is, financial performance effects of training last two years. Effects of training taken by partners occur immediately but that of training taken by assistants delay one year. Next, the degree of financial performance effects of training taken by partners is higher than that of training taken by assistants in the current period but lower in the two-year-lagged period.

In practice, after acquiring the academic qualifications in accounting, most auditors enter their careers as assistants in audit firms. They continue to learn and gain expertise through learning by doing. Learning by doing, in effect, is another critical type of professional training and is also referred to as on-the-job training. It is an important link in the professional training chain and a determinant of financial performance in audit firms. To examine the association between on-the-job training and performance (either financial or non-financial) is a promising avenue for future study.

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BIOGRAPHY

Yahn-Shir Chen is a Professor of the Department of Accounting at the National Yunlin University of Science and Technology. His research appears in journals such as The International Journal of Human Resources Management (IJHRM), The International Journal of Business and Finance Research (IJBFR), Asia-Pacific Journal of Accounting & Economics (APJAE), and Economics Bulletin. He can be reached at No. 123, Sec. 3, University Rd., Douliou, Yunlin County, 64002, Taiwan, and chenys@yuntech.edu.tw.

Joseph Hsu holds a Ph.D. in accounting from National Yunlin University of Science and Technology, Taiwan. His main interest of research is financial accounting and auditing. He can be reached at g9520810@yuntech.edu.tw.

Mei-Ting Huang is a Ph.D. candidate of the Department of Accounting at the National Yunlin University of Science and Technology. She can be reached at No. 123, Sec. 3, University Rd., Douliou, Yunlin County, 64002, Taiwan, and g9620806@yuntech.edu.tw.

MANAGERIAL INCENTIVES FOR EARNINGS MANAGEMENT AMONG LISTED FIRMS: EVIDENCE FROM FIJI

Prena Rani, The University of the South Pacific
Fazeena Fazneen Hussain, The University of the South Pacific
Priyashni Vandana Chand, The University of the South Pacific

ABSTRACT

High profile corporate collapses of the past decade have undermined the integrity of financial reporting. Earnings management has been of growing concern to many academics, practitioners and regulators. Despite an enormous amount of regulation and standards governing the financial reporting process, earnings management practices are accelerating at an alarming rate in organizations today. Fiji, like many other developed countries, has had instances of financial reporting failures. One does not need to look further than the multimillion-dollar saga involving the state owned Bank, the National Bank of Fiji, which was the largest known financial scandal in the history of Fiji and the Pacific Islands. This suggests that even emerging economies like Fiji were long ago, introduced to earnings management practices. However, this has not been apparent. Most studies on managerial incentives for earnings management, have been conducted in the USA, UK, Canada, Australia and New Zealand. Very few studies took place in emerging economies like Fiji. This study uses a questionnaire-based approach to examine managerial incentives for earnings management among listed firms in Fiji, highlighting the most prevalent incentive.

INTRODUCTION

R ecent corporate collapses such as Enron, WorldCom, HIH Insurance and the demise of Arthur Anderson have undermined the integrity of financial reporting. Earnings management also known as creative accounting, income/earnings smoothing, financial engineering and cosmetic accounting has been a growing concern for academics, practitioners and regulators for quite some time. It has also become a central issue to accounting research. In the past, there have been instances of financial reporting failures in Fiji, such as the collapse of the state-owned bank, the National Bank of Fiji (NBF). The NBF's case was the largest known financial scandal in the history of Fiji and the Pacific Islands (Grynberg et al., 2002). The failure of this magnitude resulted from improper accounting practices, corruption and mismanagement. Despite regulations and monitoring by the Reserve Bank of Fiji, the Auditor General and the Ministry of Finance, the National Bank of Fiji collapsed. This collapse emphasizes the need for more policies that require adherence to good accounting practices and financial disclosures, sound corporate governance and robust banking supervision (Singh, 2008). The NBF case suggests that emerging economies, like Fiji, have been introduced to earnings management practices long ago. However, this introduction was not apparent.

Corporate collapses and prior studies (Healy, 1985; McNichols and Wilson, 1988; DeFond and Jiambalvo, 1994; Nelson et al., 2002) have strongly suggested that earnings management is becoming a common business practice in most companies today. This justifies the need to study earnings management practices in our economies. Such practices not only have an adverse impact on financial and investment decisions but also obscure a firm's intrinsic value. More importantly, we must also consider incentives that give rise to such practices.

A large number of studies (DeAngelo, 1986; Cahan, 1992; Beneish, 2001; Singh, 2008) have been conducted to determining the managerial incentives for earnings management, most of which have focused on private sectors in developed economies such as USA, UK, Canada, Australia and New Zealand. In emerging economies, such studies are rare and hardly pursued. Due to the presence of institutional and regulatory differences between developed and emerging economies, it is not only difficult but also futile to generalize research results from studies in developed to emerging economies.

Singh (2008) reveals that accounting standards in Fiji do not have a legal backing and has a weak regulatory environment that permits high levels of manipulation. Our research contributes to earnings management literature by examining provisions in management policies and practices (for example, management compensation policies, forecasts, etc) of listed companies that actually create incentives for earnings management. Additionally, we intend to identify the most prevalent incentive for earnings management amongst listed firms in Fiji.

These findings will provide FIA and other standard setters in emerging economies evidence on the most common driver for earnings management, which should assist them in formulating relevant financial reporting and corporate governance policies to ensure that management makes adequate disclosures. It should also assist users especially investors and financiers while reviewing annual reports to be cautious if the firm concerned displays characteristics that are aligned with the most prevalent incentives for earnings management. Moreover, our findings would compel auditors to be more vigilant in the auditing process if their clients have policies and practices that would allow such incentives to take effect.

The paper comprises of five sections. Section 1 summarizes the literature review on the incentives for earnings management. Section 2 outlines the research methodology adopted in the study and Section 3 analyses and discusses the results of the study. Section 4 outlines the conclusion and limitations.

LITERATURE REVIEW

What is Earnings Management?

According to Healy and Wahlen (1999), "earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported outcomes." Levitt (1998) defines "earnings management as a gray area where the accounting is being perverted, where managers are cutting corners; and, where earnings reports reflect the desires of management rather than the underlying financial performance of the company." Schipper (1989) defines earnings management as a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain. Until today, there is no single universally accepted definition of earnings management. A lack of consensus on the definition of earnings management implies differing interpretations of empirical evidence in studies that seek to detect earnings management, or to provide evidence of earnings management incentives (Beneish, 2001).

With a substantial amount of regulation and standards governing the reporting process, how is it that the practice of aggressive earnings management is accelerating at an alarming rate in organizations today? The financial reporting process governed by GAAP allows managers with some level of flexibility in preparing their reports to ensure that the reports reflect relevant and reliable information. Although, flexibility in financial reporting grants managers with the freedom to choose accounting policies and procedures, managers tend to misuse this freedom in altering the reported earnings in order to receive bonuses, avoid violation of debt covenants and so forth. Leaving GAAP aside, our study attempts to discover if organizations have provisions in their management contracts and firm policies, which give rise

to earnings management practices. We are undertaking an in-depth study of the policies of the firm in respect to earnings management incentives.

Why does Earnings Management occur?

Academics often use agency theory in describing earnings management behavior. Agency theory is simply the agency relationship that exists between management and shareholders. Jensen and Meckling (1976) define agency relationship as "...a contract relationship where one or more persons (the principal) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent" (p. 6).   If both the principal and agent are utility maximisers, it is reasonable to believe the agent will not always act in the best interests of the principal. This divergence in interest of the two parties results in agency problems.   It is apparent that such problems arise because of asymmetric information between the agent (management) and the principal (shareholder and other stakeholders).   Management possesses a more complete set of organizational information relative to current and potential stakeholders as management not only makes day to day business decisions but also controls daily business operations.   Therefore, information asymmetry arises when management does not communicate all information, resulting in conflict between the privileged agents (management) and the remote body of stakeholders.

Richardson (2000) found a positive relationship exists between the levels of information asymmetry and earnings management and hence provided empirical evidence suggesting that information asymmetry is a necessary condition for earnings management. Consequently, increasing levels of information asymmetry makes it difficult for stakeholders to see through earnings manipulation as they lack the necessary resources, incentives or access to relevant information that would ensure effective monitoring of management actions, decisions and choices.   Therefore, agency theory provides a solid framework for understanding earnings management as it provides agents with economic incentives to manipulate financial results.

Managerial Compensation Incentives

One of the most common incentives for managing earnings is the manager's remuneration package. In most businesses, managers are entitled to cash bonuses or share options upon achieving predetermined reported earnings. It is quite common for management employment contracts to include accounting based constraints that determine compensation opportunities, such as annual salary increases, bonus, performance evaluation, and reaching targets set in compensation contracts (Singh, 2008).

Healy (1985), showed how upper and lower bounds on executive bonus packages encourage managers to make discretionary accounting accruals in a strategic manner. Hence, compensation contracts specifying minimum levels of profits to grant bonuses provide incentives for income increasing or income decreasing earnings management depending on the actual level of profits attained in a particular period. Healy (1985) used accruals and changes in accounting procedures and found that managers choose income-increasing accruals as long as profits fall within the minimum and maximum boundaries. However, managers also tend to move towards income decreasing accruals if earnings are above the maximum level. Gaver et al., (1995) extended Healy's study by examining the relationship between discretionary accruals and bonus plan bounds using a sample of 102 firms for the period 1980-1990. They found that when earnings before discretionary accruals are below the lower bound, managers select income increasing discretionary accruals (and vice versa). Gaver et al., (1995) thus believe that their results are more consistent with income smoothing hypothesis than with Healy's bonus hypothesis.

Borrowing Cost Effects

The firm's closeness to violating its debt covenant provides its management with another incentive to engage in earnings management. Mulford and Comiskey (2002) describe debt covenants as stipulations included in debt agreements designed to monitor corporate performance. For instance, a lender might instruct that a certain value for an accounting ratio be maintained or impose limits to investing and financing activities. If the borrower violates the debt covenant, the lender might increase the interest rate, requiring additional financial security, or calling for immediate repayment. Therefore, debt covenants provide incentives for earnings management either to reduce the restrictiveness of accounting based constraints in debt agreements or to avoid the costs of covenant violations (Beneish, 2001). According to Christie (1990), the closer a firm is to violating its debt covenant restrictions; the more likely it is for its managers to adopt income increasing accounting choices.

Additionally, DeFond and Jiambalvo (1994) suggest that managers of firms reporting debt covenant violations in their annual report adopt income increasing accounting choices in the years prior to the violation. Sweeney (1994) also finds that covenant violators manipulate earnings, but in the year(s) following rather than prior to the violation, indicating that earnings are not managed specifically to avoid violating a lending contract but to reduce the likelihood of violating them in the future. However, Healy and Palepu (1990) find no such evidence of earnings management in their study of firms with binding debt covenants.

Dichev and Skinner (2002) used a database of private lending agreements for USA firms in order to provide large sample tests of the debt covenant hypothesis. They found an unusually small number of loans with financial measures just below covenant thresholds and an unusually large number of loans with financial measures at or just above covenant threshold. Therefore, they provide solid evidence that managers take actions either to reduce the restrictiveness of accounting based constraints in debt agreements or to avoid the costs of covenant violations.

Equity Offerings

Share issues provide a direct incentive for management to engage in earnings management as higher earnings would result in increased share prices implying an increase in market valuation and a reduction in cost of capital. Dechow and Skinner (2000) suggests that if managers are able to increase reported earnings without detection, they can improve the terms of the public offer. In this way, they are providing direct monetary benefits to themselves as well as their firm. Studies examining equity offerings as an incentive for earnings management usually test whether managers manipulate earnings in periods prior to initial public offers (IPO) and seasoned equity offerings. IPOs are highly susceptible to earnings management because of the existence of asymmetric information between the investors and IPO issuers. As there is no previous market price for shares, management has an opportunity to manipulate earnings to increase its introductory price.

Teoh et al., (1998) examine the relationship between underperformance of IPOs in subsequent periods and earnings management by using a sample of 1649 IPO firms in USA. Their study reveals that issuers with unusually high accruals in the IPO year experience poor stock returns in the three years thereafter. Their study concludes that the underperformance of firms in years after IPO is largely due to earnings management in the year of IPO. Likewise, Rangan (1998) provides evidence of earnings management at the time of seasoned equity offerings. His study disseminates that at the time of the issue, firms report unusually high earnings due to unusually high accruals. However, in subsequent years, firms report poor earnings performance. Both the studies indicate that a strong association exists between the extent of earnings management and subsequent stock returns.

Management Buyout

In case of a management buyout, there is downwards earnings management. In such a situation, management faces a conflict as they have a fiduciary duty to the shareholders to get the best price for the firm and as buyers, managers would not want to pay a high price. Hence, managers have an incentive to reduce reported earnings prior to the buyout. DeAngelo (1986) claim that the management of buyout firms would understate earnings, as information about the firm's earnings play an important role in the valuation of management buyouts. She uses a sample of 64 New York and American Stock Exchange companies, whose managers proposed to buyout the firm, over the period 1973-1982. However, DeAngelo (1986) finds little evidence that managers of buyout firms systematically select accounting accruals to understate reported income in periods before the buyout. Perry and William (1994) examined discretionary accruals of a sample of 175 management buyouts during 1981- 88. Their findings provide convincing evidence of income decreasing earnings management prior to a buyout.

Meeting Targets/Expectations

Financial analysts or management usually forecast firms' expected earnings prior to year-end. Degeorge et al., (1999) tries to find out whether firms manage earnings in order to meet analyst's earnings forecasts. Their study reveals that firms report abnormally high earnings just to meet or exceed the analyst's forecast. Kasznik (1999) examined whether managers who issue annual earnings forecasts practice earnings management to meet their forecasts. His study of 499 firm years (366 firms) with management earnings forecast issued between 1987 and 1991, reveals that positive discretionary accruals was used to manage earnings upwards when earnings were below management forecast.

Reduce (Increase) Regulatory Cost (Benefits)

Regulatory concerns can also induce management to engage in earnings management. Usually firms that are vulnerable to anti-trust investigations or other adverse political consequences or firms seeking government subsidy have enormous incentives to manage earnings to appear less profitable. Jones (1991) examines whether regulatory scrutiny increases the likelihood of earnings management by firms benefiting from import relief assistance in form of tariff increases or quota reductions. His study provides evidence of firms practicing income decreasing earnings management in order to qualify for import relief assistance.

Additionally, Cahan (1992) uses a sample of 48 firms to investigate the effect of monopoly related antitrust investigations on firms' reported earnings from 1970-1998. His findings suggest that firms under scrutiny reported income-decreasing discretionary accruals in the investigation years.

Finally, we have selected these incentives for our study, as these are strong incentives and well established in literature. While the above practices are important incentives driving earnings management among firms, numerous other factors give rise to the issue that may be unexplored by academics. Factors that deter earnings management practices among firms are the firm's internal governance structure, previous accounting decisions made by the firm that limit future discretionary choices and the costs imposed on the entity should earnings management be revealed (Becker et al., 1998).

METHODOLOGY

In this paper, we examine the practices and policies of firms that give rise to earnings management. In order to obtain information about firm policies and practices that is not publicly available, we emailed questionnaires to CEO's of listed companies. In some cases, where the CEO was unavailable, we requested an interview with the company's CFO. The respondents completed the questionnaire in the

presence of the researcher. Researchers were present in case the respondents needed clarification about any issues.

In the questionnaire, we had closed-ended questions, whereby the researcher provided a suitable list of responses. This type of questionnaires produces quantitative data. Closed questions provide little or no scope for the researcher to misinterpret the meanings of answers. For example, if an answer is restricted to "Yes / No / Don't Know" it is easy for the researcher to understand the exact intentions of the respondent. However, it also does not give an in-depth picture of the study, as it is possible that respondents had some other answers to the research questions. That is another reason researchers were present before the respondents so they could discuss and note down any other important points that came to attention.

Our intended group of recipients for the questionnaire was the management team from each listed company. This is because we felt that a member of the management team would be the best person to answer the questionnaire as he/she has access to inside company information. Managers are in-charge of the day-to-day operations of the company and therefore possess more knowledge about their management policies and practices.

There are sixteen companies listed on the South Pacific Stock Exchange. This was our initial sample for the study. The sample was reduced to 14 because one of the listed firms was a financial institution and consistent with prior studies financial institutions were excluded due to their unique working capital structures. Another listed company was unavailable for interview and failed to return our questionnaire despite several calls and emails.

RESULTS AND DISCUSSIONS

Management Compensation Incentives

After analyzing information obtained from questionnaires, management compensation is the most common incentive for earnings management in listed companies in Fiji. In order to enhance performance, listed companies have in place performance-based contracts for senior managers. In the entire sample, members of the management team are entitled to other incentives apart from normal salary, for instance, bonuses, annual salary increments, share options etc. These additional incentives are based on certain performance evaluation criteria. Generally, Human Resources Department (HR), Board of Directors (BOD), senior executives or remuneration/compensation committee, set the criteria for rewards or remuneration. BOD and other senior executives set the KPI's for the management in 86% of the listed companies. In the other 14%, HR sets the criteria for rewards.

The results in Table 1 show all respondents revealed that performance evaluation criteria for rewards are present in the management contracts. Sales, gross profit, cost, share price and customer listing are the basis on which management receives additional rewards. The achievement of this is significantly important to managers. Profit and sales was the most common benchmark for rewards in the management compensation policies amongst all listed companies. Therefore, if management remuneration is dependent upon entity profit or sales for the period, managers may manipulate firm earnings so they can reach their sales/profit targets and get additional rewards.

Further, all respondents stated that their respective supervisors monitor management performance on a monthly basis. Criterion such as comparative data, non-financial measures and variance analysis are used when monitoring management performance. According to 21% of respondents, if managers fail to perform, they face severe consequences, such as lay-off, non-renewal of contract and demotion. For the remaining 79% firms, there are no severe consequences, except that they will not receive any additional

benefits. A respondent stated that they have implemented a performance management system in their firm whereby they ensure that those employees who do not meet their KPI's or performance expectations undergo additional training so that they do their tasks well.

Table 1: Summary Statistics for Managerial Compensation Incentive

Managerial compensation incentive issues examined	Number of firms (/14)
WHO SETS THE CRITERIA FOR REWARDS?	
Human Resources	2
Board of Directors	8
Senior executives	4
Remuneration committee	0
FACTORS LIKELY TO HAVE AN IMPACT ON THE ACHIEVEMENT OF REWARDS	
Sales	11
Cost	9
Profit	14
Share price	9
Customer listing	9
Ratios	1
CRITERIA USED FOR MONITORING MANAGEMENT PERFORMANCE	
Comparative Data	14
Nonfinancial Measures	7
Variance Analysis	7
CONSEQUENCES FOR UNFAVORABLE PERFORMANCE	
Non renewal of contract	1
Demotion	1
Non entitlement of benefits	0
Decline in work responsibility	1

The figures represent the frequency of responses for each option under the respective criterion.

Borrowing Cost Effects

Table 2 presents the results on borrowing cost effects. Banks and other financial institutions impose debt covenants on the firm's loan agreements. From our analysis, it is evident that debt financiers have imposed some form of debt covenant on 57% of the listed firm's loan agreements. The stipulations presented in the loan agreement of these firms are in the form of: restrictions on levels of financing and investing activities that the firm can undertake; maintaining debt ratios at a specific level; and restrictions on future loan approvals. To avoid violation of debt covenants, managers have an incentive to increase reported earnings. Results disseminate that 43% of the listed firms did not have a loan agreement with anyone.

None of the respondents admitted to violating any debt covenants. If any of these firms were on the verge of violating their debt covenants, they would discuss the issue with their debt financiers to identify other possible means of making up for the violation. If in the future, if firms violate their debt covenants, the likely penalties would be immediate repayment, a chance to improve performance or additional cost incurred to restructure a loan.

Equity Offerings and Management Buyouts

Equity offerings are probably the least common incentive for earnings management in Fiji. This is because of the highly inactive share market in Fiji. There is little share trading taking place. There has not been an instance of management buyout in any of the listed Fiji firms. However, we cannot rule out

the possibility as an incentive in the near future. Usually, management buyout is a method for privatizing state owned entities. A management buyout attempt example in Fiji is the case of Rewa Rice Limited in 1999 when the government was planning to sell off its shares. However, management's offer was declined.

Table 2: Summary Statistics for Borrowing Cost Incentive

Borrowing cost incentive issues examined	Number of firms (/14)
HAVE DEBT FINANCIERS IMPOSED ANY DEBT COVENANTS?	8
STIPULATION PRESENT IN THE LOAN AGREEMENT	
Restrictions on level of financing and investing activities	1
Debt ratios to be maintained at a specific level	6
Restrictions on future loan approvals	1
IF FIRM IS ON THE VERGE OF VIOLATING DEBT COVENANT	
Discuss with debt financier	8
Do anything to not violate covenant	0
Do nothing	0
PENALTIES IN THE CASE OF DEBT COVENANT VIOLATION	
Immediate repayment	1
Cease of loan	0
Chance to improve performance	6
Negotiations to make it work for both parties	1

The figures represent the frequency of responses for each option under the respective criterion.

Meet/Beat Targets/Expectations

Fiji, does not have analysts who forecast or make predictions about firm performance. Therefore, our results solely focus on internal forecasts. In all the listed firms, Board of Directors, CEO's and managers set targets for various divisions in the company. Various factors such as past trends, non-financial measures, competition levels, demand for products/services and current economic conditions are all considered when setting company targets. "Economic conditions such as devaluation and political upheavals in Fiji in the past have led to non-achievement of management forecasts," commented one of the respondents. With the presence of unpredictable events such as these, managers may not be able to meet their targeted expectations and this may lead to managing earnings upwards.

Except for one firm, all other firms experienced significant variances when actual performance was compared with forecasted trends. Most respondents said the variances were due to economic conditions in Fiji such as the military coup, devaluation and so forth. There could be dire consequences for non-achievement of forecasts by companies such as a reduction in management remuneration and a decline in share price if a particular company continually does not meet their targeted company expectations.

One respondent also stated that if management does not meet their forecasted earnings, and they do not have a valid reason, their employment is at risk in the company. This means that to save their employment, the managers might have to engage in earnings management.

Reduce (Increase) Regulatory Costs (Benefits)

A number of firms receive some form of assistance from the government such as grants or subsidies. One respondent stated that they receive concessionary rates of duty on capital investments. Another stated they receive tax exemptions on local production of wood chips. One respondent stated that they had tax exemptions upon listing in 2000, however this has expired and they no longer receive any assistance from the government. The results show 79% of listed firms did not receive any form of assistance. This

indicates that only a few listed firms would be inclined to report conservative earnings so that they can qualify for subsidies and other grants from government.

Table 3: Summary Statistics for Meet/Beat Targets Incentive

Meet/Beat targets incentive issues examined	Number of firms (/14)
WHO SETS TARGETS FOR VARIOUS COMPANY DIVISIONS	
Managers themselves	12
BOD	6
CEO	4
Analyst	0
WHAT FACTORS TO CONSIDER WHEN SETTING COMPANY TARGETS	
Past trends	14
Nonfinancial measures	11
Competition levels	14
Demand for products	11
Current economic conditions	14
DO PAST TRENDS INDICATE SIGNIFICANT ACTUAL/FORECAST VARIANCE	13
CONSEQUENCE FOR NON ACHIEVEMENT OF FORECASTS	
Decline in share price	5
Reduction in management remuneration	1
Reduction in market share	6
Damage to reputation	2

The figures represent the frequency of responses for each option under the respective criterion.

Apart from major incentives discussed in the literature, there could be other incentives driving earnings management amongst listed firms. One of these could be for the purposes of *job security*. Managers are under pressure to perform; otherwise, they are at risk of losing their jobs. For example, in Fiji, the management of Airports Fiji Limited and Fiji Electricity Authority were once fired because of poor performance. In order to retain their jobs, managers have the incentive to manipulate earnings.

CONCLUSION

Recent corporate collapses and prior studies have indicated that earnings management is a pervasive phenomenon. Fiji's weak regulatory environment makes it subject to high level of earnings manipulation therefore it becomes important to study earnings management practices in emerging economies like Fiji.

The paper contributes to literature by examining provisions in management policies and practices that drive earnings management. Our analysis revealed that common incentives for earnings management in Fiji are management compensation incentive, borrowing cost incentive, incentive to meet/beat targets/expectations and increase (decrease) regulatory benefits (costs). Management compensation is the most prevalent incentive for earnings management in Fiji. The least common incentives were equity offerings due to highly inactive share market; and management buyout as this situation is rare among listed firms to date.

There could be other incentives for earnings management that has not been addressed in this research. We have attempted to examine all the strong incentives that drive earnings management and were prevalent in prior literature. Moreover, the sample size of 14 would be quite small to generalize these research findings to all emerging economies. Further research could focus on private and public sector companies in Fiji.

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BIOGRAPHY

Prena Rani is a teaching assistant at the University of the South Pacific. She can be contacted on rani_p@usp.ac.fj

Fazeena Hussain is also a teaching assistant at the University of the South Pacific. She can be contacted on hussain_f@usp.ac.fj

Priyashni Chand is also a teaching assistant at the University of the South Pacific. She can be contacted on chand_pi@usp.ac.fj

GOVERNMENT SPENDING AND NATIONAL INCOME NEXUS FOR NIGERIA

Anthony Enisan Akinlo, Obafemi Awolowo University, Ile-Ife, Nigeria

ABSTRACT

The paper investigates Wagner's law, the nexus between government spending and national income in Nigeria over the period 1961-2009 in multivariate framework incorporating population size variable. The results provide support for Wagner's law in Nigeria. Moreover, there is a long-run relation among real government spending, real GDP and population size. A unidirectional causality runs from both real gdp and gdp per capita to government spending implying that expenditure rationalization policies may not necessarily have adverse effect economic growth. Finally, population has significant positive impact on government spending.

INTRODUCTION

The relationship between public expenditure and national income has been debated quite extensively in the literature, yet the direction of the causality relationship remains unresolved. The debate has centered on whether public expenditure causes national income or national income causes public expenditure; or whether a two-way relationship exists. From a policy point of view, the direction of causality between these variables has important implications. As an illustration, a finding that supports positive unidirectional causality running from national income to public expenditure is a strong justification for government expenditure rationalization or cut for this finding suggest that the country is not dependent on public expenditure for growth and development. On the other hand, if unidirectional causality runs from public expenditure to national income then reducing government expenditure could precipitate a fall in income. What this implies is that the country's growth is driven by public expenditure and any negative shock leading to lower government expenditure will adversely impact national income.

As shown in figure 1, both government spending and gross domestic product increased sharply in Nigeria between 1961 and 2009. Government expenditure increased from ₦163.9 million in 1961 to ₦903.9 million in 1970. In 1980, the total government spending increased to ₦14,968.5 million. This figure increased sharply from ₦701,059.4 million in 2000 to ₦3,456,925.0 million in 2009. In the same way, gross domestic product used as proxy for national income experienced significant increase over the period 1961-2009. It increased from ₦2,361.2 in 1961 to ₦5,281.1 million in 1970. The figure increased to ₦49,632.3 million in 1980. In 1987, the total GDP was ₦105,222.8 million. However, the figure increased sharply to ₦4,582,127.0 million in 2000 and further to ₦ 24,712,670.0 million in 2009.

However, government has embarked on several reforms to reduce the huge government spending over the years. Government has announced several expenditure reduction measures with a view to reducing government fiscal deficits while encouraging increased private spending. To fully understand the implication of such policies, it is imperative to understand the relationship between government expenditure and economic growth. The purpose of this paper is to investigate the causal relationship between government spending and economic growth for Nigeria. This empirical exercise is important for Nigeria because it will allow us to deduce

Figure 1: Government Spending (ESP) and Gross Domestic Product (GDP)1961-2009
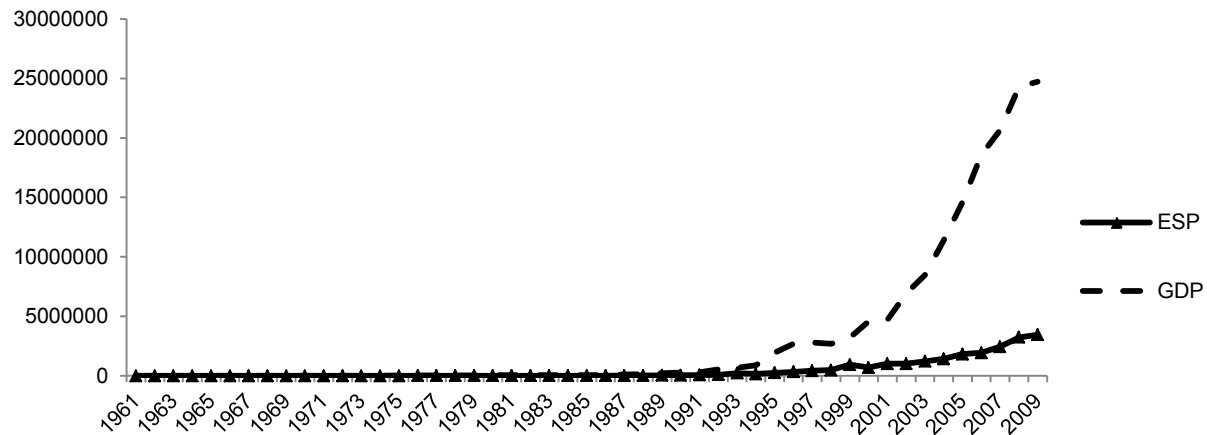
This figure shows the aggregate government spending and gross domestic product from 1961 through 2009.

whether or not the Wagner's law, that is, the long-run tendency for public expenditure to grow relative to some national aggregates such as the national income, holds in the country. On the basis of this knowledge, we will be able to recommend whether or not the policy of rolling back the government through reduced government expenditure is a viable option for the country.

The remainder of this paper is organized as follows: In section 2, we provide a brief overview of previous empirical studies on nexus between government spending and national income. Section 3 describes the methodology and data employed in estimation. Section 4 estimates and presents empirical results of the study. Section 5 provides the conclusion.

LITERATURE REVIEW

The relationship between government spending and national income has important policy implications, as explained earlier. Hence, several studies have attempted to establish the relationship between government spending and national income. A general observation from these studies is that the results from both country-specific-time-series analyses and cross-country studies with reference to Wagner's law are so diverge and conflicting that they virtually constrain any valid conclusion with acceptable degree of generality to be made. The purpose of this section is to provide a brief overview of the findings of related studies on the relationship between government spending and income.

Henrenkson (1993) tested the Wagner's law for Sweden, using data spanning 1861 and 1990.He found that real government size and per capita income were not co-integrated implying that no long run relationship could be established for Sweden and hence that it was unlikely that growth is real income per se caused the growth of government. Bohl (1996) tested for the Wagner's law on G7 countries employing post-world II data. He found among other things, no evidence of a long run relationship between the variables in G7 countries except for Canada and the UK. The granger causality test for Canada and UK showed that real per capita income granger caused government size. Payne and Ewing (1996) study on a sample of 22 countries provided evidence in support of the Wagner's law in Australia, Columbia, Germany, Malaysia, Pakistan, and the Philippines. However, bi-directional causality was found for India, Peru, Sweden, Switzerland, UK, US and Venezuela, while granger causality was not found in Chile, Finland, Greece, Honduras, Italy and Japan.

Islam (2001) reported evidence in support of the Wagner's law for US during the period 1929-1996 applying co-integration and exogeneity tests. In the same way, Sideris (2007) provided support for Wagner's law for Greece during the period 1833-1938. However, Chletsos and Kollias (1997) found that Wagner's law was valid only in the case of military expenditure in their analysis based on disaggregated Greek data over the period 1958-1993.

Demirbas (1999) examined the Wagner's law for Turkey using Engle and Granger co-integration and granger causality test. Their study found no evidence of causality in either direction. However, study by Oxley (1994) for Britain for the period 1870-1993 provided clear support for Wagner's law just as Courakis et al (1993) found support for the hypothesis for Mexico during the period 1925-1976.

The study by Ram (1987) for 115 countries showed that 60% of the countries analyzed individually provided support for Wagner's law whereas the cross-section analysis on the whole, rejected the hypothesis. However, Kolluri et al (2000) provided evidence in support of the Wagner's hypothesis for the G7 countries over the period 1960-1993 which was also supported by Chang (2002). The same applies for Loizides and Vamvoukas (2005) who provided support for Wagner's law in the short run for UK, Ireland and Greece. The study by Kalam and Aziz (2009) for Bangladesh over the period 1976-2007 provided support for the Wagner's hypothesis. Also, the results showed that both real GDP and GDP per capita granger caused total government expenditure; while population size served as stimulus for public spending both in the short-and-long run.

Similar studies in Sub-Saharan Africa include Ansari et al (1997) and Olomola (2004). The former found support for Wagner's hypothesis for Ghana but not in Kenya and South Africa; the latter study found clear support for Wagner's hypothesis in Nigeria over the period 1970-2001. Moreover, Olomola (2004) showed that economic growth granger-caused public expenditure, both in the short and long run.

METHODOLOGY

Model Specification

In analyzing the relationship between government spending and national income, we followed the approaches of Courakis et al (1993), Kalam and Aziz (2009) among others; by specifying a function in which government spending depends on national income. Formally stated:

$$esp_t = f(gdp_t, e_t) \tag{1}$$

However, incorporating population (pop) as argument and given a specific functional form, eq. (1) can be stated as:

$$esp_t = f(gdp_t, pop_t, e_t) = e_t gdp_t^{\alpha} pop_t^{\beta} \tag{2}$$

where esp_t is real government spending at time t, gdp_t is the national income measured as real gross domestic product at time t, e_t is error term assumed to constant, α and β are parameters to be estimated. It is assumed that the sum of α and β are equal to one, meaning that $\beta = 1 - \alpha$. Therefore, taking the logarithms of Eq. (2) we obtain:

$$lnesp_t = lne_t + \alpha lngdp_t + (1-\alpha)lnpop_t \tag{3}$$

Equivalently, eq. (3) can be written as:

$$lnesp_t = \xi_t + \alpha lngdp_t + (1-\alpha)lnpop_t \tag{4}$$

In the same way, dividing eq. (4) by pop_t it can be expressed either as:

$$ln(esp/pop)_t = \xi_t + \alpha ln(gdp/pop)_t \tag{5}$$

or

$$ln(esp/gdp)_t = \xi_t + (\alpha-1)ln(gdp/pop)_t \tag{6}$$

where $(esp/pop)_t$ is real per capita government spending, $(esp/gdp)_t$ is the share of real government spending in the real gross domestic product, $(gdp/pop)t$ is real per capita gdp and other variables are as earlier defined.

To provide support for the Wagner's hypothesis, the elasticity of real gdp coefficient must be greater than one (i.e. $\alpha > 1$) and the causal relation must flow from gdp to government spending in eq.(3). However, in eqs. (4) and (5), Wagner's hypothesis is established if $\alpha > 1$ and $(\alpha-1) > 0$ and the casual flows from (gdp/pop) to either (esp/pop) or (esp/gdp).

In estimation, Engle-Granger (1987) two-step procedure was adopted and to examine the short run relationships among the variables, the Granger (1969) causality test was adopted. However, for robustness check, Johanse-Juselius (1990) cointegration approach was equally adopted.

Data Measurement, Description and Sources

The data are annual Nigerian observations on real gross domestic product (GDP), population size and real government spending. Annual data on all the variables are available from 1061 to 2009. They were obtained from the Central Bank of Nigeria, Annual Statistical Bulletin (2009). All data are expressed in logarithm. Real GDP series are obtained by deflating the nominal GDP by GDP deflator. Likewise, the nominal government spending expressed in millions of domestic currency were deflated by consumer price index to obtain the real values. The descriptive statistics of the variables are as shown in Table 1. The descriptive statistics of the data series are as shown in Table 1. Table 1 shows that all the series display a high level of consistency as their mean and median values are perpetually within the maximum and minimum values of the series.

Table 1: The Descriptive Statistics of the Variables

	ESP	GDP	POP	ESP/POP	GDP/POP	ESP/GDP
Mean	440561	3184556	87.08	3260.366	23235.87	0.173
Median	14968.5	67908.6	80.70	195.466	833.096	0.171
Maximum	3456925	24712670	153.90	22462.15	162953.2	0.341
Minimum	163.9	2361.2	41.80	3.913	53.769	0.064
Std.Dev.	838189.2	6486252	33.63	5748.032	44479.14	0.067
Skewness	2.250	2.283	0.365	2.005	2.119	0.427
Kurtosis	7.41	7.067	1.866	6.209	6.289	2.716
Jarque-Bera	81.06***	76.329***	3.717	53.852***	58.789***	1.657
Probability	0.00	0.00	0.156	0.00	0.00	0.437
Sum	21587491	1.56E+08	4266.75	159757.9	1138558	8.497
Sum Sq. Deviations	3.37E+13	2.02E+15	54280.73	1.54E+09	9.50E+10	0.217
Observations	49	49	49	49	49	49

Table 1shows the results from descriptive statistics and the Jarque-Bera normality test. The asterisk denotes significance at 1% level. This is established by the p-values under the Jarque-Bera values.

Likewise, the deviations of the actual data from their mean values are very small as shown by the low standard deviations for most the series. The statistics in Table 1 reveal that the series except population

(pop) and expenditure-gross domestic product (esp/gdp) ratio are leptokurtic (peaked) relative to normal as the kurtosis value exceeds 3. Lastly, the probability that the Jarque-Bera statistic exceeds (in absolute value) the observed value is generally low for all the series suggesting the rejection of the hypothesis of normal distribution at 5per cent level of significance.

EMPIRICAL RESULTS

Unit Root Test

To obtain the international properties of the data series, we apply the Augmented-Dickey Fuller (Dickey and Fuller, 1979) and the KPSS (Kwiatkowski-Phillips-Schmidt-Shin, 1992) tests. The results reported in Table 2 show that all variables are integrated of order one or $l(1)$.

Cointegration

Next, we investigate whether or not real gdp, real government spending and population share common long run relationships. To achieve this, we use the Engle-Granger two-step procedure. At the first step, the static Ordinary Least Square (OLS) regression was estimated. The results obtained are reported in Table 3. In the second step of the Engle-Granger cointegration test, we examined the unit roots of residuals by using the ADF statistic. The results showed that the residuals are stationary at 5% level of significance (t – ADF values are: -4.899***, -4.631***, -4.898*** and -3.203** for eqs. (1), (4), (5) and (6) respectively. This shows that there is long run cointegration relation among the variables.

Table 2: Unit Root Test

	ADF		KPSS	
	Level	**1st difference**	**Level**	**1st difference**
espy (constant)	-0.522	-3.703	0.911	0.051
(costant & linear)	-2.258	-3.666	0.055	0.051
gdp (constant)	0.505	-3.185	0.906	0.223
(constant & linear)	-2.519	-6.272a	0.168	0.089
pop(constant)	-0.768	-3.197	0.926	0.152
(constant & linear)	-1.369	-3.266	0.144	0.119
esp/pop(constant)	-0.534	-3.737	0.907	0.050
(constant & linear)	-2.257	-3.696	0.056	0.050
gdp/pop(constant)	0.489	-3.203	0.901	0.241
(constant & linear)	-2.487	-6.335a	0.172	0.086
esp/gdp(constant)	-2.701	-4.903	0.260	0.027
(constant &linear)	-2.344	-5.393	0.206	0.050

Critical values for ADF are -3.581, -2.927, and -2.601 (constant only at level); -3.585, -2.928 and -2.602 (constant only at 1st difference); -4.171, -3.511, and -3.186 (constant & linear at level), -4.176, -3.513 and -3.187 (constant & linear at 1st difference) at 1%, 5% and 10% level of significance respectively. The critical values for KPSS test are: 0.739, 0.463 and 0.347 (constant); 0.216, 0.146 and 0.119 (constant& linear) at 1%, 5% and 10% respectively.

The results in Table 3 show that the growth of government spending is directly linked with the size of the real gross domestic product (1.025 in eq. (1) and gdp per capita (1.026 and 0.026 in eqs. 5 and 6 respectively). The values of the elasticities obtained in eqs. 1, 5 and 6, clearly provide strong evidence in support of the Wagner's law in Nigeria. This result is quite consistent with the findings of Olomola (2004) for Nigeria, Sideris (2007) for Greece, Islam (2001) for USA and Kalam and Aziz (2009) for Bangladesh. The results equally show that population is a major factor influencing government spending in the long run. The coefficient of population is high and significant.

However, for robustness check, we employed the Johansen-Juselius (1990) cointegration testing technique using the trace and the maximum eigenvalue statistics. The results of the tests are as shown in Table 4. The third and fourth columns report maximum eigenvalue statistics and critical values

respectively, while the fifth and the sixth columns show the trace statistics and its critical values at 95 per cent respectively.

Table 3: Engle-Granger First Step

	Coefficients			
	Eq. (1)	Eq. (4)	Eq. (5)	Eq. (6)
constant	-2.125(-0.24)***	-14.981(-2.15)***	-2.027(0.18)***	-2.027(0.18)***
gdp_t	1.025(0.01)***	0.446(0.09)***	-	-
pop_t	-	4.494(0.75)***	-	-
$(gdp/pop)_t$	-	-	1.026(0.023)***	0.026(0.023)***

*The table shows the regression estimates of the following equations: $ln(esp)_t = \xi + \alpha ln(gdp)_t$ for eq.1; $ln(esp)_t = \xi, + \alpha ln(gdp)_t +(1-\alpha)ln(pop)_t$ for eq.4; $ln(esp/pop)_t = \xi + \alpha ln(gdp/pop)_t$ for eq.5; and $ln(esp/gdp)_t = \xi + (\alpha-1)ln(gdp/pop)_t$ for eq.6. The figure in each cell is the regression coefficient while those in parenthesis are standard errors. *** denotes significance at 1% level.*

The results in Table 4 show that the null hypothesis of no cointegration cannot be rejected at the 5 per cent level for the maximum eigenvalue test. However, using the trace test, the null hypothesis of no cointegration relationship can be rejected at the 5 per cent level. The trace test suggests one cointegrating vector meaning that long run relationship exists amongst the three variables. According to Cheung and Lai (19930, the trace test shows more robustness to both skewness and excess kurtosis in the residuals than does the λ-max test; therefore, we adopted the trace statistics in this study.

Table 4: Johansen Cointegration Test (with a Linear Trend) Where R Is the Number of Cointegrating Vectors

Null	Alternative r	λ-max	Critical values	Trace	Critical values
0	1	19.94	21.13	32.02**	29.79
≤ 1	2	11.34	14.26	12.08	15.49
≤ 2	3	3.84	3.84	0.74	3.84

*Table 4 shows the Johansen cointegration test using λ-maximum and trace tests. The third and fourth columns show λ-max statistics and critical values while fifth and sixth column show the trace statistic and critical value. The r implies the number of cointegrating vectors and the critical values are from the MacKinnon-Haug-Michelis table (1999). ** reject null hypothesis at 5% level of significance.*

Granger Causality

The existence of a cointegrating relationship among real gdp, population and government spending suggests that there must be Granger causality in at least one direction, but it does not indicate the direction of temporal causality between the variable. The short run causal effects are obtained by the F-test of the lagged explanatory variables. The results obtained are reported in Table 5 below.

Table 5: Granger Causality Test

	$\Delta ln(esp)_t$	$\Delta ln(gdp)_t$	$\Delta ln(pop)_t$	$\Delta ln(esp/pop)_t$	$\Delta ln(esp/gdp)_t$	$\Delta ln(gdp/pop)_t$
$\Delta ln(esp)_t$	-	9.043(0.00)**	6.414(0.004)**	-	-	-
$\Delta ln(gdp)_t$	2.941(0.06)	-	6.71(0.003)**	-	-	-
$\Delta ln(pop)_t$	0.197(0.82)	0.296(0.75)	-	-	-	-
$\Delta ln(esp/pop)_t$	-					8.532(0.00)**
$\Delta ln(esp/gdp)_t$	-					0.263(0.77)
$\Delta ln(gdp/pop)_t$	-			2.739(0.08)	2.739(0.08)	

*Table 5 shows the results of the bivariate regression for Granger- causation of the form: $ln(esp)_t = \alpha_0+ \sum\alpha_i ln(esp)_{t-i} + \sum\beta_i ln(gdp)_{t-i} + \varepsilon_t$ and $ln(gdp)_t = \alpha_0 +\sum\alpha_i ln(gdp)_{t-i}+ \sum\beta_i ln(esp)_{t-i} +v_i$. The F-statistic values of overall significance are given in the table. Number of lags are 2. The values in parenthesis are the p-values. **reject the null hypothesis that horizontal variable does not Granger cause respective vertical variable at 5% level of significance.*

The Granger causality test statistics show that real gdp and population size granger cause real government spending in Nigeria. In the same way, population size granger causes real gdp, while gdp per capita

granger causes per capita government spending. The results clearly support the Wagner's hypothesis for Nigeria and population size equally influences government spending growth in the short run.

However, we extended the analysis by performing long run causality test and the short run adjustment to re-establish long run equilibrium-the joint significance of the sum of lagged terms of each explanatory variable and the ECT by joint F-test. The results obtained are reported in Table 6. Short run causality is found from real GDP to real expenditure. The significance of the joint test in the government spending equation is consistent with the presence of Granger-causality from real GDP to real government spending.

Table 6: Estimation Results of Error Correction Model for the Logarithmic Series

Sources of Causality Short run Variables	Δesp	Δgdp	Δpop	ECT	Joint test
F-statistics				*t*-statistics	*F*-statistics
Δesp	-	4.69(0.01)***	0.67(0.52)	-1.02	2.34(0.05)**
Δgdp	2.11(0.13)	-	0.10(0.94)	0.36	0.09(0.48)
Δpop	1.11(0.11)	0.04(0.96)	-	- 1.01	0.85(0.52)

Table 6 shows the error correction causality estimates based on the equation: $\Delta ln(esp)t = \alpha_0 + \sum \alpha_{li}\Delta ln(esp)_{t-i} + \sum \beta_{li}\Delta ln((gdp)_{t-i} + \sum \delta_{li}\Delta ln(pop)_{t-i} + \gamma ecm_{t-1} + \varepsilon_{it}$ *specified each of the three variables. The values in parenthesis are the p-values. **' ***denote significance at 5% and 1% critical level respectively*

CONCLUSION

The goal of this paper is to model the relationship between government spending and national income i.e. verifies the validity of Wagner's law for Nigeria. We achieved this goal by undertaking a multivariate modeling strategy through including population in the analysis. Our main findings were as follows. First, we found long run relationship among the variables at both bivariate and trivariate levels. Second, the coefficients of the explanatory variables have the expected sign and magnitude confirming the Wagner's hypothesis for Nigeria. Third, Granger causality test showed a unidirectional causality running from real gdp and real per capita gdp to government spending (both aggregate and per capita) affirming Wagner's hypothesis in Nigeria. Also, a unidirectional causality running from population size to government spending and real gdp was established. Fourth, the importance of population size cannot be overemphasized in analyzing the government spending-national income nexus in the developing economies like Nigeria.

Our findings lead to the following policy implications. One, increase in government spending is a natural consequence of economic growth arising from increase industrialization. This suggests that increase in government spending might not necessary means inefficiency on the part government as some economists have argued. Also, effort at rolling back the government through rationalization of government spending might not necessarily have adverse effects on economic growth. Two, as population size causes economic activity which in turn causes government spending, government must ensure that the appropriate population is adopted in the country.

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BIOGRAPHY

Akinlo, A. Enisan is a Professor of Economics, Obafemi Awolowo University, Nigeria. His research appears in journals such as *Policy Modeling, Applied Economics, Energy Economics, Journal of Economics and Business,* and *Journal of Developing Economies*. He can be contacted at the Department of Economics, Obafemi Awolowo University, Ile-Ife, Nigeria. E-mail: aakinlo@oauife.edu.ng. Tel no.: +234 803 370 0756

THE EFFECTS OF MERGERS AND ACQUISITION ON CORPORATE GROWTH AND PROFITABILITY: EVIDENCE FROM NIGERIA

Sylvester Feyi Akinbuli, University of Lagos, Distance Learning Institute
Ikechukwu Kelilume, Lagos Business School

ABSTRACT

It is a widely held view that a strategic solution to financial distress in corporate organizations is mergers and acquisitions. This view remains a presumption, which has not been empirically tested through a research study. Corporate organizations facing difficulty have in recent times often followed or are compelled by regulators to follow the path of extensive reconstruction through mergers and acquisitions, apparently as the only option to liquidation. This paper fills a gap in the literature by investigating the effects of mergers and acquisitions on the efficiency, growth and profitability of corporate organizations in the post consolidated environment of the Nigerian banking industry. The methodology used is a survey of companies incorporated in Nigeria under the Companies and Allied Matters Act [1990], which have undergone a merger or an acquisition process. The elements of the survey were selected randomly. A total of ten incorporated banks were selected using simple random sampling technique. The collected data were analyzed using key financial ratios. The results support the idea that mergers and acquisitions are not a prima facie solution to the problem of financial distress in corporate organizations. This is especially so when mergers are regulatory imposed than business environment driven. The study further revealed that while mergers and acquisitions can drive growth and profitability in some organizations, operating efficiency suffers at least in the short-term in the post merger and acquisition corporate entity. The evidence also shows that mergers and acquisitions provided only a temporary solution to financial distress and no solution at all to operating indiscipline.

JEL: G34, L10,

KEYWORD: Merger, Acquisition, Corporate Growth, Profitability**.**

INTRODUCTION

Business Organizations are established to achieve certain corporate objectives including corporate growth and increases in profitability. Growth is a major yardstick by which the success of a business firm is measured. Given that business organizations operate in a dynamic macroeconomic environment such growth is threatened in periods of volatile economic instabilities (Weston and Copeland, 1989). The resultant effect of the recent world economic meltdown is a financial crisis among corporate organizations. One strategy open to corporate organizations during the periods of economic crisis is Merger and Acquisition. Companies have been combining in various configurations since the early days of business. Nevertheless, joining two companies is a complex process because it involves every aspect of both companies. For instance, executives have to agree on how the combination will be financed and how power will be transferred and shared. Also the companies must deal with layoffs, transfers, changes in job titles and work assignments etc. (Staul, Mendenhall & Weber, 2005; Indhumathi, Selvam & Babu, 2011). The most popular forms of business combination are mergers, acquisition and consolidations.

Merger and acquisition is at its infancy stage in Nigeria compared with other developed countries. Merger and Acquisition is an important concept that contributes to the growth of a national economy through increase in productivity and profitability. Mandi (2003:3) contributing in this regard said that:

> "*In the last three years, growth through acquisition has been a critical part of the success of many companies operating in the new economy. In fact, I would say that merger and acquisition has been the single most important factor in building up their market capitalization*".

Merger has been defined as the combination of two or more separate firms into a single firm. The firm that results from the process could take any of the following identities: Acquirer identity or a complete new identity (Hitt, Harrison & Ireland, 2000). Mergers, Amalgamations and Takeovers have been identified as important features of corporate structural changes (Pandey, 2000).

The current economic situation in Nigeria can best be described as very turbulent with the problems reflecting more in the financial service sector. The dimension of the problem is such that banks in the country are fast losing their market share, in addition to facing continuous operating losses and liquidity crisis leading to inability to pay depositors. Other major challenges facing banks in the country include low turnover, low profit, low dividend payout, declining growth rate and high operating cost. The crisis in the financial sector reached a peak in July 2004 when the then Governor of Central Bank of Nigeria (CBN), Charles Soludo described the Nigerian Banks as 'fragile'. He disclosed that Nigerian Banks "as at the end of march 2004, the CBN's ratings classified 62 banks as sound/satisfactory, 14 as marginal and 11 as unsound while 2 of the banks did not render any return during the period". The Central Bank also reported that 45 banks or more than one-half of banks in operations recorded loan-deposit ratios of 100 per cent and above and 21 banks failed to meet the minimum liquidity ratio. A more fundamental restructuring policy was clearly needed for the banking industry (CBN, 2008).

The Central Bank Governor summarized the major problems facing the Nigerian Banking industry as weak corporate governance, evidenced by high turn over in the Board and management staff, inaccurate reporting, late or non-publication of annual accounts, gross insider abuse, insolvency, week capital base… Based on the foregoing problems, the Central Bank of Nigeria (CBN) came up with a major policy reform that required Banks licensed in Nigeria to increase their paid up capital to a minimum of N25 billion (Twenty five billion Naira) on or before 31st December 2005. These problems together with the CBN policy lead to serious financial crisis. It was alleged that the only solution available to these organizations to get out of the financial crisis is Merger and Acquisition.

The literature is rich with studies on Mergers and Acquisitions but very few of these studies, if any, focused on the effect of mergers and acquisitions on corporate growth, efficiency and profitability. This study fills this research gap by addressing the issue of whether merger and acquisition is the best solution to bail out an organization in financial crisis and the effects of merger and acquisition on corporate profitability. We using the sample survey method and draw secondary data collected from financial statements, reports and accounts. We examine 10 randomly selected banks form the existing recapitalized 25 banks. We evaluate the financial status of banks during pre and post mergers periods covering a sample period of 2004-2008 with the principal aim of determining the effect of merger on corporate growth and corporate profitability in Nigeria. Following the introductory section, the rest of the paper is structured as follows; Section II is the literature review while section III covers data and methodology. Section IV presents the result of the study while section V concludes the study.

LITERATURE REVIEW

This section reviews the relevant literature. The review also covers empirical studies in the area focusing attention on the research problems. It will also review the condition and legal framework upon which Merger and Acquisition is based in Nigeria.

David (1968) reveals that most countries have no good record of Merger and Acquisition development. However, it was on record that the first incidence occurred between 1890 and 1904 in the United State of America. The second incidence was in 1920 at the end of the First World War. The third incidence occurred at the latter part of the Second World War (between 1939 and 1945) during which large numbers of manufacturing and mining firms totaling about 2400 merged. Therefore, internationally, mergers and acquisitions constitute the most frequently used means through which firms undertake foreign direct investments. In most cases this has recorded a low level of success due to cultural due diligence, cross cultural communication, connection, and control (Rottig, 2007, Askim, Christensen, Fimreite and Laegreid, 2008). Also, Vaara, (2003) noticed that this could lead to lack of trust, reduced commitment and conflict. Similarly, it could be due to the fact that most negotiations focus more on financial or economic perspectives which are usually measured in the short-run, neglecting the unanticipated long-run returns and non-financial factors (Mansure, 2003; Iyoha & Adeyomo, 2007; Majidi, 2007, Gbede, 2008). While, Nehavandi and Malekzadeh (1998) made it clear that the level of success in merger and acquisition depend strongly on the level of congruence between both firms in the negotiation process and difficulties in the process could be ameliorated by post-acquisition integration negotiations.

In Nigeria, Merger and Acquisitions remain few and unpopular. The earliest known merger and acquisition that occurred in Nigeria was in 1926 between West African Soap Company Ltd and Van Der Berg Ltd (producers of margarine) Shamsudeen (1997). Since then there have been increased discussion and awareness on Merger and Acquisitions in Nigeria. The decade 1995 and 2005 was traumatic for banking industries in Nigeria which led to distress and in general, the overhauling of the industry. In 2004, the regulating body prescribed a minimum shareholders' fund of 25billion Naira for licensed Banks operating in Nigerian. This financial crisis led to Mergers, Acquisition or Consolidation in the industry. The result of this policy was that out of 89 banks that were then in operation, 75 representing 80% merged into 25 banks while the remaining 14 representing 20% that could not finalize the merging process went into liquidation. Table 1 shows successful mergers in Nigeria from 1982 to 1988. Table 2 shows successful merger in the banking industry in 2006. There are other successful mergers in Nigeria from 2006 to-date.

Meaning of Mergers, Acquisitions and Consolidation

The terminologies, 'Merger, Acquisition and Consolidation' often cause confusion in the minds of people. The difference between a merger and a consolidation is fairly technical having to do with how the financial and legal transaction is structured (Bovee and Thill, 2001). Basically, in a merger, one company buys another company, or parts of another company and assumes control of its property and liabilities. a Consolidation, is the combination of two or more companies in which the old companies cease to exist and a new enterprise is created while Acquisition is a form of business combination in which one company buys another company's voting stock (Healy, Palepu and Ruback, 1997).

Merger can be defined as "any amalgamation of the undertaking or any part of the undertakings or interest of two or more companies or the undertakings or part of the undertakings of one or more companies and one or more corporate bodies" (Company and Allied Matters Act (CAMA) 1990 : S.590). According to Coyle (2000), merger is the coming together of two companies of roughly equal size pooling their recourses into a single business.

Table 1: Successful Mergers in Nigeria from 1982 to 1988

Acquiring Company	Target Company	Year	Conversion Terms	Effects on Financing
1.A.G Leventis Nigeria Limited Public quoted	Leventis Stores Limited Public quoted	1983	A price of 60k per 50k share for A. G. Leventis and a price of 50k each for the shares of leventis Stores giving rise to an exchange ratio of 80 per cent i.e. 100 ordinary shares of Leventis stores for 83 ordinary shares of A.G. Leventis Ltd	A.G. Leventis had to increase its Authorized Capital to enable it issue 11,718, 750 ordinary shares in Exchange for 14,062,500 Ordinary
2. Lever Brothers Nigeria Limited Public quoted company	Lipton Nigeria Limited Private Company	1984	A price of 80k per 50k share for lever Brothers and N1.20 per 50k share for Lipton, giving rise to an exchange ratio of 150 for 100 i.e., 150 Ordinary shares of LBN for 100 ordinary shares of Lipton	LBN to increase its Authorized Capital to enable it to issue 11,340,000 Ordinary shares in exchange for 7,560,000 Ordinary shares of
3. John Holt Limited Public quoted Company	Bauchi Bottling Company Limited. Private Company	1985	Payment of N5,185,000 to clear Bauchi Bottling's outstanding debts and N1,230,400 to pay off the share holders of the company in respect of their equity capital	Cash
4. SCOA Nigeria Limited. Public quoted Company	Nigerian Automotive Components Limited Private Company	1985	The entire shares of NIACO were offered for N1.00 and SCOA was to manage NIACO to ensure the remittance to FIMM of N500,000 as full and final settlement of the debt of N1,716,343 due from NIACO to FIMM	Cash
5. Intra Motors Nigeria Limited Public quoted	West Coast Fisheries Limited. Private Company	1985	A price of N1.50 per shares for West Coast Fisheries was approved. This put the total value of West Coast Fisheries at N150,000 and it was settled by cash	Cash
6. ITI Nigeria Limited Private Company	Henein Spinning Mills Ltd. Private Company	1985	A price of N6.50 per N2.00 share of Henein Mills Limited was approved for the entire 745,973 shares of N2.00 each acquired by ITI Limited	Cash
7. Niger Match Company Limited (Now Associated Match) Industries	a. United Match Company of Nigeria. b. Star Match	1985	A par price of N1.00 per share for United match Company, Star Match Company, and Safa Splints Limited was approved by the NSEC Exchange of Shares	There was no monetary consideration as regards Kaduna Match Limited as it had not issued its initial capital and its existing assets were
8. SCOA Nigeria Limited Public quoted Company	Motor Services Engineering Ltd. (MOSEL) Private Company	1986	A price of N2.00 per N1.00 share was approved for the acquisition of the entire 750,000 shares of MOSEL	Cash
9. John Holt Limited (JHL) Public quoted Company	John Holt Investments Limited (JHI) Public quoted Company	1987	A price of N1.70 per 50k share for JHL and N4.00 per 50k share for JHI was approved. The approved prices thus gave an exchange ratio of 235 shares of JHL for 100 shares of JHI	The price of N1.70 per 50k share also applied to the additional issue of 7,178,443 ordinary shares of 50k each to Nigerians in compliance with Exchange of shares
10. Standard Breweries Nigeria Ltd. (SBNL)	Private Company United Beverages Limited (UBL) Private	1988	An exchange ratio of 300 shares of (UBL) for 100 ordinary shares of SBNL was approved. Under this arrangement, SBNL was approved. Under this arrangement, SBNL issued 3,333,334 shares of N2.00 each at N3.00 a share in exchange for	
11. Lever Brothers Nigeria Limited (LBN) Public quoted Company	Cheseborough Products Industries Limited (CPI) Private	1988	An exchange ratio of 83 LBN shares for 100 of CPI was approved. The new shares of LBN consequently issued in exchange was at an approved price of N1.80 per 50k share while a CPI share was at N1.50 per 50k	LBN was to increase its Authorized Capital to enable it issue 7,529,360 shares in exchange for 9,072,000 shares CPI.

Source: Nigerian Securities and Exchange Commission, May, 1989. This table summarizes successful merges in Nigeria from 1982 to 1988. It contains information about the acquiring company, the target company to be acquired, the year of acquisition, the conversion terms and the effects of the merger on the company finance.

Table 2: Successful Mergers in Nigerian Banking Industry in 2006

S/N	Pre Merger/ Consolidation Companies	Post Merger/Consolidation Companies
1	First Bank of Nigeria Plc, MBC International. Bank and FBN (Merchant Bankers)	First Bank of Nigeria Plc.
2	Union Bank Plc., Union Merchant Bank, Broad Bank & Universal Trust Bank	Union Bank of Nigeria Plc
3	United Bank for Africa, Standard Trust Bank & Continental Trust Bank.	UBA Plc.
4**	Zenith Int. Bank Plc	Zenith Int. Bank Plc
5	Intercontinental Bank, Global Bank, Gateway Bank& Equity Bank	Intercontinental Bank Plc.
6**	Guaranty Trust Bank Plc.	Guaranty Trust Bank Plc.
7	Afribank of Nigeria & Afribank Int. Merchant Bank.	Afribank of Nigeria Plc Afribank Nigeria Plc
8	Diamond Bank & Lion Bank	Diamond Bank Plc
9	Oceanic Bank, International & Trust Bank	Oceanic Bank Int. (Nig Plc.)
10	Wema Bank & National Bank	Wema Bank Plc.
11**	Nigeria Int. Bank Ltd	Nigeria Int. Bank Ltd
12	Acee Bank, Marina Int. Bank & Capital Bank Int.	Acess Bank Nigeria Plc.
13	FCMB, Coop. Dev. Bank &Nig-American Bank	First City Monument Bank Plc
14	2nd Round merger with Sterling Bank Plc	Eco bank Nigeria Plc.
15	IBTC& Chartered Bank & Stanbic Bank Nigeria Ltd	Stanbic IBTC Bank Plc.
16	First Atlantic Bank, Inland Bank IMB & NUB	First Inland Bank Plc
17	Prudent Bank, EIB, Bond Bank Reliance Bank & Cooperative Bank	Sky Bank Plc.
18	Magnum Trust Bank, NAL Bank, NBM Bank, Trust Bank & Indo-Nigerian Bank.	Sterling Bank Plc
19	First Interstate Bank, Inter City Bank, Tropical Commercial Bank, Bank of the North, New Africa Bank, Centre Point Bank, Societe Bancaire, Pacific Bank & NNB.	Unity Bank Plc
20	Citizens Int. Bank, ACB Int. Bank, Guiding Express Bank, Omega Bank, Trans. Int. Bank & Fountain Trust Bank	Spring Bank Plc.
21	Equitorial Trust Bank & Devcom Bank.	Equitorial Trust Bank Plc.
	Habib Bank & Platinum Bank	Bank PHB Plc.
22		
23**	Standard Chartered Bank Plc	Standard Chartered Bank Plc
24	Fidelity Bank, FSB Int. Bank & Manny Bank	Fdelity Bank Nig. Plc.
25	Standbic Bank Nig. Ltd.	Standbic Bank Nig. Ltd

*Source: NSE Fact Book (2006): financial Standard Jan.30, 2006 and Nigeria Banking & economy 2008, p. 63. The table shows the successful merger in the Nigerian banking industry in 2006 with the second column showing the pre merger consolidated companies and the third column showing the post merger consolidated banks. ** indicates the five banks that did not merged and stand alone*

The stockholders or owners of both pre-merger companies have a share in the ownership of the merged business and for merger to exist, neither of the participating companies is portrayed as the acquirer or the acquired and both parties participate in establishing the management structure of the combined business. In addition to these features, both companies must be sufficiently similar in size such that one of the participating companies does not dominate the other when combined. According to Weston and Copeland (1989), Merger means any transaction that forms one economic unit from two or more previous ones. It occurs when a corporation and or more incorporated or unincorporated businesses are brought together into one accounting entity. The single entity now carries on the activities of the previously separated

independent enterprises. One or more companies may also merge with an existing company or they may merge to form a new company. Merger is also referred to as amalgamation.

A Merger or Amalgamation may be through Absorption or Consolidation. A Merger through Absorption is a Combination of two or more companies into an existing company. Here, the name of one of the companies involved in the merger is retained. A typical example in Nigeria is when United Bank for Africa (UBA) absorbed Standard Trust Bank and retained the name UBA. Acquisition, also referred to as take-over, means the process of combining two or more companies and in which one acquires the assets and liabilities of the other in exchange for cash or shares, goods and or debentures. Section 590 of CAMA, 1990 refers to acquisition as take-over. Accordingly, the CAMA, 1990 defined acquisition as,

"the acquisition by one company of sufficient share in another company to give the acquiring company control over that other company".

Acquisition means all the processes, terms, conditions and fulfillment adopted to purchase a small firm by a big and well established unit. It can also take place through the purchase of stocks and assets of an existing firm. Acquisition can also be seen as all business and arrangements through which the ownership and management of independently operated properties and businesses are under the control of a single management (Ayeni-Agbaje, 2002; Osazee, 2004; Okwuosa, 2005). Acquisitions of companies can be either full or partial. In a full acquisition, the acquirer buys all the stock capital of the purchase company. In partial acquisition, the acquirer obtains a controlling interest, normally above 50% but below 100%. According to Pandey (1997), in acquisition, the target company becomes either a division or a subsidiary of the acquiring company. In the study titled "Effect of Mergers on corporate Performance in India" conducted by Vardhana (2001), compared the pre and post merger operating performance of the corporations involved in merger between 1992 and 1995 to identify their financial characteristics. The findings of the study showed that there was no increase in the post merger profits and that the merging firms were at the lower end in terms of growth, tax and liquidity of the industry.   Various studies have shown that most mergers and acquisitions result in failure, yet the concept remains popular, (Virani, 2009). The reasons for the few successes and the many failures remain obscure in the empirical literature. (Stahl, Mendenhall and Weber, 2005).

Review of the Regulatory Framework for Consummation of Mergers and Acquisitions in Nigeria

The statute which provides the legal framework within which mergers and acquisitions can be carried out in Nigeria is the investments and securities Act, 1999. The ISA Act 1999 repealed the provisions of the Securities and Exchange Commission Decree 1988 and also repealed part XVII of the Companies and Allied Matters Act 1990 which contained detailed provisions relating to the public offer and sale of securities, Unit Trusts, Mergers and Takeovers. A much more detailed provisions relating to these and other matters are now in the ISA and the Rules and Regulations issued by the Securities and Exchange Commission (SEC), pursuant to sections 258 and 262 of the ISA (the ISA rules). The major bodies, laws and Acts in Nigeria that regulate the consummation of Mergers and Acquisitions includes, The Investment and Securities Act (ISA) No. 45 of 1999, The Rules and Regulations of SEC (Pursuant to the ISA), The Companies and Allied Matters Act (CAMA) 1990 (as amended), The Banks and other Financial Institutions Act (BOFIA) No. 25 of 1991, The Insurance Act of 2003, Companies Income Tax Act cap. 60 of 1990 (As Amended) and the Rules and Regulations issued by the Securities and Exchange Commission (SEC), pursuant to sections 258 and 262 of the ISA (the ISA rules).

RESEARCH DESIGN AND METHODOLOGY

The research design adopted for this study is the survey method. The choice of survey method is informed by its applicability for collecting standardized data that allows the researcher to create information for

precisely answering the how, who, what, where, and when questions concerning the subject matter of the research. Besides, the data structures created, survey methods can increase the researcher's ability to make generalized inferences about the defined target population as a whole. Secondary data were collected from financial statements, reports and Statements of Accounts of ten randomly selected sampled banks. The collected data were analyzed using the Profitability Ratio, Liquidity Ratio and Capital adequacy. In addition to secondary data collected, the researcher conducted personal interviews with a total of twenty (20) banks Chief Executives and Managers of the Sampled Banks.

DATA ANALYSIS AND RESULTS

Impact of Mergers and Acquisitions on Corporate Growth

Mergers and acquisitions stimulated strong growth in the banking sector and the growth indicators in earnings and size of the balance sheet recorded in the first two years of post consolidation are unmatched anytime in the history of Nigerian banking. Triple digit growth in asset size, revenue and profit was recorded in the selected banks. Table 3 shows the number of banks reduced from 89 to 25 while the number of bank branches increased from 3,382 in 2004 to 4,579 in 2007. This implies that consolidation has led to increase in the spread of banks in Nigeria as given by the number of bank branches. The table further shows the total assets base of banks increased from 3,392 billion Naira in 2004 to 10,431 billion Naira in 2007 while total capital reserves reduced from 1,050 billion Naira in 2004 to 957 billion Naira 2006. The liquidity ratio increased from 42% in 2004 to 53% in 2006, with the figures slightly below the 2000 figure of 58%. Finally, the loan-to-deposit ratio shows an increase from 85%, in 2004 to 98% in 2006.

Table 3: Summary of the Impact of Consolidation on Some Bank's Statistics in Nigerian Banking Industry

	Pre –Consolidation Years			Post Consolidation Years	
	2000	2002	2004	2006	2007
No. of Banks	89	89	89	25	25
No. of Bank Branches	2306	3132	3386	3468	4579
Total Assets' Base of Banks (N' Billion)	1,707	2,767	3,392	6,738	10,431
Capital and Reserves (N' Billion)	395	822	1,050	957	n/a
Av. Cap. And Reserve per Bank (N' Billion)	443	923	1,180	3,828	n/a
Liquidity Ratio (%)	58	49	42	53	n/a
Loan-to-Deposit Ratio (%)	46	78	85	98	n/a

The table shows total bank performance in Nigeria in the pre-consolidation and post-consolidation years. With the first column showing the performance indicators ranging from the number of banks, the number of bank branches, the total asset base of the banks, the capital and reserve of the bank, the liquidity ratio and the loan-to-deposit ratio. Column two and column three are the pre consolidation years (2000-2004) and the post consolidation years (2006-2007) respectively. Source: Central Bank of Nigeria Annual Report and Statement of Account, 2008.

The operating capacity of each bank was significantly increased through a combination of mergers and acquisitions and new equity capital build up. This increased the revenue and profit capacities of the banks significantly in two years of post-consolidation. Table 4 shows the impact of consolidation in First Bank of Nigeria Nig. Plc. First Bank is one of the largest banks in the country by size of the balance sheet with almost one and half times, (i.e. about 147.8%) from N616,824 million in March 2006 to N1,528,234 million in March 2008. Gross earnings of the bank swelled from N67, 440 million to N155, 725 million during the same period, a leap of 130.9%. The bank's net profit also advanced by 111.0% from N17, 383 million in 2006 to N36, 679 million in March 2008.

Impact of Consolidation on the Sampled Individual Banks

Table 4: First Bank of Nigeria Plc. N' m

Year	Gross Earnings	Net Profit	Total Assets
2004	51,318	11,618	384,211
2005	57,255	13,050	470,839
2006	67,440	17,383	616,824
2007	90,323	18,383	884,804
2008	155,725	36,679	1,528,234

The table shows the impact of consolidation on First bank Plc. Between the post consolidation years of 2004-2008 with the second, third and fourth columns representing the bank's gross earnings, the net profit and the total assets respectively. The data was sourced from the first bank's Annual Report Statement Accounts – Various Years

United Bank for Africa is another large bank in the Nigeria banking industry. The banks total assets, as shown in Table 5, which stood at N884,137 million in September 2006 rose significantly by 89.3% to N1, 673,333 million in September 2008, while gross earnings of the bank advanced by 87.4% rising from N90,447 million in 2006 to N169, 506 million in 2008. By the same token, the bank's net profit rose by over 257% from N11, 550 million to N41, 239 million during the same period indicating that UBA's posted a positive post-consolidation performance.

Table 5: United Bank for Africa Plc. N' m

Year	Gross Earnings	Net Profit	Total Assets
2004	24,510	4,525	212,024
2005	26,089	4,921	250,783
2006	90,447	11,550	884,137
2007	109,457	21,540	1,191,063
2008	169,506	41,239	1,673,333

The table shows the impact of consolidation on United Bank for Africa Plc. Between the post consolidation years of 2004-2008 with the second, third and fourth columns representing the bank's gross earnings, the net profit and the total assets respectively. The data was sourced from the bank's Annual Report Statement Accounts – Various Years

Table 6 shows the statistics on Intercontinental Bank Nig. Plc. Intercontinental Bank Plc is regarded as one of the largest banks in the post consolidated era. The bank grew its balance sheet size by over 277.1% rising from N369, 232 in February 2006 to N1, 392,210 million in February 2008. Its revenue base was raised from N41, 517 million to N174, 615 million over the same period, an increase of over 320.6% which also reflected in the company's profits as the company's net profit surged upwards from N7, 217 million to N33, 994 million over the same period recording a rise of over 371%.

Table 6: Intercontinental Bank Plc. N' m

Year	Gross Earnings	Net Profit	Total Assets
2003	21,204	3,112	96,858
2005*	32,795	5,703	203,647
2006	41,517	7,217	369,232
2007	87,920	15,121	704,783
2008	174,615	33,994	1,392,210

*The table shows the impact of consolidation on Intercontinental Bank Plc. Within the post consolidation years of 2003-2008 with the second, third and fourth columns representing the bank's gross earnings, the net profit and the total assets respectively. The sign * represents the change of accounting year. Source, Intercontinental Bank Annual Report and Statement of Account various years*

Oceanic Bank Plc. also recognized as one of the leading banks in the Nigerian banking industry raised its asset base from N372, 035 million in September 2006 to N1.246, 218 million in September 2008 as shown in Table 7. Gross income rose by 321.2% from N44, 685 million to N188, and 218 million over the same period while net profit grew from N9, 559 million in September 2006 to N17, 532 million in

September 2007 before dropping in 2008, a fall which is largely attributed to the direct impact of the 2007-2008 global financial crisis.

Table 7: Oceanic Bank International [Nig.] Plc. N' m

Year to Sept	Gross Earnings	Net Profit	Total Assets
2004	12,624	3,288	86,884
2005	24,488	5,897	217,803
2006	44,685	9,559	372,035
2007	74,937	17,532	1,038,437
2008	188,218	9,609	1,246,182

The table shows the impact of consolidation on Oceanic Bank International [Nig.] Plc .within the post consolidation years of 2004-2008 with the second, third and fourth columns representing the bank's gross earnings, the net profit and the total assets respectively. Source; Oceanic Bank Annual Report and Statement of Account various years

Access Bank is recognized as one of the medium Banks operating in Nigeria as shown in Table 8. The trend from the company's financials shows growth in operating figures was even more spectacular amongst the medium and small banks. Access Bank, for instance, which had a total of N174, 554 million asset bases in March 2006 closed with a balance sheet size of N1, 045,568 million in March 2008. Its revenue base swelled from N13, 359 million to N57, 999 million over the same period. The bank's net profit multiplied from N732 million in 2006 to N15, 881 million in 2008, showing a very strong posting in the post-merger era.

Table 8: Access Bank Nigeria Plc. N' m

Year to March	Gross Earnings	Net Profit	Total Assets
2004	5,515	638	31,342
2005	7,495	502	66,918
2006	13,359	732	174,554
2007	27,881	6,083	328,615
2008	57,999	15,881	1,045,568

The table shows the impact of consolidation on Access Bank Nigeria Plc. covering the post consolidation years of 2004-2008 with the second, third and fourth columns representing the bank's gross earnings, the net profit and the total assets respectively. Source; Access Bank Annual Report and Statement of Account various years

Fidelity Bank, which was among the smallest banks in the post consolidation era, registered some of the highest growth indices as shown in Table 9. Its asset base was raised from N121, 089 million in June 2006 to N535, 479 million in June 2008, a growth of over 342.2%. The bank's gross earnings was also raised from N11, 931 million in June 2006 to N42,660 in June 2008, an increase of over 257.6%. By the same token, the net operating profit of the bank was raised from N3, 177 million to N13, 150 million during the same period representing an increase of over 313.9%.

Table 9: Fidelity Bank Plc. N' m

Year to June	Gross Earnings	Net Profit	Total Assets
2004	5,471	914	27,552
2005	6,159	1,237	34,953
2006	11,931	3,177	121,089
2007	24,859	4,437	218,332
2008	42,660	13,150	535,479

The table shows the impact of consolidation on Fidelity Bank Plc. covering the post consolidation years of 2004-2008 with the second, third and fourth columns representing the bank's gross earnings, the net profit and the total assets respectively. Source; Fidelity Bank Annual Report and Statement of Account various years

Impact of Mergers and Acquisitions on Bank Profitability

An assessment of the performance of the sampled banks shows the significant growth in revenue and balance sheet figures was reflected in all the income lines and asset classes of the respective banks. The results are presented in Table 10. High growth in operating figures was industry wide and reflected even in the few banks that did not apply mergers and acquisitions to meet the Central Bank's requirement. The growth drivers in these banks were driven by fresh equity injections. However banks that applied mergers/acquisitions and new equity capital injections generally grew much faster. Therefore, it is safe to infer that there is significant growth in most of the banks after consolidation.

Table 10: Banking Industry Performance Ratios [%]

Indicator	2004	2005	2006	2007	2008
Net Profit Margin	15.0	18.3	20.3	22.4	25.0
Return on Total Assets	2.6	2.2	2.3	3.4	2.5
Return on Equity	20.3	16.4	12.6	15.5	14.9
Net Interest Margin	51.9	59.8	63.5	62.8	65.4
Interest Income/Loans & Advances	24.8	19.0	19.1	15.8	14.5
Interest Cost/Total Deposits	8.1	5.8	4.5	3.8	3.9
Operating Cost Margin	47.7	45.9	47.5	44.3	40.4

The table shows the total banking industry performance indicators in Nigeria over the periods 2004-2008. The major performance indicators reviewed in the first column includes; net profit margin, return on total assets,(ROA), return on equity(ROE), the net interest margin, the ratio of interest income to loans and advances, the ratio of interest cost to total deposits and the operating cost margins of the banks. Source; Source, Nigerian Banking and Economy 2007and 2008

The observed high growth in profit numbers among the post consolidated banks was analyzed further by examining profitability ratios. We found that the banks maintained a trend of improving profitability ratios in the first two years of their consolidation. The ability to convert revenue into profit was consistently improved between 2006 and 2008. Industry average net profit margin improved from 20.3% in 2006 to 25% in 2008. The improvement was traced to the benefits of economic of scale which enabled the banks to streamline costs generally. Rates of return failed to match the high growth in profit as a result of huge equity capital injections in 2005 and 2007. However rates of return were slightly better in 2008 for the industry than recorded in 2006. The ability of banks to improve rates of return even marginally despite huge public offers that extended into a second round was an indication of a slowdown in the overall banking performance in the post consolidation era.

Net interest margin improved among the banks analyzed, indicating a good ability to grow interest income ahead of interest expenses. The consolidation process swept off the marginal banks that used to borrow at penal rates of interest, compelling depositors to accept the low interest structure of the large banks. Also, during the consolidation period, investors withdrew huge funds from the rest of the economy to invest in the banking industry. The injection of huge funds raised the liquidity positions of the banks significantly and led to a reduction interest rates on deposit liabilities. The boom in the economy in the post consolidated environment enabled banks to expand their lending operations rapidly, which saw rapid growth in interest income as well. Excessive liquidity in the hands of banks in the post mergers and acquisition trading made banks compete actively on the asset side of the balance sheet.

This led to rapid expansion of the loan portfolio, which was the main driver of the high growth in the size of the balance sheet. The significantly increased lending capacity of banks and the easier availability of credit even at micro finance level resulted in a general decline in interest income earned from loans and advances. The banking industry average interest income from loans and advances declined in the post merger and acquisition environment from 19.1% in 2006 to 15.8% in 2007 and further down to 14.5% in 2008.The decline in interest income from loans and advances was more than compensated for by the massive increase in the credit portfolio volumes. There was also a corresponding decline in interest expenses due to the high level of liquidity in the system. The average interest rate paid on the naira of

deposit liabilities by banks declined from 4.5% in 2006 to 3.8% in 2007 and inched up at 3.9% in 2008. The decline in interest cost was slightly more than the decline in interest income, which resulted in the slight improvement in net interest margin during the period.

Mergers and acquisitions also provided an opportunity for banks to rationalize operating cost by applying the economy of scale benefits. While the operating capacities of the merged banks expanded, the cost of financing the operations grew at a significantly reduced pace. Banks grew revenues faster than costs, which again explains the general improvement in profit margins. Industry average pre-tax profit generated per employee grew significantly from N4.7 million in 2006 to N8.2 million in 2008.

The average operating cost margin for the banking industry declined from 47.5% in 2006 to 44.3% in 2007 and further to 40.4% in 2008, the lowest average industry operating cost margin in many years. This means, banks utilized lower cost to drive bigger operating capacities in the post consolidation era.

Impact of Mergers and Acquisitions on Operating Efficiency

The impact of mergers and acquisitions on the operating efficiency of banks seems to follow a random pattern rather than any identifiable general trend. This outcome seems to reflect the unusual circumstance in which the mergers and acquisition strategy was applied. The policy was applied mainly for regulatory compliance rather than market or business environment driven. There was also an officially dictated time of 18 months within which the merger and acquisition process must be completed.

Meeting regulatory compliance appears to have been a more important consideration in choosing merger partners than improving internal efficiency. Hence banks differed widely in their efforts to integrate the merged entities into the main operating system. It was comparatively much easier for the large banks that acquired smaller banks to achieve operating stability in the post consolidated environment than for the smaller banks that either merged or amalgamated. One or two banks that had similar operating structures before the acquisition found it easier to achieve an integrated operating system than the rest. The worst affected banks could not issue audited financial statements for two to three years after consolidation. These comprise mainly the amalgamated banks that set out to build one bank out of several merger entities with different operating systems and corporate cultural backgrounds.

There were others that were held down by weak partners and therefore could not find their feet long after the conclusion of the merger or acquisition. In the course of the delay in achieving an integrated operating structure, operating efficiency suffered severely. The effort to meet high returns promises made to investors in the process of high equity capital raised in the market did not permit a cautious approach needed to strengthen internal efficiency. Many banks doubled large-sized loan portfolios within one financial year; other assets tripled in some cases and investment assets surged almost without limit. The initial indications were that banks were growing both credit volumes with quality at the same time. The industry average percentage of classified loans declined from 14.8% in 2006 to 11.2% in 2007, dropping to 4.5% in 2008 as shown in Table 11. This outcome contradicted the normal expectation for rapid portfolio expansion to lead to deterioration in credit quality. Apparently, signals of an underlying credit quality problem were ignored until the economy faltered under the global financial crisis.

Table 11: Banking Industry Loan Performance Ratios [%]

Indicator	2004	2005	2006	2007	2008
% of Classified Loans	15.7	12.7	14.8	11.2	4.5
Loan Loss Reserve/Classified Loans	85.3	82.5	82.5	92.8	108.0

The table shows the impact of mergers and acquisition on banks operating efficiency with the major indicators reported in the first column being the percentage of total bank classified loans and the ratio of loan loss reserves to classified loans. Source, Nigerian Banking and Economy 2007and 2008

The improvement in credit quality ratios amid the most aggressive risk portfolio expansion in history is not considered an indication of efficiency in the post merger and acquisition entities. It is seen rather as evidence of reduced efficiency in institutions that began to expand business volume without first achieving operating stability. Banks competed to grow their loan portfolios aggressively without having in place effective machinery for recovery of bad assets an indication that mergers and acquisition did not result in the creation of effective risk management model in banks.

During the financial crisis that followed it was observed that only two banks that applied caution in growing business volume were least affected by the problem of huge credit losses that hit the banking industry adversely. The poor risk management quality is traceable to regulatory disposition that governed the consolidation process. The main objective of the regulatory authorities is to build large banking institutions that would become visible in the global market place. The Central Bank created some incentives such as external reserve management opportunities for banks to build the size of their balance sheets. Consequently, a number of banks did first and second round large equity offerings in the capital market after concluding mergers and acquisitions. It is apparent that in a bid to drive competitive size building capacities in the banking sector, operating efficiency suffered greatly. This position is further corroborated by the finding of Nigeria Banking & Economy 2009 – a banking industry report that the observed improvement in credit quality of the banking industry was not a reflection of progress in recovering bad assets. It showed that the improvement is an outcome of a more rapid growth of the gross loan portfolio than non-performing loans. That situation placed many banks in precarious positions when a large proportion of hitherto good accounts were swept into the bad debts portfolios in 2009.

A number of banks faced challenges of becoming big almost over night. They faced the hurdle of how to manage size and defend quality at the same time. Nigeria Banking & Economy had in 2006 noted that being big and efficient are not known to go together and saw the need for banks to develop firm strategies to deal with the challenges of becoming large institutions.

Post Consolidation Crisis in the Banking Sector in Nigeria

Following the global financial crisis of 2007-2008 which had its root in the mortgage crisis in the US, the banking industry in Nigeria was faced with significant pressures which led to financial crisis and bank distress. A risk management audit conducted by the Central Bank in 2009 revealed serious health problems in many banks, which necessitated a ₦620 billion bail-outs of the worst affected banks in September 2009. Massive credit losses were recorded by all the banks in operation, which wiped out reserves and sank equity capital of a number of banks into negative, as shown in the table 12 below.

Table 12 shows the extent of loss of individual banks in terms of negative equity capital recorded by the banks in the wake of the global financial crisis. As at end December 2009, all banks with the exception of Unity bank Plc. recorded a negative equity capital. The importance is that financial distress, which the regulators sought to cure through mergers and acquisitions, has returned into the banking system at a bigger dimension. In the present dispensation, the big banks suffered more in terms of distress than the small, marginal banks that either merged or closed. The analysis also revealed the serious health problems of banks have also been traced to the existence of a high level of indiscipline and fraudulent activities on the part of top level management of banks.

A number of former management executives of banks were deposed by the Central Bank and are presently facing trial for massive fraudulent deals. The amounts involved are several multiples of the figures for which any previous bank official has ever been charged. The expectation of the Central Bank was that big banks will be less inclined to indulge in sharp practices, unethical conduct, fraud or flouting of regulatory rules. The actual position as revealed by this paper is that the bigger the bank, the bigger is the size of fraudulent deals, the level of financial recklessness and capacity to play contrary to the rules of the game.

Table 12: Capital Deficiencies in Rescued/Weak Banks – December 2009

Bank	Equity Capital (N, Billion)
Intercontinental Bank	- 380.0
Afribank	-258.1
Union Bank	-238.3
Bank PHB	-194.6
FinBank	-125.9
Oceanic	-115.9
Wema Bank	-45
Unity Bank	0.7

The table shows the extent of capital deficiencies of the merged banks in 2009, with only one bank, Unity Bank recording a positive equity capital of N.7 billion. Source; Data trust

CONCLUDING COMMENTS

This paper examined the effects of mergers and acquisition on corporate growth and profitability. In particular, it set out to answer the research question of whether merger and acquisition is the best solution to bail out organization in financial crisis using Nigeria as a case study by simply analyzing the pre-banking sector consolidation era and the post-banking sector consolidation era in Nigeria. The paper tested propositions raised in the introductory section by using a simple survey method and drawing from secondary data collected from the financial statements, reports and Accounts of ten (10) sampled banks selected randomly out of the existing twenty five (25) recapitalized banks over the periods 2004-2008, with data collected covering the pre-merger and acquisition ear and the post-merger and acquisition era in the Nigerian banking industry. In carrying out the test, we analyzed the impact of bank consolidation on each of ten sampled banks, the entire banking industry performance ratios over the sample periods and the capital deficiencies in the recapitalized banks in the post consolidation era.

The paper concluded that, mergers and acquisitions served the objective of regulators to cure the banking system of financial distress only on a temporary basis. The analysis found that the expectation that building large banks through mergers and acquisition would provide a permanent solution to financial crises in the banking industry has not been realized. Given that, two years after the conclusion of mergers and acquisitions exercise in Nigeria, financial distress returned with an alarming proportion to the banking sector. In the immediate post merger environment, four of the banks could not find their feet and remained virtually distressed, warranting regulatory intervention in their operations.

The paper revealed the Central Bank's policy of consolidation under which mergers and acquisitions were applied has some fallout that made the industry vulnerable which includes amongst other things; the straight jacket policy of banking consolidation that prevented banks from specializing in various aspects of the financial services market, the seemingly over concentration and homogeneity of the products offered by all the banks in the industry and the lack of linkage between the banking sector and the real economy. About 70% of the executives interviewed agreed that the effect of merger and acquisition on shareholders is that the shareholdings will be diluted and dividend ratios will also be affected.

Also management style and structure will also change. From the overall analysis, it is found that merger and acquisition, if well consummated will increase banking sector profitability and enhance corporate efficiency but it is certainly not the best solution to bail-out corporate organization that have fallen deep into financial crises in a developing country where the financial sector has not attained an advanced and sophisticated stateOne of the limitations of this study is the use of banking sector performance indicators to analyze the effects of merger and acquisition on profitability and banking sector efficiency rather than us use testable time series data that would have allowed us develop a testable model. In addition to this limitation is the lack of linkage between the capital market and the collapse of the banking sector in the post consolidation years. Future research will seek to address these short comings by attempting to build an appropriate model to ascertain if the capital market collapse was actually responsible for the banking sector crisis that necessitated a bail-out fund of N620 billion and not the merger and acquisition as claimed by this paper.

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BIOGRAPHY

Feyi Sylvester Akinbuli, Ph.D., is a Chartered Accountant, Legal Practitioner, Solicitor and Advocate of the Nigerian Supreme Court and Accounting Lecturer at Distance Learning Institute, University of Lagos. He is a renounced researcher and academician with many publications at both National and International Journals. He is a member of many professional bodies. He can be contacted at University of Lagos, Distance Learning Institute, Akoka-Yaba, Lagos, Nigeria or E-mail: sfakinbuli@yahoo.com   Tel: +2348033311383.

Kelikume Ikechukwu is a Ph.D. student at the Swiss Management Center SMC University Switzerland. He is currently a full time faculty member of the Lagos Business School Nigeria. He can be contacted at the Lagos Business School, Department of Accounting, Finance and Economics, Km 22, Lekki-Epe Expressway, Ajah, P. O. Box 73688, Victoria Island, Lagos. Tel: +234-1-8991449, Ext. 1026. E-mail: ikelikume@lbs.edu.ng, kelikume2000@yahoo.com.

A SIMPLIFIED PERSPECTIVE OF THE MARKOWITZ PORTFOLIO THEORY

Myles E. Mangram, SMC University, Switzerland

ABSTRACT

Noted economist, Harry Markowitz ("Markowitz) received a Nobel Prize for his pioneering theoretical contributions to financial economics and corporate finance. His innovative work established the underpinnings for Modern Portfolio Theory—an investment framework for the selection and construction of investment portfolios based on the maximization of expected portfolio returns and simultaneous minimization of investment risk. This paper presents a simplified perspective of Markowitz' contributions to Modern Portfolio Theory, foregoing in-depth presentation of the complex mathematical/statistical models typically associated with discussions of this theory, and suggesting efficient computer-based 'short-cuts' to these performing these intricate calculations.

JEL: G30, G32, G11, G00, G20

KEYWORDS: Markowitz Portfolio Theory, Modern Portfolio Theory, Portfolio Investing, Investment Risk

INTRODUCTION

Harry Markowitz ("Markowitz") is highly regarded as a pioneer for his theoretical contributions to financial economics and corporate finance. In 1990, Markowitz shared a Nobel Prize for his contributions to these fields, espoused in his "*Portfolio Selection*" (1952) essay first published in *The Journal of Finance*, and more extensively in his book, "*Portfolio Selection: Efficient Diversification* (1959). His groundbreaking work formed the foundation of what is now popularly known as 'Modern Portfolio Theory' (MPT). The foundation for this theory was substantially later expanded upon by Markowitz' fellow Nobel Prize co-winner, William Sharpe, who is widely known for his 1964 Capital Asset Pricing Model work on the theory of financial asset price formation.

The problem, with respect to MPT, is that the majority of investigations of the topic focus on the highly complex statistics-based mathematical modeling and formulas which support the concept's theoretical assumptions. Typically, these investigations present their findings utilizing unnecessarily complicated rhetoric and intricate formulaic expressions. In opposite, the less complicated treatments are generally overly simplified, non-comprehensive, and lack the rigor requisite of serious scholars and practitioners.

In response to the above issues, this analysis focuses on Markowtiz' contributions to MPT in context of the theoretical and technological advances that have occurred since his theory first came to light in 1952. Since then, the field of financial investing has undergone major evolutions that include significant advances in the financial concepts and tools available to investors and investment professionals. While a substantial part of MPT is devoted to statistics-based mathematical modeling and formulas which support its theoretical assumptions, this analysis expands upon this body of literature by focusing on a simplified perspective of its key theoretical assumptions. At the same time, examples are strategically included to demonstrate how modern computing technology (specifically Microsoft Excel) can be used as highly efficient 'short-cuts' to make the often complex calculations needed to support MPT, thus allowing for more attention to be placed on MPT's theoretical underpinnings.

Following a review of foundational and current literature, this essay includes an overview of Modern Portfolio Theory and a general discussion of its framework and key concepts, including risk & return, expected return, measures of risk and volatility, and diversification. Finally, it closes with concluding remarks including analysis limitations and a possible perspective for future research.

LITERATURE REVIEW

The foundation for Modern Portfolio Theory ("MPT") was established in 1952 by Harry Markowitz with the writing of his doctoral dissertation in statistics. The most important aspect of Markowitz' model was his description of the impact on portfolio diversification by the number of securities within a portfolio and their covariance relationships (Megginson, 1996, p. 325). His dissertation findings, entitled "Portfolio Selection" (1952), were first published in *The Journal of Finance*. Subsequently, these findings were significantly expanded with the publication of his book, *Portfolio Selection: Efficient Diversification* (1959). About thirty years later, Markowitz shared a Nobel Prize for his MPT contributions to the fields of economics and corporate finance.

In 1958, economist James Tobin in his essay, "Liquidity Preference as Behavior Toward Risk," in *Review of Economic Studies*, derived the 'Efficient Frontier' and 'Capital Market Line' concepts based on Markowitz' works. Tobin's model suggested that market investors, no matter their levels of risk tolerance, will maintain stock portfolios in the same proportions as long as they "maintain identical expectations regarding the future" (Megginson, 1996, citing Tobin, 1958). Consequently, concluded Tobin, their investment portfolios will differ only in their relative proportions of stocks and bonds.

Independently developed by William Sharpe, John Lintner, and Jan Mossin, another important capital markets theory evolved as an outgrowth of Markowitz' and Tobin's earlier works—The Capital Asset Pricing Model (CAPM) (Megginson, 1996, p. 325). The CAPM provided an important evolutionary step in the theory of capital markets equilibrium, better enabling investors to value securities as a function of systematic risk. Sharpe (1964) significantly advanced the Efficient Frontier and Capital Market Line concepts in his derivation of the CAPM. Sharpe would later win a Nobel Prize in Economics for his seminal contributions. A year later, Lintner (1965) derived the CAPM from the perspective of a corporation issuing shares of stock. Finally, in 1966, Mossin also independently derived the CAPM, explicitly specifying quadratic utility functions (Megginson, 1996, p. 327). Since the earlier works of Markowitz, and later, Sharpe, Lintner and Mossin, there have been various expansions and iterations of MPT. The remainder of this essay addresses a perceived "simplicity" gap in that literature, and suggests a systemic failure of theorists and practitioners to capitalize upon the tremendous advances in finance and technology. It also specifically extends the conceptual premises of Wharton professor, Dr. Simon Benniga, in his book, *Principles of Finance with Excel* (2006), wherein he argues for a more simplistic approach to understanding and calculating the various mathematical concepts underlying MPT.

Modern Portfolio Theory

Technically speaking Modern Portfolio Theory ("MPT") is comprised of Markowitz' Portfolio Selection theory, first introduced in 1952, and William Sharpe's contributions to the theory of financial asset price formation which was introduced in 1964, which came be known as the Capital Asset Pricing Model ("CAPM") (Veneeya, 2006). Essentially, MPT is an investment framework for the selection and construction of investment portfolios based on the maximization of expected returns of the portfolio and the simultaneous minimization of investment risk (Fabozzi, Gupta, & Markowitz, 2002).

Overall, the risk component of MPT can be measured, using various mathematical formulations, and reduced via the concept of diversification which aims to properly select a weighted collection of investment assets that together exhibit lower risk factors than investment in any individual asset or

singular asset class. Diversification is, in fact, the core concept of MPT and directly relies on the conventional wisdom of "never putting all your eggs in one basket" (Fabozzi, Gupta, & Markowitz, 2002; McClure, 2010; Veneeya, 2006).

It is instructive to note here that Markowitz' portfolio selection theory is a 'normative theory.' Fabozzi, Gupta, & Markowitz (2002) define a normative theory as "one that describes a standard or norm of behavior that investors should pursue in constructing a portfolio…" (p. 7). Conversely, Sharpe's asset pricing theory (CAPM) is regarded as a 'positive theory'—one that hypothesizes how investors <u>actually behave</u> as opposed to how they <u>should behave</u>. Together, they provide a theoretical framework for the identification and measurement of investment risk and the development of relationships between expected return and risk. There remains a degree of debate as to whether or not MPT is interdependent upon the validity of asset pricing theory (Fabozzi, Gupta, & Markowitz, 2002). This analysis assumes that MPT is indeed independent of asset pricing theory, with the latter concept the subject of separate analysis.

Accordingly, for purposes of this writing, concentration is made on Markowitz' portfolio selection theory contributions. In that regard, these contributions will continue to be referred to as the collective MPT—also referred to the mean-variance analysis (with 'mean' used interchangeably with average or expected return, and 'variance' used to denote risk). Markowitz demonstrated that under certain conditions, an investor's portfolio selection can be reduced to balancing two critical dimensions: (1) the expected return of the portfolio, and (2) the risk or variance of the portfolio (Royal Swedish Academy of Sciences, 1990). Due to the risk reduction potential of diversification, portfolio investment risk, measured as its variance, depends upon both individual asset return variances as well as the 'covariances' of pairs of assets (McClure, 2010). In other words, Markowitz (1952) states that portfolio selection should be based on overall risk-reward characteristics, as opposed to simply compiling portfolios with securities with individually attractive risk-reward characteristics. These essential MPT terms are discussed below.

DISCUSSION

The framework for MPT includes numerous assumptions about markets and investors. Some of these assumptions are explicit, while others are implicit. Markowitz built his portfolio selection contributions to MPT on the following key assumptions (Bofah, n.d.; Wecker, n.d.; Markowitz, 1952): 1.) Investors are rational (they seek to maximize returns while minimizing risk), 2.) Investors are only willing to accept higher amounts of risk if they are compensated by higher expected returns, 3.) Investors timely receive all pertinent information related to their investment decision, 4.) Investors can borrow or lend an unlimited amount of capital at a risk free rate of interest, 5.) Markets are perfectly efficient, 6.) Markets do not include transaction costs or taxes, 7.) It is possible to select securities whose individual performance is independent of other portfolio investments. These foundational assumptions of MPT have been widely challenged. Many of the criticisms leveled at the theory are discussed later in this essay.

<u>Risk & Return</u>

Financial risk can be defined as deviation away from expected historical returns during a particular time period (Bofah, n.d.; McClure, 2010). However, Markowitz' portfolio selection theory maintains that "the essential aspect pertaining to the risk of an asset is not the risk of each asset in isolation, but the contribution of each asset to the risk of the aggregate portfolio" (Royal Swedish Academy of Sciences, 1990).Risk of a security can be analyzed in two ways: (1) stand-alone basis (asset is considered in isolation), and (2) portfolio basis (asset represents one of many assets). In context of a portfolio, the total risk of a security can be divided into two basic components: systematic risk (also known as market risk or common risk), and unsystematic risk (also known as diversifiable risk) (Lowering portfolio risk, 2011). MPT assumes that these two types of risk are common to all portfolios.

Systematic, risk is a macro-level form of risk—risk that affects a large number of assets to one degree or another (Ross, Westerfield, & Jaffe, 2002). General economic conditions, such as inflation, interest rates, unemployment levels, exchange rates or Gross National Product-levels are all examples of systematic risk factors. These types of economic conditions have an impact on virtually all securities to some degree. Accordingly, systemic risk cannot be eliminated.

Unsystematic risk, on the other hand, is a micro-level form of risk—risk factors that specifically affect a single asset or narrow group of assets (Ross, Westerfield, & Jaffe, 2002). It involves special risk that is unconnected to other risks and only impacts certain securities or assets. For example, the ill-received change in the announced consumer pricing structure of NetFlix resulted in extremely negative consumer response and defections, which resulted in lower earnings and lower stock prices for NetFlix. However, it did not impact the overall stock performance of the Dow Jones or S&P, or even that of entertainment and media industry companies for that matter—with the possible exception of its biggest rival Blockbuster Video, whose value increased significantly as a result of NetFlix' faltering market share. Other examples of unsystematic risk might include a firm's credit rating, negative press reports about a business, or a strike affecting a particular company (Helela, n.d.).

Unsystematic risk can be significantly reduced by the diversification of securities within a portfolio (McClure, 2010). Since, in practice, the returns on different assets are correlated to at least some degree, unsystematic risk can never truly be completely eliminated regardless of how many types of assets are aggregated in a portfolio (McClure, 2010; Royal Swedish Academy of Sciences, 1990).

Risk/Return Tradeoff

The concept of 'Risk and Return trade-off' relates to Markowitz' basic principle that the riskier the investment, the greater the required potential return. Generally speaking, investors will keep a risky security only if the expected return is sufficiently high enough to compensate them for assuming the risk (Ross, S. Westerfield, R., & Jaffe, J, 2002). The risk represents the chance that the actual return of an investment will be different than expected, which is technically measured by standard deviation (Risk-Return Tradeoff/Investopedia, n/d). A higher standard deviation translates into a greater risk and a requisite higher potential return.If investors are willing to bear risk, then they expect to earn a risk premium. Risk premium is "the return in excess of the risk-free rate of return that an investment is expected to yield" (Risk Premium/Investopedia, n/d). The greater the risk, the more investors require in terms of a risk premium. Some risks can be easily and cheaply avoided and, as such, bear no expected reward. "It is only those risks that cannot be easily avoided that are compensated (on average)" (Bradford, J. & Miller, T., 2009, p. 28). The risk-return tradeoff points only to the possibility of higher return of investments—not guarantees of a higher return. As such, riskier investments do not always pay more than a risk-free investment. This is what exactly makes them risky. However, historical analysis demonstrates that the only way for investors to earn higher returns is to make riskier investments (Bradford, J. & Miller, T., 2009).

In Markowitz' portfolio selection theory, risk is synonymous with volatility—the greater the portfolio volatility, the greater the risk. Volatility refers to the amount of risk or uncertainty related to the size of changes in the value of a security (Volatility/Investopedia, n/d). This volatility is measured by a number of portfolio tools including: (1) calculation of expected return, (2) the variance of an expected return; (3) the standard deviation from an expected return, (3) the covariance of a portfolio of securities, and (5) the correlation between investments (Wecker, n.d.; Ross, Westerfield, & Jaffe, 2002). Each of these measures of risk/volatility is discussed in the following sections.

Expected Return

In order to predict future returns (expected return) for a security or portfolio, the historical performance of returns are often examined. Expected return can be defined as "the average of a probability distribution of possible returns" (Expected Return, n.d.). Calculation of the expected return is the first step in Markowitz' portfolio selection model. Expected return, also commonly referred to as the mean or average return, can simply be viewed as the historic average of a stock's return over a given period of time (Benniga, 2006). Calculations for a portfolio of securities (two or more) simply involve calculating the weighted average of the expected individual returns (Ross, Westerfield & Jaffe, 2002). For a simplified methodology for calculating expected return see *Table 1*.

Table 1: Simplified Expected Return Calculations

Step #	Microsoft Excel Procedures and Functions
1	Calculate each individual periodic return (e.g. daily, monthly, annually) by dividing the adjusted close by the prior period's close, minus 1
2	Calculate the periodic portfolio return by multiplying each proportion of stock X, Y, etc., times the periodic average return
3	Add together the totals of the Periodic Portfolio Return
4	Factor in the periodic average (e.g. 1 year average) Portfolio Return by applying Microsoft Excel "*AVERAGE*" formula to the range of the periodic returns.

Table 1 demonstrates the simplified steps necessary to calculate the expected (Average) return of portfolio of stocks, utilizing Microsoft Excel. This expected return is also referred to as the Average or the mean return. Calculation formula basis information was provided by S. Benniga (2006).

A particularly glaring drawback of using the historical performance of returns to forecast expected returns is the uncertainty of the time-frame over which to sample (Fabozzi, Gupta, & Markowitz, 2002). Should the sample period include past performance over a five-year period; over a ten-year period; or over a longer period of time? The truth is that there is likely no correct answer because of the uncertainties and volatilities confronting markets. However, it is reasonable to assume that only after a market or security has experienced a lengthy and proven record of healthy and consistent performance, under varying economic and political conditions, that historical market performance can be deemed a fair barometer of future market performance (Fabozzi, Gupta, & Markowitz, 2002).

Portfolio Return Variance

As previously discussed, there are various ways to determine the volatility (risk) of a particular security's return. The two most common measures are variance and standard deviation. Variance is a "measure of the squared deviations of a stock's return from its expected return"—the average squared difference between the actual returns and the average return (Bradford, J. & Miller, T., 2009; Ross, Westerfield & Jaffe, 2002). The concept of standard deviation is discussed in the following section.

In context of a portfolio, variance measures the volatility of an asset or group of assets. Larger variance values indicate greater volatility. Similar to the formula for the expected return, the variance of more than two assets is also an extension of the two asset formula. When many assets are held together in a portfolio, assets decreasing in value are often offset by portfolio assets increasing in value, thereby minimizing risk. Therefore, the total variance of a portfolio of assets is always lower than a simple weighted average of the individual asset variances (Frantz & Payne, 2009). For a simplified methodology for calculating portfolio variance see Table 2.

Table 2: Simplified Portfolio Variance Calculations

Step #	Microsoft Excel Procedures and Functions
1	*Calculate Return of Individual Securities* - Calculate each individual periodic return (e.g. daily, monthly, annually) by dividing the adjusted close by the prior period's close, minus 1
2	*Calculate Percentage of Investment* – Calculate the percentage of investment represented by each security in the portfolio
3	*Calculate Portfolio Variance* – Calculate the variance of return for each respective security for the given period using Microsoft Excel formula VARP or DVARP (e.g. VARP(B:1:B10).

Table 2 demonstrates the simplified steps necessary to calculate the Variance of securities within a portfolio of stocks, utilizing Microsoft Excel. Calculation formula basis information was provided by S. Benniga (2006).

Analysts' observations indicate that the variance of a portfolio decreases as the number of portfolio assets increases (Frantz & Payne, 2009). According to Frantz & Payne (2009), increasing the number of portfolio assets significantly improves its Efficient Frontier (the efficient allocations of diversified assets for variable risks). To a degree, the returns on these types of assets tend to cancel each other out, suggesting that the portfolio variance return of these assets will be smaller than the corresponding weighted average of the individual asset variances (Frantz & Payne, 2009). Accordingly, maintaining portfolios comprised of a greater number of assets allows investors to more effectively reduce their risk.

In actuality, once the number of assets in a portfolio becomes large enough, the total variance is actually derived more from the covariances than from the variances of the assets (Schneeweis, Crowder, & Kazemi, 2010). The significance of this is that it reinforces the concept that it is more important how assets tend to move within a portfolio rather than how much each individual asset fluctuates in value.

Standard Deviation

Another common measure of volatility (risk) is the standard deviation of a security. Markowitz' portfolio selection model makes the general assumption that investors make their investment decisions based on returns and the risk spread. For most investors, the risk undertaken when purchasing a security is that they will receive returns that are lower than what was expected. As a result, it is a deviation from the expected (average) return. Put another way, each security presents its own standard deviation from the average (McClure, 2010). A higher standard deviation translates into a greater risk and a required higher potential return. The standard deviation of a return is the square root of the variance (Bradford, J. & Miller, T., 2009). The standard deviation of expected returns requires the statistical calculation of several factors which will help to measure the return's volatility. For a simplified methodology for calculating standard deviation see *Table 3*.

Table 3: Simplified Standard Deviation Return Calculations

Step #	Microsoft Excel Procedures and Functions
1	*Calculate Portfolio Return* – Calculate the percentage of investment represented by each security in the portfolio
2	*Calculate Portfolio Return* – Calculate the sum of securities from step 1 using Excel SUM formula (e.g., SUM(A1:A10)
3	*Calculate Standard Deviation* – Use Excel formula STDEVP or DSTDEVP to calculate the standard deviation of portfolio return (e.g. STDEVP (C1:C10).

Table 3 demonstrates the simplified steps necessary to calculate the Standard Deviation of Return for securities within a portfolio of stocks, utilizing Microsoft Excel. The Standard Deviation (equal to the square root of the variance), reduces the squared percentages of the variances back to a percent. Calculation formula basis information was provided by S. Benniga (2006).

Covariance of Return

Variance and standard deviation measure stock variability. However, if a measurement of the relationship between returns for one stock and returns on another is required, it is necessary to measure their *covariance* or *correlation*. These two concepts measure how two random variables are related (Ross, Westerfield & Jaffe, 2002). Correlation is addressed in the following section. Covariance is a statistical measure which addresses the interrelationship between the returns of two securities. If the returns are

positively related to each other, their covariance will be positive; if negatively related, the covariance will be negative; and if they are unrelated, the covariance should be zero (Ross, Westerfield & Jaffe, 2002). Markowitz argues that, "It is necessary to avoid investing in securities with high covariances among themselves" (Markowitz, 1952, p. 89). For a simplified methodology for calculating covariance see *Table 4*.

Table 4: Simplified Covariance of Return Calculations

Step #	Microsoft Excel Procedures and Functions
1	*Calculate Individual Returns* - Calculate each individual periodic return (e.g. daily, monthly, annually) by dividing the adjusted close by the prior period's close, minus 1
2	*Calculate Covariance of Returns* – Calculate the covariance of returns between selected pairs of security returns for the respective period(s) using Excel formula COVARP or COVARIANCE.P (e.g. COVAR(D:1:D10, E1:E10).

Table 4 demonstrates the simplified steps necessary to calculate the Covariance of Return for securities within a portfolio of stocks, utilizing Microsoft Excel. Covariance relates the returns of two stocks to each other. Calculation formula basis information was provided by S. Benniga (2006).

Correlation Coefficient of Returns

Correlation coefficient (also referred to as correlation) is the final measure of risk/volatility examined here. It determines the degree to which two variables are related. Correlation coefficient addresses some of the difficulties of analyzing the squared deviation units presented by the covariance of return measure (Ross, Westerfield & Jaffe, 2002). For a simplified methodology for correlation coefficient see *Table 5*.

Table 5: Simplified Correlation Coefficient of Return Calculations

Step #	Microsoft Excel Procedures and Functions
1	*Calculate Individual Returns* - Calculate each individual periodic return (e.g. daily, monthly, annually) by dividing the adjusted close by the prior period's close, minus 1
2	*Calculate Correlation Coefficient* – Calculate the correlation coefficient of returns between selected pairs of security returns for the respective period(s) using Excel formula CORR or CORREL (e.g. CORR(F:1:F10, G1:G10).

Table 5 demonstrates the simplified steps necessary to calculate the Correlation Coefficient of Return for securities within a portfolio of stocks, utilizing Microsoft Excel. The Correlation Coefficient divides the Covariance by the product of the Standard Deviations. Calculation formula basis information was provided by S. Benniga (2006).

MPT attempts to analyze the interrelationship between different investments. It utilizes statistical measures such as correlation to quantify the diversification effect (discussed below) on portfolio performance (Veneeya, 2006). In that regard, the correlation coefficient simply divides the covariance by the standard deviations of a pair of securities. If the correlation between the securities is positive, then the variables are positively correlated; if it is negative, then they are negatively correlated; and if the correlation is zero, then the variables are determined to be uncorrelated (Ross, Westerfield & Jaffe, 2002).

The degree of risk reduction is dependent upon the variance of the different assets, particularly from the correlation between the investment asset and its weight in the portfolio (Wecker, n.d.). The greater the proportion of uncorrelated assets in a portfolio, the greater the risk reduction.

Correlation is an important measure of diversification effect as it effectively measures the covariance of the returns of asset pairs. While covariance is meaningful because it influences portfolio risk, portfolio correlation coefficients is more useful because it standardizes covariance (Gibson, 2004). The 'imperfect' correlations (between +1.00 and -1.00) generally indicate a reduction in portfolio risks. Portfolio pairs with smaller correlation coefficient values suggest less risk than pairs with larger values (Hight, 2010). In any event, these risk factors should be carefully selected because the correlation between assets and risk factors is not always obvious (Amu & Millegard, 2009). Moreover, correlation may exist even if the factor and asset are not in the business or industry.

Diversification

The terms 'diversification' and 'Diversification Effect' refer to the relationship between correlations and portfolio risk. Diversification, a cornerstone of Markowitz' portfolio selection theory and MPT, is a risk reduction concept that involves the allocation of investments among various financial instruments, industries and other investment categories (Importance of diversification, 2009). In more simplistic terms, it relates to the well-known adage "don't put all your eggs in one basket." If the basket is dropped, all eggs are broken; if placed in more than one basket, the risk that all eggs will be broken is dramatically reduced (Fabozzi, Gupta, & Markowitz, 2002). Diversification can be achieved by investing in different stocks, different asset classes (e.g. bonds, real estate, etc.) and/or commodities such as gold or oil.

The objective of diversification is to maximize returns and minimize risk by investing in different assets that would each react differently to the same event(s). For instance, negative news related to the European debt crisis generally causes the stock market to move significantly lower. At the same time, the same news has had a general positive impact on the price of certain commodities such as gold. Accordingly, it is important that portfolio diversification strategies not only include different stocks within the same industry and outside of that industry, but that they should also include different asset classes, e.g. bonds and commodities (Importance of diversification, 2009). Diversification Effect refers to the relationship between correlations and portfolios (Gibson, 1990). When the correlation between assets is imperfect (positive, negative), the result is the diversification effect. It is an important and effective risk reduction strategy since risk reduction can be achieved without compromising returns (Hight, 2010). Accordingly, any savvy investor who is 'risk averse' will diversify to some degree.

Markowitz (1952) argues that diversification cannot eliminate all risk. As discussed earlier, investors are confronted with two main types of risk: systematic risk and unsystematic risk. The latter, unsystematic risk is also commonly referred to as 'diversifiable risk' (Frantz & Payne, 2009). This type of risk is the part of the risk equation that can be reduced or, according to some theorists, eliminated (Frantz & Payne, 2009). The bases for these types of risk are events that are unique to a particular company. Systematic risk (market risk), on the other hand, cannot be eliminated or reduced by diversification since it stems from external factors such as recessions, high interest rates, war or inflation, which 'systematically' affect a majority of all companies (Importance of diversification, 2009).It is important to note that while a truly diversified portfolio can often improve returns and significantly reduce unsystematic risk, it is highly unlikely that any amount of diversification can effectively eliminate all risk—there are simply too many variables. Furthermore, no amount of diversification can eliminate or reduce systematic risk, which affects all or most companies and markets at the same time.

Efficient Frontier

Efficient Frontier, also referred to as Markowitz Efficient Frontier, is a key concept of MPT (Efficient frontier/Money Terms, n.d.). It represents the best combination of securities (those producing the maximum expected return for a given risk level) within an investment portfolio (Efficient Frontier, 2010). It describes the relationship between expected portfolio returns and the riskiness or volatility of the portfolio. It is usually depicted in graphic form as a curve on a graph comparing risk against the expected return of a portfolio. The optimal portfolios plotted along this curve represent the highest expected return on investment possible, for the given amount of risk (McClure, 2010). Portfolios lying on the 'Efficient Frontier' represent the best possible combination of expected return and investment risk.

The relationship between securities within a portfolio is an important part of the Efficient Frontier. For instance, the price of some securities in a portfolio moves in the same direction, while the price in others moves in opposite directions. The greater the covariance (the more they move in opposite), the smaller the standard deviation (the smaller the risk) within the portfolio. One of the major implications of

Markowitz' Efficient Frontier theory is its inferences of the benefits of diversification (Efficient frontier/Investing Answers, n.d.). Diversification, as discussed above, can increase expected portfolio returns without increasing risk. Markowitz' theory implies that rational investors seek out portfolios that generate the largest possible returns with the least amount of risk—portfolios on the Efficient Frontier.

Theoretical Limitations

Despite its momentous theoretical importance, there are numerous critics of MPT who argue that its underlying assumptions and modeling of financial markets are not in line with the real world in many ways. Beginning with the key MPT assumptions itemized at the beginning of this analysis, it can be argued that none of these assumptions are entirely true, and that each of them, to varying degrees, compromises MPT.Generally, some of the key criticisms include:

Investor 'Irrationality' – The assumption is that investors are rational and seek to maximize returns while minimizing risk. This is contradicted by the observation of market participants who get swept up in 'herd behavior' investment activity. Investors, for instance, routinely go for 'hot' sectors, and markets regularly boom or bust because of speculative excesses (Morien, n.d.).

Higher Risk = Higher Returns – The assumption that investors are only willing to accept higher amounts of risk if compensated by higher expected returns is frequently contradicted by investor's contrary actions. Often, investment strategies demand that investors take on a perceived risky investment (e.g., derivatives or futures) in order to reduce overall risk without any discernible increase in expected returns (McClure, 2010). Additionally, investors have certain utility functions that may outweigh distribution of returns concerns.

Perfect Information – MPT assumes the timely and complete receipt by investors of all information relevant to their investment. In reality, world markets comprise information asymmetry (one party has superior information), insider trading, and investors who are simply better informed than others (Bofah, n.d.). This might explain why stocks, business assets and businesses are often purchased well below book or market value.

Unlimited Access to Capital – Another key assumption cited earlier is that investors have virtually unlimited borrowing capacity at a risk free interest rate. In real world markets, every investor has credit limits. Moreover, only the federal government can consistently borrow at the interest free treasury-bill rate (Morien, n.d.).

Efficient Markets – Markowitz' theoretical contributions to MPT are built upon the assumption that markets are perfectly efficient (Markowitz, 1952). Conversely, MPT's reliance on asset prices make it vulnerable to various market vagaries such as environmental, personal, strategic, or social investment decision dimensions. Additionally, it does not take into account potential market failures such as externalities (costs or benefits not transmitted through prices), information asymmetry, and public goods (a good that is non-rival and non-excludable) (Morien, n.d.). From another perspective, hundreds of years of 'rushes', 'booms', 'busts', 'bubbles', and 'market crises' demonstrate that markets are far from efficient.

No Taxes or Transaction Costs – Markowitz' theoretical contributions to MPT do not include taxes or transactions costs. To the contrary, real investment products are subject to both taxes and transaction costs (e.g. broker fees, administrative costs, etc.), and factoring these costs may indeed alter optimum portfolio selection.

Investment Independence – MPT assumes that it is possible to select securities whose individual performance is independent of other portfolio investments. However, market histories have demonstrated that there are no such instruments (McClure, 2010). During periods of market stress and extreme uncertainty, for example, seemingly independent investments do, in fact, exhibit characteristics of correlation.

Other less vocal, but equally valid, criticisms include: 1.) There is no such thing as a "truly risk-free" asset (McClure, 2010), 2.) Historical 'expected value' assumptions often fail to factor newer circumstances which did not exist during the historical data period, 3.) MPT only seeks to maximize risk-adjusted returns while disregarding environmental, personal, strategic or social factors.

CONCLUDING REMARKS

The methodology for data assimilation of this analysis included an extensive literature review on the topic of MPT and related concepts. This review included comparative analysis of earlier MPT works to those of more current economic theorists. In particular, derived data was generated from the current literary works of Benniga (2006). His evolved suggestions of the application of Microsoft Excel to various statistical computations of MPT were modified, tested, and verified against respective proven mathematical models.In spite of its shortcomings, including overly complicated mathematical musings and a reliance on oft disproven theoretical assumptions, MPT has established itself as the gospel of modern financial theory and practice. The gist of MPT is that the market is difficult to beat and those who are successful in doing so are those who effectively diversify their portfolios and take above-average investment risks. In any event, Markowitz' portfolio selection contributions to the MPT model can be simplified (as attempted here) and can be solved more efficiently using modern financial tools such as Microsoft Excel. In that regard, Wharton's Dr. Benniga (2006) makes an excellent argument that "Excel is a great statistical toolbox—someday all business-school statistics courses will use it" (p. 338).

The important thing to remember is that the model is just a tool—albeit perhaps the biggest hammer in one's financial toolkit. It has been nearly sixty years since Markowitz first expounded on MPT and it is unlikely that its popularity will wane anytime in the near future. His theoretical conclusions have become the springboard for the development of other theoretical analysis in the field of portfolio theory. Even so, Markowitz' portfolio theory is subject to, and dependent upon, continued 'probabilistic' growth and expansion. Where this progression leads is unknown since one cannot reasonably divine the expansion of human knowledge, or accurately forecast the capacity for relevant technological advancement. "It is a story," stated Markowitz (1952), "of which I have read only the first page of the first chapter" (p. 91).

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BIOGRAPHY

Myles E. Mangram is Founder and CEO of EnTech Capital, a global clean energy consultancy and business development firm. He is also founder of the National Institute of Clean Energy (in academic partnership with IBM), a non-profit research institute dedicated to the worldwide advancement of clean energy technology. His academic background includes an MBA from Columbia Southern University and current Doctorate of Business Administration candidacy at SMC University (Switzerland). His research appears in journals such as *Journal of Strategic Market* and *Journal of Trading*, and via books published worldwide by Futures Systems, Inc. and Baskerville Communications Corp. He can be reached at EnTech Capital, 2060 Avenida de los Arboles Suite 470-D, Thousand Oaks, California, U.S.A, (805) 493-1120, or myles@entechcapital.com.

JOB SATISFACTION AS A PREDICTOR OF ORGANIZATIONAL CITIZENSHIP BEHAVIOR: AN EMPIRICAL STUDY

Samanvitha Swaminathan, Bharathidasan Institute of Management, Tiruchirapalli, India
P. David Jawahar, Bharathidasan Institute of Management, Tiruchirapalli, India

ABSTRACT

Job Satisfaction at work has an influence on the level of Organizational Citizenship Behavior and in turn on work performance. The aim of this study is to determine and establish a relationship between Job Satisfaction (JS) and Organizational Citizenship Behavior (OCB) among faculty in higher education institutions. In this study we have employed the Wong's Job Satisfaction and Organ's Organizational Citizenship Behavior inventories to quantify the JS and OCB levels respectively. Samples from 252 faculty members in Tamil Nadu, India were used to obtain the empirical base for the study. Correlation and multiple regression analyses were used to interpret the data. Our results demonstrate that there is a positive relationship between JS and factors that constitute the OCB.

INTRODUCTION

Faculty members who are satisfied with their jobs exhibit better Organizational Citizenship Behavior (OCB) and in turn it reflects on their work performance. Job Satisfaction (JS) becomes an important aspect for the faculty members as dissatisfaction affects the teaching process and influences other roles played by the faculty. Job satisfaction is "the emotional reaction of a worker has towards his/her job after a comparison of the outputs he /she expects or desires with real outputs" (Cranny et al., 1992). Job satisfaction is the sense of inner fulfillment and joy achieved when performing a particular job. Organizational Citizenship Behavior is also known as the extra role behavior, which is the act of performing the job beyond the job requirements (Organ, 1988). Hence, the aim of the present study is to investigate the relationship between Job Satisfaction and Organizational Citizenship Behavior among the faculty of higher learning institutions in Tamil Nadu, India.This article summarizes the review of literature, the model developed, data and methodology, results and discussion of the research and the conclusion.

REVIEW OF LITERATURE

Job Satisfaction (JS)

Oshagbemi (2000) defines JS as "an emotional response that occurs as a result of the interaction between the worker's values concerning his/her job and the profits he/she gained from his/her job". JS is the state of pleasure the employee gains from the job and experience (Tantiverdi, 2008). Robbins (2000) conceptualized JS as the overall feelings or attitudes about the job they perform. JS refers to the "primary affective reactions of individuals to various facets of the job and the job experiences" (Igbaria and Guimaraes, 1993). Increase in JS increases the performance in the job. JScomprise of task satisfaction, employment satisfaction and market satisfaction (Putman, 2002).Several dimensions such as satisfaction with compensation, satisfaction with top management, satisfaction with promotions and satisfaction with coworkers have been attributed to JS (Vitell, 2008).

JS is the extent to which people enjoy their job (Spector, 1997). JS plays a critical role since it affected the behavior of employees,which in turn has an influence onthe performance and functioning in the Organization (Rowden, 2002). JS is considered as an internal state of an employee, which is given by evaluation of the job with a certain degree of favor or disfavor (Brief, 1998; Floyd & Wooldridge, 1997; Whittaker & Marchington, 2003). The study reveals that demographic factors such as age (Clark & Oswald, 1996) and the level of education (Clark, 1996)are important factors that influence JS.

Typical characteristics of the working environment like union membership (Borjas, 1979; Miller, 1990), size of the workplaces (Idson, 1990) and the impact of permanent and part–time jobs (Wooden & Warren, 2003) contribute to the JS of the employees. Moreover, JS is also affected by the combination of work requirements with other roles like family roles (Gibb, 2003; Mortimer et al., 1986).A negative estimate of the source of the family conflicts can also cause job dissatisfaction in employees (Lazarus, 1991). In challenging work environments, education and training of the employees influence JS (Brown & McIntosh, 1998). Heller, Judge and Watson (2002) linked JS mainly to two factors namely situational factors (sociological perspective) and personal factors (psychological perspective). Situational factors include job related conditions like pay, opportunities for promotion and working conditions and job characteristics such as task identity, task significance, skill variety, autonomy and feedback. Personal factors include personality disposition, traits, self–esteem, motivation and emotions (Dormann & Zapf, 2001).

Organizational Citizenship Behavior (OCB)

Organizational Citizenship Behavior was first illustrated in the work of Bateman and organ (1983) 24 years ago and is recently gaining momentum. Organ (1988) revealed that OCB could affect the performance of the individual and in the organization. Various studies have demonstrated that OCB has a positive influence on improving the performance in the Organization (Podsakoff & Mackenzie, 1994; Krllowicz & Lowery, 1996; Podsakoff, Ahearne & Mackenzie, 1997).

Organ (1988) explains OCB as a distinct behavior, which is not directly recognized by the formal reward system but in the average promotes the organizational performance. Understanding how OCB works is crucial in organizations because of the downsizing and rightsizing in response to the economic pressures (May–Chiun Lo et al.,2009).Recent studies reveal the drastic growth of OCB researches in management related areas like strategic management, leadership, human resource management etc. (May–Chiun Lo et al., 2009). Literature reveals that OCB has contributed positively to Organizational outcomes such as service quality (Bettencourt & Brown, 1997; Bell & Mengue, 2002), Organizational Commitment (Podsakoff, Mckenzie & Bommer, 1996), Job Involvement (Dimitriades, 2007), leader–member exchange (Bhal, 2006; Lo, Ramayah & Jerome, 2006).

Organ (1988) views OCB as the extra–role behavior since it is the act of job performance beyond the stated job requirement. Employees go beyond the contract signed by them at the time of entering the organization and they perform non–obligatory tasks without expecting any rewards or recognition (Organ, 1988). It is demonstrated that the support given by the leaders is the strongest predictor of significant OCB by the employees (Lepine et al.,2002). OCB has also been shown to enhance the social attractiveness in a work unit (Aquino and Bommer, 2003). Researches reveal that there are five basic personality factors affecting most of the variance in personality (Costa & McCrae, 1992) and these dimensions are called as the Big Five dimensions, which include conscientiousness, altruism, courtesy, sportsmanship and civic virtue.These dimensions are explained below.

Conscientiousness: Conscientiousness indicates if a particular individual is organized, accountable and hard working (Lo et al., 2009). Organ (1988) defined conscientiousness as "the dedication to the job,

which exceed formal requirements such as working long hours, and volunteer to perform jobs besides duties. Literature also reveals that conscientiousness can be related to organizational politics among employees (McCrae & Costa, 1987).

Altruism: Smith, Organ and Near (1983) defined altruism as "voluntary behaviors where an employee provides assistance to an individual with a particular problem to complete his/her task under unusual circumstances". It refers to the employee helping his / her colleagues in their work (May–Chiun Lo et al, 2009). Podsakoff et al. (2000) has proved a significant relationship between altruism and positive affectivity.

Courtesy: Courtesy refers to behavior that prevents problems and takes the essential steps to lessen the results of the problem in future (May–Chiun Lo et al., 2009). Courtesy also means members encouraging other members in their work. Literature reveals that a courteous employee would help reduce the intergroup conflict and thus reduce the time spent on conflict management activities (Podsakoff et al., 2000).

Sportsmanship: Organ (1988) defined sportsmanship as " the behavior of warmly tolerating the irritations that are an unavoidable part of nearly every organizational setting". It has been demonstrated that good sportsmanship enhances the morale of the work group and thus reduces the attrition rate (Podsakoff and Mackenzie, 1997).

Civic Virtue: Deluga (1998) defines civic virtue as "the subordinate participation in organization political life and supporting the administrative function of the organization". It refers to the employees' participation in the political life of the organization like attending meetings, which are not really required by the firm and thus keeping up with the changes in the organization (Organ, 1988). Graham's findings reveal that the subordinates should have a responsibility to be a good citizen of the organization (Graham, 1991). Moreover, it has been shown that civic virtue improves the quality of performance and aids in reducing the customer complaints (Walz & Niehoff, 1996). The three dimensions mentioned above namely the civic virtue, conscientiousness and altruism are together termed as help oriented behavior (Irene Hau–Siu Chow, 2009). Hence in this study, we have tried to establish a relationship between JS and help oriented behavior on one hand and JS and courtesy on the other.

Job Satisfaction and Organizational Citizenship Behavior

The relationship between JS and OCB can be represented in several ways. Organ & Konovsky (1989) reveal that JS is the strongest variable that has a significant relationship with OCB. Fifteen independent studies have shown that there is a significant relationship between JS and OCB (Organ & Lingl, 1995). For example, Bateman & Organ (1983) found a significant relationship between JS and OCB among University employees. Similarly, Konovsky and Organ (1996) surveyed hospital employees and revealed that JS had a significant relationship with all the five dimensions of OCB.Lowery, Beadles, and Krilowicz (2002) surveyed the blue–collar workers and proved a significant relationship between JS and OCB. Strong influence of conscientiousness on OCB was displayed, which led to greater Job satisfaction (Lapierre and Hackett, 2007).It was also established that higher level of OCB led to higher JS. A significant relationship was proved between JS and OCB, moderated by team commitment in self–directed teams (Foote & Tang, 2008). Moore and Love (2005) claimed that JSwould have a positive influence on an IT professional's OCB. Strong relationship has been proved between JS and OCB (Smith, Organ & Near, 1983; Organ, 1988). Employee satisfaction becomes essential as it leads to OCB (Organ & Ryan, 1995). There are a fewstudies, which conclude that there is no relationship between JS and OCB.For example, it has been reported that JS is not a predictor of OCB (Farh et al., 1990). Similarly, Moorman (1991) has demonstrated thatJS has no relationship with OCB while procedural justice relates to four out of five dimensions of OCB.

Hence, these literature lead to the following hypothesis:

Hypothesis: There is a positive relationship between Job satisfaction and the two factors of OCB (Help Oriented Behavior and Courtesy)

MODEL

The aim of the present study is to evaluate the relationship between JS and OCB.In order to analyze this relationship, a model has been developed:

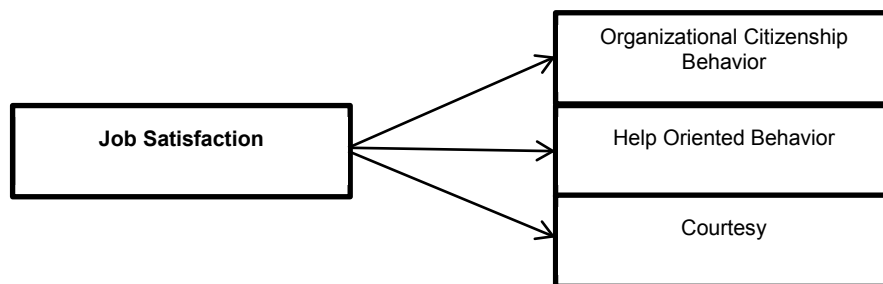Figure 1: Research Model Showing the Relationship Between Job Satisfaction and Organizational Citizenship Behavior

Figure 1 shows the relationship between job satisfaction and organizational citizenship behavior.

DATA AND METHODOLOGY

Data and Sample: In this study, faculty members from varied streams including arts, science and engineering institutions were provided with questionnaires. The designations of the faculty ranged from Lecturer to Deans. A total of 252 self–administered questionnaires were considered in this study. Based on the review of literature, a detailed questionnaire was developed. The questionnaire had two sections namely Job Satisfaction and Organizational Citizenship Behavior. The questionnaires for Job Satisfaction was adapted from Wong (2010),which had five sub–sectionsand Organizational Citizenship Behavior was adapted from Organ (1988), which consisted of 20 sub–sections.

Measurements: In the given Hypothesis, Job Satisfaction was considered as the dependent variable and the factors in OCB as independent variables. The dependent variable was conceptualized by the individual's attitude towards the job and is operationalized by using a set of 7 likert scale statements to measure job satisfaction (Wong, 2000). The independent variable is conceptualized by the ability to accept responsibilities and to prevent other's problems and reduce the inter group conflict and is operationalized by using a 7 likert scale statements to measure Organizational Citizenship behavior (Organ, 1988).

Statistical Tools: The data were analyzed by using Factor analysis, Correlation and Regression analyses to test the hypotheses. Statistical Package for Social Sciences (SPSS version 18.0) was used to analyze and interpret the data.

RESULTS AND DISCUSSION

Factor analysis was performed with 1.5 as the Eigen value to improve the strength of the factors.Then, two factors were extracted when the rotation converged in there iterations. The two factors were Help Oriented Behavior (Civic virtue, conscientiousness and altruism) and courtesy as another factor. Out of

the 20 items in the questionnaire, the first 13 items were categorized as help oriented behavior and the remaining seven under courtesy (May–Chiun Lo et al., 2009).

Table 1: Rotated Component Matrix

	Item	Component	
		1	**2**
1.	I am willing to assist new colleagues to adjust to the work environment	**0.786**	0.248
2.	I am willing to stand up to protect the reputation of the institution.	**0.768**	0.284
3.	I am willing to help colleagues solve work related problems.	**0.764**	0.371
4.	I often arrive early and start to work immediately.	**0.751**	0.088
5.	I am eager to tell outsiders good news about the institution.	**0.695**	0.222
6.	I am willing to coordinate and communicate with colleagues.	**0.673**	0.359
7.	I actively attend institution meetings.	**0.670**	0.183
8.	I take one's job seriously and rarely make mistakes.	**0.668**	0.246
9.	I make constructive suggestions that can improve the operations of the institution.	**0.639**	0.332
10.	I am willing to cover work assignment for colleagues when needed.	**0.637**	0.278
11.	I comply with the institution rules and procedures even when nobody watches and no evidence can be traced.	**0.620**	0.198
12.	I avoid consuming a lot a time complaining about trivial matters.	**0.558**	–0.156
13.	*I do not mind taking on new challenging assignments.*	*0.425*	*0.363*
14.	I avoid taking actions that hurt others.	0.193	**0.753**
15.	I avoid hurting other people's right to common / shared resources (including clerical help, material etc.)	0.451	**0.678**
16.	I perform only required tasks.	–0.094	**0.676**
17.	I do not initiate actions before consulting with others that might be affected.	0.473	**0.578**
18.	*I try to avoid creating problems for colleagues.*	*0.545*	*0.558*
19.	I try hard to self – study to increase the quality of work outputs.	0.483	**0.513**
20.	I avoid focussing on what's wrong with his or her situation.	0.110	**0.466**

Principal component analysis was used as the extraction method and varimax with kaiser normalization was used as rotation method. the rotation converged in three iterations. items in italics were not used in further analysis due to cross loading.

The analysis extracted a two–factor solution, each with Eigen values above one, which explains 52.23% of the total variance while the original literature explained 59.64%. This indicates that there could be more factors influencing OCB when more items are generated using the expert opinion.The KMO was 0.930 indicating a meritorious level based on Kaiser and Rice (1974) and the Barlett's test for sphericity was significant (χ^2 = 2371.110, p = 0.01).The Measure of Sampling Adequacy(MSA) was found to be above 0.7 for all 20 items (Hair *et al.*, 2009). Based on the rotated component matrix, out of the 20 items, 2 items were dropped due to cross loading in another component.

The Cronbach alpha for the two factors of OCB and JSare given in Table 2.

Table 2: Reliability Analysis

Job satisfaction	**0.8430**
Help Oriented Behavior	0.9117
Courtesy	0.8086

This table shows the results of the reliability analysis.

In order to examine the relationship between Job satisfaction, the factors in Help Oriented Behavior (Civic Virtue, Conscientiousness and Altruism) and Courtesy, correlation and regression analyses were employed. The two variables (Help Oriented Behavior and Courtesy) were used as independent variables with JS as a dependent variable. The regression model was fitted. The model explains 44.7% of variance with JS and was found to be significant (F = 100.632, sig = 0.000).

Table 3: Statistical Results

R Square	44.7%
F Value	100.632
Significance	0.000
Beta of Help Oriented Behavior	0.578
Beta of Courtesy	0.336
T value	105.954
VIF factor	1.000

This table shows the statistical results.

When the betas of the two variables are compared, Help Oriented Behavior measured 0.578 and Courtesy measured 0.336, which signifies that Help Oriented Behavior has a stronger impact on JS than Courtesy. In order to find out the relationship between JS, Help Oriented Behavior and Courtesy, a multiple linear regression model was used in which the factors in Help Oriented Behavior and Courtesy were considered as explanatory variables and JS as dependent variable. The results of the regression model demonstrated that there was a significant relationship between JS and the two factors of OCB. This can be inferred from the t value and its associated p value. The two factors of OCB explain 0.447 of variations in JS (please refer r^2 value) showing the strength of relationship between JS and the two factors of OCB are moderate. By referring the F value and its p value, it may be concluded that the model is valid and there is a correlation between JS and the two factors of OCB. To verify the existence of the mentioned relationship, a multi collinearity test was carried out. The result revealed the VIF factor of the model was 1.000 indicating the non–existence of multi collinearity problem. Thus the results indicate the following relationship for JS with Help Oriented Behavior and Courtesy (Table 3). Job Satisfaction = 0.630Help Oriented Behavior + 0.366Courtesy + error term.

CONCLUSIONS

This study confirms that OCB is a multidimensional concept consisting of Help Oriented Behavior and Courtesy. Factor analysis, correlation and regression analyses were used to test the hypotheses. Statistical Package for Social Sciences (SPSS version 18.0) was used to analyze and interpret the data. A positive relationship has been established between JS and OCB. However, the relationship was found to be moderate and the results indicate that many factors influence JS and OCB may not be the only factor. This study highlights the need for strengthening OCB scores by the faculty members since this has been found to affect the satisfaction at their jobs.

Limitations: This research has been carried out with the faculty of higher learning institutions as the target audience and hence the results are indicative since only 252 samples were considered out of a large population size. There can be further comparisons between faculty members in engineering, arts and science institutions and can also be based on demographic details like gender, designation in the institution, departments, teaching experience and their qualification.

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BIOGRAPHY

Dr. David Jawahar, corresponding author, is a Professor at the Bharathidasan Institute of Management, Tiruchirapalli, Tamil Nadu, India. He has more than 18 years of experience in academics, research and industry. His research interests are in the area of understanding and managing emotions in the workplace and in employee empowerment. He has published many papers in this area and teaches Organizational Behavior, Human Resource Management and other HR related subjects.

Samanvitha Swaminathan is an MBA graduate from ICFAI, Hyderabad and currently pursuing Ph. D. in Management from Bharathidasan Institute of Management, Tiruchirapalli, Tamil Nadu, India. Currently, she is working on the relationship between Emotional Intelligence, Job Satisfaction and Organizational Citizenship Behavior.

ECONOMIC BENEFITS ASSOCIATED WITH THE VISA WAIVER PROGRAM – A DIFFERENCE-IN-DIFFERENCE APPROACH

Xiaochu Hu, George Mason University

ABSTRACT

This study evaluates the economic benefit that the Visa Waiver Program (VWP) brings to the United States, including decreased spending on administration and increased tourism. To capture the "net-effect" of VWP due to increased tourism, this study conducts a semi-experimental evaluation by introducing a control group – it pairs a VWP member country with a non-member country. The results show a net increase of 3-4.5 tourism/business trips per thousand population for a VWP participating country. It concludes that in 2010, because the VWP was in place, the U.S. government has saved from 1.9 billion to 3.2 billion for the cost of interviewing visitors. In sum, this research provides more concrete evidence to the discussion of VWP's future expansion.

INTRODUCTION

The VWP is perhaps the most important policy that shapes the mobility of tourist and business travelers to the United States. Administered by the Department of Homeland Security (DHS), the VWP enables participating country nationals to travel in the United States visa-free for up to 90 days for tourist and business purposes. In 2010, there are more than 40 million tourists and business travelers entering the United States, accounting for 87 percent of the total non-immigrant admissions to the United States. Among all tourists and business travelers, 45 percent entered the country under the VWP (DHS, 2011). The VWP is clearly shaping the world population's (at least participating countries' nationals for now) mobility to the United States. The VWP's primary goals are to "eliminate unnecessary barriers to travel, stimulating the tourism industry, and permitting the Department of State to focus consular resources in other areas." (U.S. Department of State, 2012) The program was first introduced in 1986 as a pilot program with only UK and Japan as member countries. Nationals of VWP countries must meet eligibility requirements including a less than 3 percent of non-immigrant visa refusal rate and no conflict with law enforcement or US security interests. Countries can go in and out of the program depending on the risk they present violating the US immigration law or national security. Currently, 36 countries participate in the VWP, 23 of which are European Union (EU) members (Table 1) (U.S. Department of State, 2012).

The VWP forms a close business and national security alliance between the U.S. and participating countries and thus bears great diplomatic significance. Member countries offer reciprocity to entitle US citizens to travel visa-free as well as share the national security information. Countries view participating in the VWP a diplomatic privilege with the United States. Currently, 11 countries with interest of joining the program are waitlisted in the "road map" and to be discussed. Since the program came into being in 1986, 29 countries have joined the alliance until 2001. After 9/11, concerns that WVP being exploit by terrorists or other criminals roared and the growth slowed down. During the recent economic recession, President Obama signed the Travel Promotion Act of 2009 (TPA) into law in April 2010 to promote more countries to join the VWP. "When international visitors come to the United States they spend money on a

wide range of goods and services that support U.S. jobs," said Secretary of Commerce Gary Locke. "Creating a global tourism promotion program to encourage international visitors to vacation in America will help spur economic growth and create more jobs." (Department of Commerce, 2010)

Table 1: Variation of VWP Participation Countries over Years

year	# of Countries Entered VWP	Changes Highlights
1988	2	Japan, UK
1989	6	France, Germany, Italy, Netherlands, Sweden, Switzerland
1991	13	Andorra, Austria, Belgium, Denmark, Finland, Iceland, Liechtenstein, Luxembourg, Monaco, New Zealand, Norway, San Marino, Spain
1993	1	Brunei
1995	1	Ireland
1996	2	Argentina, Australia
1997	1	Slovenia
1999	3	Portugal, Singapore, Uruguay
2002	-2	Argentina, Uruguay
2008	8	Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia, South Korea and Malta
2010	1	Greece
Total	**36**	
Road map	*11*	*Croatia (2011), Bulgaria, Cyprus, Poland, Romania, Argentina, Brazil, Uruguay, Israel, Taiwan, Turkey*

This table shows that over time 36 countries have successfully joined and stayed in the program. Source: U.S. Department of Commerce.

The current debates of VWP extension to more countries are mainly around concerns of national security and illegal immigration caused by VWP status over-stayers. GAO, DHS and many other authorizations have completed evaluations on the program in terms of these concerns. However few studies focus on the economic benefit evidence to determine the economic impact the VWP has exerted on the US economy, nor did they provide satisfying result. This study adds to the literature by offering the substantial economic benefit analysis by introducing a difference-in-differences approach. The rest of the paper include a literature review, which discusses the literature on this economic impact of the VWP; data and methodology, which introduces the data source and methods this study uses; results, which presents the analytical results of the study; and concluding comments.

LITERATURE REVIEW

Studies advocating expansion of the program mainly focus on the increased monetary benefits and the strengthened strategic diplomatic advantages the expanded program will bring to the U.S. In a recent report of the Council on Foreign Relations, Alden pointed out that "by limiting the program, the United States is missing out on considerable economic, political and security benefits". (Alden, 2012) Alden especially mentioned that for the potential eligible counties on the VWP road map that are also demonstrating fast-growing economies, such as Argentina, Brazil and Taiwan, the United States is losing the competition for tourists to West Europe and the United Kingdom, where travel is made easier.

Researches have hypothesized and confirmed fact that the VWP will encourage travelers to the U.S. In regard of determination of this economic benefit, using data from Commerce and the Travel Industry Association of America, a GAO report finds that "in 2000, travelers from visa waiver countries spent an estimated $39.6 billion in the United States, accounting for 57 percent of overseas tourist spending" and "average spending per traveler from visa waiver countries in 2000 was $2,253" (GAO, 2002). GAO also points out that according to the World Travel and Tourism Council study, "visa waiver travelers' direct and indirect spending within the United States added between $75 billion and $102 billion to the U.S. gross domestic product in 2000" (GAO, 2002). A work done by Discover America Partnership's indicated that in 2008, foreign travelers spent more than $100 billion in the United States and the VWP accounts for $48 billion of the spent by foreign travelers in 2008 (Discover America Partnership, 2007).

One very important factor in this benefit analysis is the average spending per person during the stay in the United States for business and pleasure, which is often calculated by surveys. A report by the Heritage Foundation in 2009 consolidated other government data on international visitors' expenditure in detail, concluding that each visitor spends an average of 3,791 USD, three times of a domestic traveler (McNeill et al., 2009). According to more recent news released by the White House, Chinese and Brazilian tourists currently spend more than 6,000 USD and 5,000 USD respectively each, per trip. (The White House, 2012)   However, the other very important factor - the number of tourist and business travelers to the U.S. as a result of the VWP has not been clearly calculated. It is insufficient for the above studies to claim the amount of travelers has been generated by the VWP unless separating the net effect of the VWP from the tourist and business flows that would happen without the existence of VWP. It is necessary to introduce a country not exposed to the treatment as a control group, because the difference-in-differences would remove the bias caused by secular trends.   In terms of savings on administrative cost, GAO estimated that "if the program were eliminated, we estimated that the department's initial costs to process the additional workload would likely range between $739 million and $1.28 billion and that annual recurring costs would likely range between $522 million and $810 million." (GAO, 2002)

At individual level, in the absence of VWP, potential travelers would have to visit a U.S. consulate or embassy, which is usually not located in their city of residence, for a face-to-face interview for a visa. They even have to buy special calling card to phone the U.S. consulate to schedule the interview. In addition to this domestic traveling hassle, there is a non-refundable application fee of $100-$200. On the other hand, since the VWP participating countries will waive visa for the U.S. citizens to visit their land as well, in the absence of VWP, "Americans then might have to pay a visa fee of around $100 for each country visited" (McNeill et al., 2009) in addition to the domestic traveling cost.

DATA AND METHODS

This study calculates the economic benefit associated with VWP mainly in two ways: the net increased economic gain through VWP-encouraged tourist and business trips; saving in administrative cost for the U.S. government. The first part of the analysis uses non-immigrant admission data, which could be found in DHS immigration yearbook. The study selects one European country (Malta) and one Asian country (South Korea), both joined the VWP in 2008, and two countries that are not participating currently (Cyprus and Taiwan) but with relatively comparable traits (demographic, socio-economic advancement). Each pair is then considered as a quasi-experiment with a control group. I took two measurements to gauge the level of tourist/business trips. First is to use the percentage of tourists/business travelers over all kinds of non-immigrant travelers within the country. Second is to use the tourists/business travelers per thousand population within the country.

For each measurement, using 2005-2008 data values as pre-treatment period, I fit a linear regression line to project the 2009 and 2010 values; the differences between the projected values of 2010 and the real values of 2010 is measured. I finally subtract the difference between projected vales from the difference between the real values to get the net effect of the VWP. Notice that cost at the individual level – both foreign country nationals and the U.S. citizens – is not considered in this study. The second part of the analysis is to calculate the saving in administration cost with VWP. I built the calculation on existing saving of cost evaluations by GAO, which is the so far the most systematic administration cost calculation that I could find. GAO estimated the total cost if VWP is eliminated in 2002. It is then translated to per interview rate, and converted to the 2010 context. The 2002 report contains the so far the most systematic administration cost calculation assuming the VWP is not in place. This cost without program equals the saving on administration due to the program (benefits).

Figure 2 is a replication of Figure1 with a European pair of countries. The result is very similar. In 2010, about 13 person/times visited the U.S. from Malta, compared to the projected value of 11, despite the recession. In Cyprus where people need to apply for a visa to travel to the U.S., about 8 person/times traveled to U.S., less than the projected value of 9, probably due to the shock of the recession. The difference in differences is about 3.1 trips per thousand population.

Figure 2: Annual Tourism and Business Trips to the U.S.A. per Thousand Population
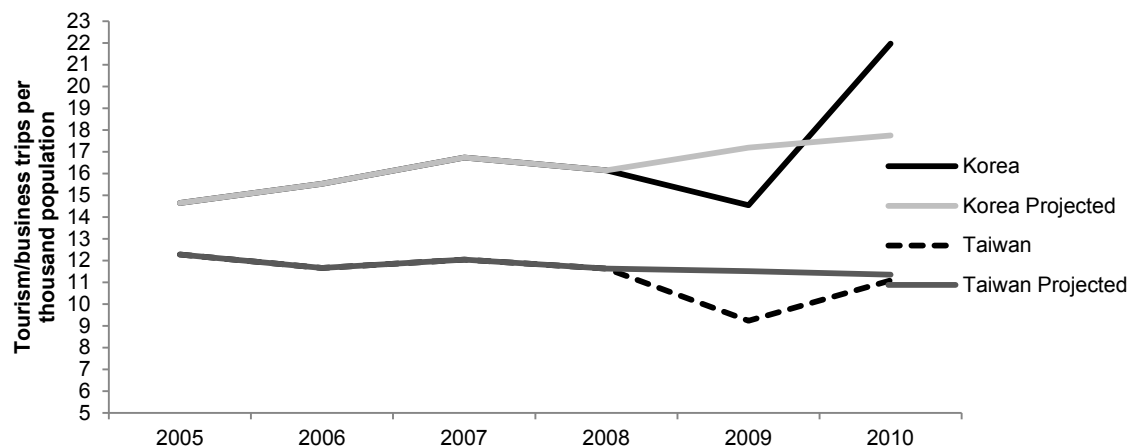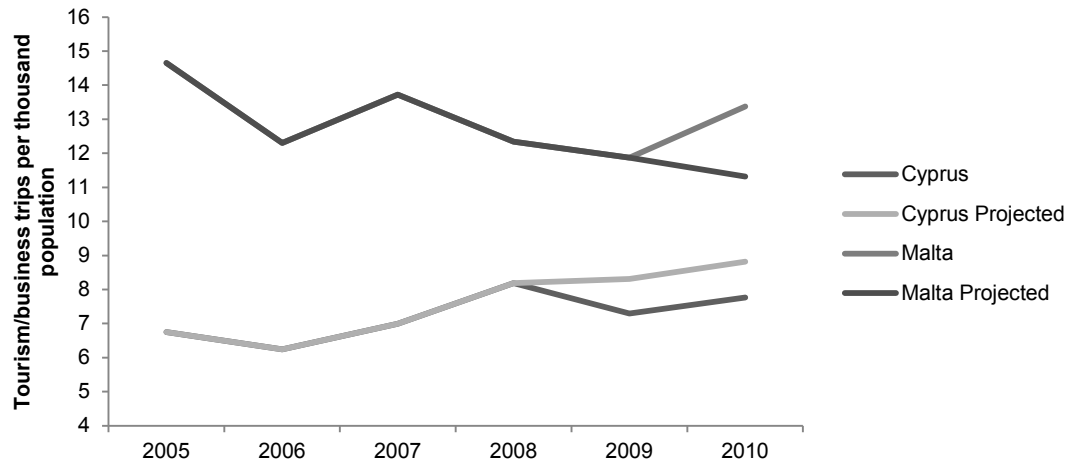
This figure shows that Malta's joining the VWP in 2008 immediately stopped the decline in tourism/business travel in 2009, and made the trips exceed its projection based on historical trend. On the other hand, the non-participating country, Cyprus, hosted fewer tourists than its own projection. Specifically, the calculation of the "difference-in-difference" is (Malta – Cyprus) – (Malta Projection – Cyprus Projection) = (13.4-7.8)-(11.3-8.8) =3.1 Data Source: U.S. Department of Homeland Security Yearbook of Immigration Statistics: 2005-2010, Non-Immigration Admission (http://www.dhs.gov/files/statistics/immigration.shtm).

When we examine the 2009 values, it is clear that joining VWP prevented Malta tourist/business trips number from dropping, while Cyprus has dropped sharply. Generated from both groups, in 2010, VWP increased about 3.1-4.5 trips per thousand population. It equals 219 million more trips from South Korea, and 1280 more trips from Malta. If each of the travelers spent $3,700 in the U.S., the VWP directly brought the U.S. 814 billion through traveler expenditure (Table 2). The second measurement I take is the ratio of tourist/business trips over all kinds of non-immigrant trips of each year within the country. Taking this second measurement makes the results more robust. To use the whole non-immigrant (temporary travel) as a base can rule out the possible demographic differences between treatment group and the control group since the traveler population is supposed to be more homogenous than country population. Because the ratio of tourist/business traveler number over total nonimmigrant travelers is relatively stable each year for a selected country, this parameter also bears more sensitivity. Figure 3 and 4 show that both VWP member countries experienced an increase in percentage of tourist/business traveler over total nonimmigrant travelers (compared to projection values), while both non-member countries experienced a drop (compared to projection values). Intuitively, the VWP has successfully increased tourist/business trips compared to other kinds of nonimmigrant travelers. Quantitatively, both European and Asian groups show an increase of above 5 percent.

The hypothesis that VWP will increase tourist/business travelers from the participating countries is confirmed by the above analysis. More specifically, participating in VWP encouraged an additional of 219 million travelers from South Korea in 2010, and 1280 additional travelers from Malta. Or, participating in VWP encouraged a 5.07% increase in the percentage of tourist/business trips over total non-immigrant trips from South Korea, and a 5.61% increase in the percentage of tourist/business trips over total non-immigrant trips from Malta. If we were to generate this result to all the 36 VWP participating countries, which have a total population of about 600 million, the VWP is estimated to

generate an additional 1.8 million to 2.7 million of tourist/business trips from its participating countries in 2010, which could be translated to $6.9 billion to $10 billion of direct spending in the U.S. by those visitors, assuming each visitor spent $3,700 during their stay. This estimation is much moderate than the one from the previous estimating work.

Figure 3: Annual Rate of Tourism & Business Trips over Total Non-Immigration Trips to the U.S.A.
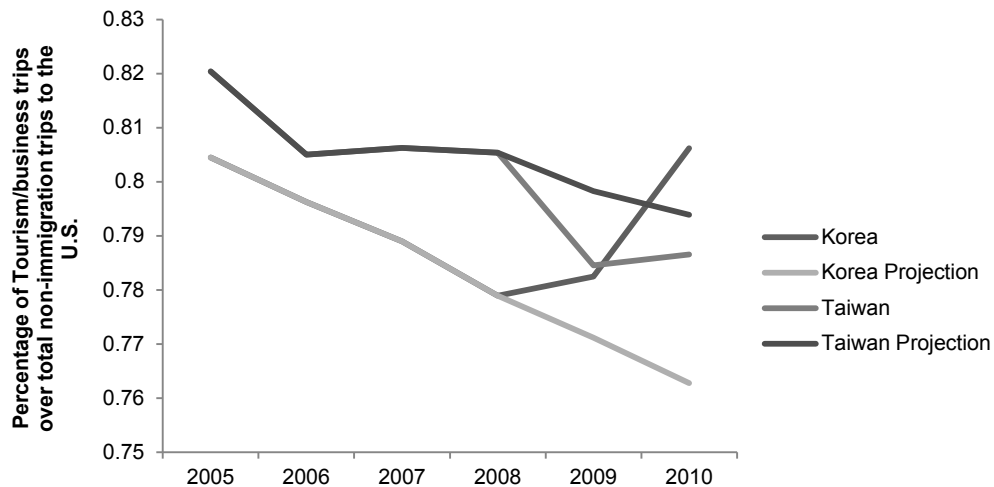
This figure shows that after joining the VWP in 2008, the share of tourism/business travelers among all non-immigration travelers in South Korea has increased significantly, though according to historical projection, the share should have declined sharply. For its counterpart Taiwan, the share of tourism/business travelers among all non-immigration travelers has declined probably due to the recession. The "difference-in-difference" is calculated as 5.07%.   Data Source: U.S. Department of Homeland Security Yearbook of Immigration Statistics: 2005-2010, Non-Immigration Admission (http://www.dhs.gov/files/statistics/immigration.shtm).

Figure 4: Annual Rate of Tourism & Business Trips over Total Non-Immigration Trips to the U.S.A.
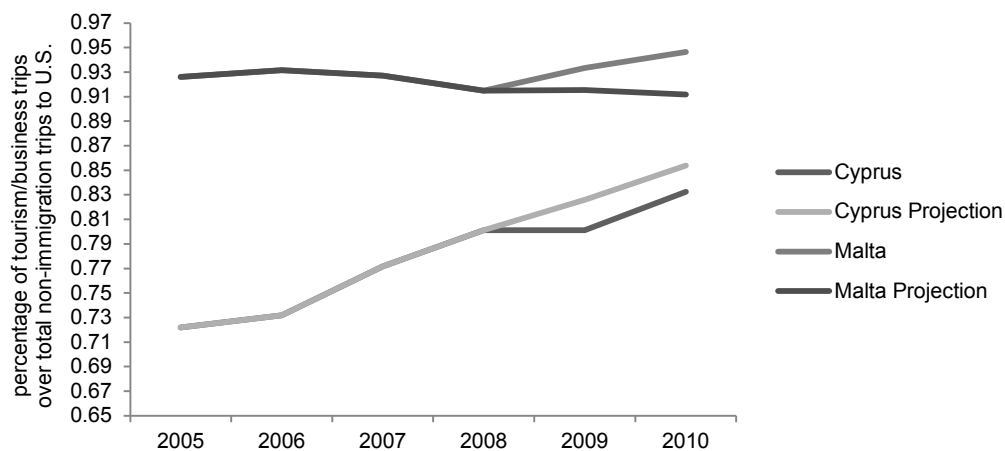
This figure shows that after joining the VWP in 2008, the share of tourism/business travelers among all non-immigration travelers in Malta has increased and exceeded its historical projection. For its counterpart, non-participating country Cyprus, the share of tourism/business travelers among all non-immigration travelers has not grown as quickly as projected. The "difference-in-difference" is calculated as 5.16%. Data Source: U.S. Department of Homeland Security Yearbook of Immigration Statistics: 2005-2010, Non-Immigration Admission (http://www.dhs.gov/files/statistics/immigration.shtm).

Table 2: VWP Net Effect Intepretation

|	**2010 Difference in differences**		
	Increased trips per thousand population	*Increased Trips*	*Increased rate (in total non-immigrant admissions)*
Malta	3.10	1,280	5.61%
Korea, South	4.49	219,221	5.07%

This table consolidates the numerical results of difference-in-differences derived from Figure 1-4.

Benefit Due to Avoidance of Visa Control Administration

In this part of the benefit analysis, I calculate the cost saving for the U.S. due to avoidance of visa control with VWP in place. In the absence of the program, potential travelers need to file an application to a U.S. consulate for a B visa (tourism – B1 and business B-2). This process is money and time consuming for both applicants and for the U.S. consulates. As I mentioned in the literature review, GAO (2002) estimated that if the VWP is to be eliminated, there would be a $739 million to $821 million initial cost and a $522 to $587 million recurring cost, under the scenario of low interview rate (10 percent); or a $1.1 to $1.3 billion initial cost and a $723 to $810 million of recurring cost, under the scenario of low interview rate (95 percent). The initial cost would be spent on hiring, training and moving new consular personnel; installing additional equipment to collect and store biometrics; and building or renovating facilities in all visa waivers posts. The recurrent cost will be covering consular personnel salaries, biometric hardware and software maintenance, facility leasing and maintenance and supplies. Built on GAO's report, I take the sum of initial cost and the recurring cost respectively for low and high interview scenarios. The saving of administrative cost in 2002 therefore ranged from $1.26 to $1.41 billion under the low interview rate scenario, and $1.85 to $2.10 billion under the high interview rate scenario (Figure 5). In 2002, there were a total of 14 million tourist/business travelers who visited the U.S. under VWP.

(GAO) Using the low and high interview scenario's interview rate, I compute the administrative cost (including initial and recurring costs) into per person cost of $139 to $157 for the low interview rate scenario, and $901 to $1005 for the high interview rate scenario, all in 2002 dollars. In 2010, when there were 18 million tourists and business travelers visited the U.S. under the VWP (DHS, 2011), if the VWP was not in place, the cost of interviewing these 18 million visitors will be ranged from 1.9 billion to 3.2 billion (Table 3).

Figure 5: Estimated State Department Annual Recurring Costs plus Initial Costs with and without VWP (in millions of 2002 USD)
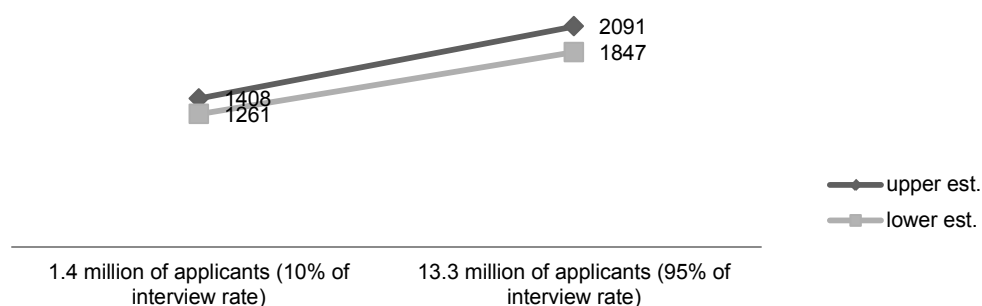
This figure consolidates GAO's estimation results of recurring and initial cost without VWP. The left side is the low interview rate, and the right side is the high interview rate.Source: GAO analysis based on State's Bureau of Consular Affairs and information from experts in the biometrics field. GAO, 2002, Implications of Eliminating the visa Waiver Program. Consolidated by author.

Table 3: Computation of Administrative Cost without VWP in 2010

	total tourist/business trips in 2010	interview percentage	interviews	per person rate (2002 $)	estimated cost in 2010 (in 2010 dollars)
Low interview	18,000,000	10%	1,800,000	901	1,953,708,000
				1005	2,179,000,000
High Interview		95%	17,100,000	137	2,821,300,000
				157	3,233,290,000

This table shows the calculation of actual cost estimation in 2010: It translates GAO's estimation into cost per visa application, and then put it into 2010 context. However, notice a limitation of this method is that it is assuming that the trips happening with or without VWP remains the same, which is obviously questionable. Source: GAO, 2002; DHS immigration yearbook, 2011.

CONCLUSION

The goal of this paper is to add into the literature the economic benefit the VWP brings to the United States: The first part estimates the net effect of VWP in terms of encouraging tourist/business trips. The difference-in-difference method with two measurements not only confirmed that the VWP substantially increases tourist/business travelers from that country significantly, but also quantified the increased trips due to the program: participating in VWP encouraged an additional of 219 million travelers from South Korea in 2010, and 1280 additional travelers from Malta. Put into a broader context, this result indicates the VWP has encouraged an additional 1.8 million to 2.7 million of tourist/business trips from its participating countries, and has added to the U.S. $6.9 billion to $10 billion of direct spending by those foreign visitors in 2010. The second part of the analysis is built on the existing evaluations of administration cost by GAO, consolidates and converts the results into a current context. It concludes that in 2010, because the VWP was in place, the U.S. government has saved from 1.9 billion to 3.2 billion for the cost of interviewing visitors. These analyses, of course, rest on many assumptions. The most important one is how representative the two pairs of countries are, and how comparative the two countries in each pair are. Second how reliable the results are for other years. Put in other words, the results are time and country-sensitive. This piece could be viewed as an exploratory study for future research with panel data which include more countries and time periods. The economic benefit of the VWP also lies in many more perspectives than the two analyzed here. Individual benefits for U.S. citizens and participating countries citizens is a big piece that is missed here, also the derived benefit by creating of jobs and the multiplied benefits are goals for future studies.Caveats aside, the first part of the analysis corrected the overestimation that previous studies concluded; the second part updated the administrative cost study that GAO did many years ago into a more current context. Together, the results serve as a solid evidence of VWP economic argument, and contribute to its future expansion.

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BIOGRAPHY

Xiaochu Hu is doctoral student at the dissertation phase at School of Public Policy, George Mason University, with research concentrations in immigration policy and regional economic development. Ms. Hu is also an Economic Club of Washington, Philip Dearborn Doctoral Research Fellow, 2012-13. Her recent publications include *Scientists, Managers, and Tourists: The Changing Shape of European Migration to the United States* (Migration Policy Institute, July 2011, co-author), and *China's Young Rural-to-Urban Migrants: In Search of Fortune, Happiness, and Independence* (Migration Information Source, Jan, 2012). Ms. Hu can be reached via xhu4@masonlive.gmu.edu

CAN "TIGHT" GROUPS AT WORK BE DETRIMENTAL? A THEORETICAL VIEW OF GOSSIP FROM THE NETWORK TIE STRENGTH AND DENSITY PERSPECTIVE

Alfred L. Luna, University of the Incarnate Word
Decima Christine Garcia, University of the Incarnate Word
Shih Yung Chou, University of the Incarnate Word
Sara Jackson, University of the Incarnate Word

ABSTRACT

Given the importance of effective communication in organizational settings and the potential destructive impact of gossiping, greater research is needed to isolate those factors that enable negative gossip to occur. Although previous research has examined the effect of social network characteristics on gossip, the focus has not been on assessing the effect of social network tie strength and density on forms of gossip. In this article, we present a new theoretical framework for investigating how social network tie strength and network density can influence the forms of gossip, either negative or positive, in organizations. Our theoretical framework, therefore, provides important implications for theory and managerial practice.

JEL: M12

KEYWORDS: Gossip, social network ties strength, social network density

INTRODUCTION

Effective communication has been shown to be one of the managerial tools that enhance organizational outcomes such as employee participation, employee involvement, and job performance (Dirks & Ferrin, 2001). As communication plays a crucial role on organizational effectiveness, scholars have paid much attention to negative forms of communication in organizations.

Among various forms of negative communication in organizations, gossip has received much attention as it is generally seen as a socially destructive activity (Grosser, Lopez-Kidwell, & Labianca, 2010). In the organizational setting, gossip occurs when an organizational member engages in informal and evaluative talk with a few members about another member of that organization who is not present (Kurland & Pelled, 2000). Given gossip requires a group of individuals, the nature of relationships among these individuals could potentially determine not only whether gossip is engaged but also what form of gossip is encouraged. Although previous research (e.g., Grosser et al., 2010) has examined gossip in organizations from a social network perspective, how social network tie strength and density affect the forms of gossip has been largely neglected.

We strive to address this issue by using social network analysis (e.g., Cook & Whitmeyer, 2001; Freeman, 2004) as our theoretical base. In this article, gossip is defined as "informal and evaluative talk in an organization, usually among no more than a few individuals, about another member of that organization who is not present" (Kurland & Pelled, 2000, p. 429). Moreover, as the literature suggests, gossip can take the form of either being positive or negative (e.g., Michelson & Mouly, 2004); our focus is on how social network tie strength and network density determine the forms of gossip that occur in groups and organizations. The analysis of gossip in organizations from this perspective is important because network tie strength could be considered a group's ability to maintain the permeability of group

boundaries (Nelson, 1989) and network tie density could affect the degree of direct communication within a network (Nelson & Vasconcellos, 2007).

LITERATURE REVIEW

<u>Gossip in Organizations</u>

As modern organizations are facing complex and turbulent environments, effective communication becomes particularly important. Given the important role that communication plays on organizational survival, increasing scholarly attention has been paid to the types of communication. Specifically, it has been suggested and widely known that two communication systems, the formal and the informal, can be found in virtually every organization (Driskill & Goldstein, 1986). Formal communications are formal channels of communication such as written policies, procedures, rules, formal authority and duties (Melcher & Ronald, 1967), whereas informal communications include social communications and grapevine activities (Crampton, Hodge, & Mishra, 1998).

Formal communication is important to an organization as it is a tool used to improve productivity and job satisfaction, while it reduces conflict by reinforcing trust and overall satisfaction (Chio, Hsieh, & Yang, 2004). Meanwhile, informal communication has been suggested to be important for facilitating communication, improving trust, maintaining cohesiveness, and ensuring a sense of personal autonomy (Thomas, Zolin, & Hartman, 2009). Although informal communication may be less rational than formal systems (Johnson, 1993), it is a natural consequence of human interacting and thus is an inevitable part of organizational life (Baskin & Aronoff, 1989). Among various informal communication mediums, gossip is one of the most pervasive activities within organizations (Noon & Delbridge, 1993). Gossip generally occurs when a member engages in informal and evaluative talk with a few members about another member of that organization who is not present (Kurland & Pelled, 2000); it is commonly referred to as idle talk, tittle-tattle, scandal, and rumor (Noon & Delbridge, 1993). Given gossip often involves ignoring factuality, previous research has attempted to identify the outcomes of gossip. For instance, in Kurland and Pelled's (2000) conceptual model of gossip and power, it is suggested that negative gossip enhances the gossiper's coercive power, whereas positive gossip enhances the gossiper's expert power. Kniffin and Wilson (2005) analyzed gossip in a competitive sports team and discovered that gossip serves group-beneficial rules when rewards are partitioned at the group level on a scale that permits mutual monitoring. Sommerfeld, Krambeck, and Milinski (2008) examined the outcomes of multiple gossip statements and found that gossip not only improves cooperation within a group but also transfers group members' reciprocity, trust, and reputations. Using a case study approach in various industries, Kniffin and Wilson (2010) found that workplace gossip can serve positive functions when organizational rewards are fairly distributed at the level of small-scale groups.

In addition to the outcomes of gossip, a number of studies have sought to identify antecedents of gossip. For example, McAndrew, Bell, and Garcia (2007) examined the effect of gender on the likelihood of spreading the gossip and found that both male and females were more interested in gossip about same-sex others than about opposite-sex others. Moreover, men were found to be more likely to confide in their romantic partners, whereas females were equally likely to share gossip with their lovers and same-sex friends. Farley, Timme, and Hart (2010) investigated perceptions of female gossipers in workplace and found that high gossipers were perceived as having a greater need to exert control of others than low gossipers and high gossipers were perceived as less emotionally warm than low gossipers. In a recent study conducted by Mills (2010), gossip was suggested to be an integral part of sense making and social exchange. More importantly, Mills claimed that gossip cannot be fully understood in isolation to the formal and other types of informal communication processes. Other antecedents that have been identified to be predictors of gossip include level of anxiety experienced (e.g., Rosnow, 1991), organizational climate (e.g., Crampton et al., 1998), and organizational change (e.g., Difonzo & Bordia, 2000).

Social Network Analysis

Social network analysis is concerned with how individuals in a network are connected. Specifically, a network consists of a set of nodes (i.e., individuals) that are connected by ties (Kilduff & Tsai, 2003) and these ties determine several important outcomes such as human relationships, information exchange, performance, transactional contents, etc. (Burt, 2005). Because of its ability to understand human behavior within social units, social network analysis has been utilized in various academic fields. For instance, Nelson (1989) utilized social network analysis to focus conflicts within organizations and found that high-conflict organizations have fewer numbers of frequent contacts than low-conflict organizations. Sparrowe, Liden, and Kraimer (2001) analyzed the impact of social advice networks on individual and group performance and revealed that network centrality and hindrance network density were predictors of individual and group performance. Grabner-Krauter (2009) used social network analysis to investigate individual's decision process of sharing personal information with other individuals in an on-line social network and found that the role of trust is contributed in the decision process. Wong and Boh (2010) used social network analysis to study peers' perception of managers' reputations for being trustworthy and found that attributes such as network heterogeneity, non-overlapping contacts, and network density played a role in enhancing a manager's peer reputation.

Social Network Analysis of Gossip in Organizations

Given social network analysis is a viable approach to understand human relationships in a network, the application of social network analysis in the context of gossip in organizations could help us better understand how gossip occurs. To date, however, only a few studies have utilized social network analysis to examine gossip in organizations. For instance, Szekfu and Szvetelszky (2005) investigated the dissemination of connections and information in human networks and claimed that the average path length, local patterns, and the degree of distribution affect the dynamics of gossip in human networks. Grosser et al. (2010) used social network analysis in an organization to understand how employees engage in positive and negative gossiping behavior and found that individuals tend to participate in positive and negative gossip when it was related to friendship, whereas positive gossip was related to workflow ties and non-friendships due to the lack of trust. Mills (2010) used social network analysis to understand commonly accepted views of gossip and found that gossip is embedded in other forms of communication, as it is a part of sense making and social exchange which cannot be understood as a form of formal communications.

While the above research of gossip in organizations from a social network perspective provide important insight into factors influencing gossip in organizations, the impact of network tie strength and network density on gossip in organizations has been neglected. Since network tie strength and network density determine much of the nature of the relationships and the overall level of interaction among network members (Sparrowe et al., 2001), the application of network tie strength and network density in the analysis of gossip in organizations may provide useful information on managing gossip in organizations more effectively. Thus, to fill this research gap, we use social network analysis (e.g., Burns & Stalker, 1961; Burt, 1992; Krackhardt & Stern, 1988) as our theoretical base and systematically analyze the impact of social network tie strength and network tie density on gossip forms.

THEORETICAL FRAMEWORK AND PROPOSITIONS

In this section, we intend to explore the missing piece in the literature of gossip in organizations. Specifically, we develop a theoretical framework describing the relationship between gossip and social network tie strength and network tie density. The application of social network analysis is considered a viable approach because gossip can be viewed as a process of negotiated interaction between individuals and groups (Michelson, van Iterson, & Waddington, 2010) and the objective of social network analysis is

to understand the pattern and content of the interactions taking place within and between social units (Nelson, 1989).

The Strength of Social Network Ties

Tie strength, ranging from weak to strong, refers to the closeness and interaction frequency of a relationship between two individuals (Granovetter, 1973). According to Granovetter (1973), the strength of a tie is a function of frequency of contact, reciprocity, emotional intensity, and friendship. Thus, it is suggested that strong ties are those with frequent contacts and these contacts involve affective and friendship overtone characteristics (Nelson, 1989). Moreover, strong ties often involve reciprocal favors such as helping others (Nelson & Mathews, 1991) and are mechanisms for conflict reduction, cooperation, and conflict prevention because of the existence of friendship (Krackhardt & Stern, 1988).

On the other hand, Granovetter (1973) claimed that novel information is facilitated by weak ties because they enlarge the gap between what an information seeker already knows and what others know. Granovettter (1973) further argued that because weak ties are characterized by infrequent interaction and low intimacy, they tend to be bridges that provide individuals information and resources that they cannot obtain in their own social circles. In other words, weak ties often serve as a means for information diffusion.

When linking gossip and network ties, Grosser et al. (2010) posited that positive gossip does not require affective relationships and trust, whereas negative gossip can only be found in individuals with close friendships. In other words, networks with friendship ties facilitate negative gossip, whereas networks without friendship ties encourage positive gossip. From this standpoint, one can expect to find high degrees of negative gossip within a network featuring more strong ties and to find high degrees of positive gossip within a network featuring more weak ties. We, therefore, propose the following:

Proposition 1a: Groups that feature more overall weak ties will have higher degrees of positive gossip than groups that feature fewer overall weak ties.

Proposition 1b: Groups that feature more overall strong ties will have higher degrees of negative gossip than groups that feature fewer overall strong ties.

The Density of a Social Network

Network density is the ratio of the actual number of links between nodes over the maximum number of possible links, which refers to the fullness of a social network (Phillips, 2010). Networks with a higher degree of density will have a higher degree of communication within the network and the flow of information is directly between the nodes (individuals) of the network (Nelson & Vasconcellos, 2007). Specifically, it has been found that information about individual behavior can be circulated smoothly within a group that features high degrees of network density (Coleman, 1988). In addition, Berscheid and Walster (1978) argued that individuals are socially proximal and relationships are highly reciprocal in a high-density network, which in turn facilitate interpersonal attraction. It is also because of the existence of reciprocal relationships and interpersonal attraction that individuals in a high-density network tend not to engage in self-serving, norm-defying, or opportunistic behavior (Labianca & Brass, 2006). Similarly, Coleman (1988) claimed that mutual obligations, trustworthiness, and the existence of norms and sanctions are encouraged in high-density networks.

On the other hand, individuals in a low-density network are only connected through indirect ties, which lack the frequency of contact, affect, obligation and personal involvement, which permits the emergence of substructures in the network (Nelson & Vasconcellos, 2007). In addition, it is suggested that a lower

density network allows for the formation of multiple substructures or cliques (Breiger & Pattison, 1978). Therefore, the type of information flowing through the low density network, or networks of the substructures is guarded because of the indirect ties, personal involvement and the lack of trust that is in the network.

In the context of gossip in organizations, it is suggested that individuals are able to promote interpersonal closeness when sharing negative information (Bosson, Johnson, Niederhoffer, & Swann, 2006). Similarly, Turner, Mazur, Wendel, and Winslow (2003) argued that sharing a negative attitude is considered self-disclosing and personal. Sharing negative information, therefore, facilitates interpersonal attraction (Yoo, 2009). Kowalski (2002) rationalized this notion by stating that individuals are able to conform to the attitudes of others around them by sharing negative information. Moreover, Dunbar (2004) claimed that negative gossip serves the function of bringing individuals together and strengthens interpersonal bonds.

Meanwhile, Grosser et al. (2010) suggested that whether an individual engages in positive gossip or negative gossip depends on his or her dyadic relationship ties with others and one of the crucial factors is the level of interpersonal trust. Grosser et al. further commented that because negative gossip often represents a risky social behavior, it requires high levels of interpersonal trust in order to ensure privacy. In other words, the higher the level of interpersonal trust the higher the degree of communication throughout the network (Nelson & Vasconcellos, 2007). Therefore, one can expect that high degrees of negative gossip will be found in high-density networks.

On the contrary, positive gossip is often considered less sensitive and requires less interpersonal trust (Grosser et al., 2010). In their empirical study, Grosser et al. (2010) found that the occurrence of positive gossip does not require friendship ties. This, therefore, suggests that high levels of positive gossip will be found in low-density networks where individuals are connected through indirect ties (i.e., coworkers). Based on the characteristics of gossip and network density, we propose the following:

Proposition 2a: Groups with lower social network density will have higher degrees of positive gossip than groups with higher social network density.

Proposition 2b: Groups with higher social network density will have higher degrees of negative gossip than groups with lower social network density.

DISCUSSION

The purpose of this article is to investigate a missing piece in the gossip in organizations literature. Specifically, this article investigates how social network tie strength and network density determine the forms of gossip in organizations as it has been suggested that the structure of social networks has an important impact on whether members in a network engage in gossiping (e.g., Grosser et al., 2010). Thus, the focus of this article is on how social network tie strength and density influence positive and negative gossip. Our theoretical framework provides several important implications. In the following section, we present the implications for theory and managerial practice.

Implications for Theory

Given the importance of effective communication in organizational settings and the potential destructive impact of gossiping, greater research is needed to isolate those factors that enable negative gossip to occur. Since social network structure has an important impact on whether members in the network engage in gossiping activities (Grosser et al., 2010), previous research has examined the effect of social network characteristics on gossip. However, the focus has not been on assessing the effect of social network tie strength and density on forms of gossip. Thus, the propositions presented in this article provide

researchers with a new starting point from which to examine different levels and forms of gossip. Empirical research is needed to confirm the theory that groups with higher social network density and more stronger ties will have higher degrees of negative gossip as compared to groups with lower social network density and weaker ties. Our theory contributes to the social network literature by extending it to negative and positive gossip. Our propositions also build upon the communication and gossip in organization literature as there are very few studies that even look at the characteristics between two social units; most studies address the individual's characteristics for gossiping.

Implications for Practice

While most managers would probably agree that negative gossip degrades organizational performance, the research does not always portray it as such and is inconclusive since the function and nature of gossip tends to change according to the organizational situation (Michelson & Mouly, 2004). Some would argue that gossip can have positive impacts, such as reducing stress, fostering solidarity and cohesiveness, and developing friendships (Michelson & Mouly, 2004). However, the negative impacts of gossip, such as creating divisiveness within an organization, spreading false information and damaging reputations, wasting valuable employee time on the job, draining morale and creating conflict are often seen by managers as outweighing any good that may come from gossip. The literature does provide a variety of managerial tools to reduce the impact of negative gossip in organizations, such as educating employees on the dangers of gossip and stressing to managers the importance of being role models, eliminating the gossip perpetrators, keeping employees energized in their tasks so they don't have time to gossip, and eliminating anxiety by explaining the unexplained (Danziger, 1988). However, we are hopeful that our new line of research will provide additional concrete preventive options to the manager's tool box.

We have argued that strong ties result in negative forms of gossip, whereas weak ties lead to positive forms of gossip. From this perspective, organizations and managers could focus on reducing the strength of social network ties in organizations. Specifically, as the strength of ties weakens, it tends to reduce opportunities for negative gossip because members do not develop stronger ties based on trust. Additionally, since strong ties are characterized by frequent interaction, intimacy and sharing, and reciprocity in exchanges (Granovetter, 1982), organizations and managers can reduce the degree and frequency of interactions or the strength of ties by reducing the degree of task interdependence as it is suggested that members of groups with low task interdependence engage in little information sharing (Crawford & Haaland, 1972). However, it should be noted that many organizations are likely to depend on good collaborative teams to achieve desired performance outcomes. If team dynamics are necessary for performance, then organizations and managers may need to carefully design teams consisting of people who don't share to the extent to become personal. Therefore, this may suggest minimizing the use of social type team building events, such organizational coordinated social gatherings.

In terms of network density, we have suggested that low levels of social network density tend to facilitate higher degrees of positive gossip, whereas high levels social network density tend to generate higher degrees of negative gossip. Thus, if one wishes to reduce the disruptiveness of negative gossip in organizations, one can focus on reducing the number of actual links in a network. This can be done by reducing the number of reciprocal contacts (e.g., direct reporting) within a network or reducing the size of a network. Additionally, some organizational structures may be less susceptible to negative gossip, such as virtual offices, while other more traditional structures may not. Once the effect of social network tie strength and density on gossip has been tested, researchers should then extend this theory to evaluating different organizational designs and structures in order to identify ones that are more likely to minimize negative gossip while enhancing positive gossip.

CONCLUSION AND FUTURE RESEARCH DIRECTIONS

In this article, we have sought to develop a theoretical framework that explains gossip in organizations by using social network theory. We propose that social networks that feature weak ties will have high degrees of positive gossip, whereas social networks with strong ties will have high degrees of negative gossip. Moreover, we suggest that groups with lower social network density will have higher degrees of positive gossip than groups with higher social network density and groups with higher social network density will have higher degrees of negative gossip than groups with lower social network density. As we present our theoretical framework, we also offer the propositions that guide future theoretical and empirical research. More importantly, we offer managers and organizations recommendations on how our theoretical framework and propositions can be used to manage gossip in organizations more effectively.

Although this article uses a systematic process to analyze the effects of social network tie strength and density on the forms of gossip in organizations, it is not without limitations. A first limitation is that our article solely focuses on two social network characteristics, density and tie strength. We recognize this as a limitation as we did not consider other characteristics such as transactional content and configuration. However, we believe network tie strength and density are the major factors in determining the forms of gossip as they determine the closeness and interaction frequency and the actual number of links between nodes, respectively. Future research may be needed to study the effects of the other characteristics of social networks in order to strengthen our propositions. Secondly, this article does not address individual perceptions of positive and negative gossip. For instance, what an individual considers positive gossip may be considered as negative gossip by another individual. Thus, future research may be needed to investigate the boundaries of positive and negative gossip in order to validate our theoretical framework. A final limitation is that this article does not include organizational-level factors when analyzing gossip in organizations from a social network perspective. For instance, as organizational culture has been suggested to be a form of control mechanism that shapes group and organizational members' values and expectations about appropriate behavior (e.g., O'Reilly & Chatman, 1996), it could have potential impact on what form of gossip is accepted in a group and/or an organization. Future research that includes organizational-level factors may be needed in order to develop a more comprehensive framework of gossip in organizations.

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BIOGRAPHY

Alfred L. Luna graduated with a BBA degree in Marketing from the University of the Incarnate Word and is currently a graduate student at the Texas A&M University-San Antonio. His research interests included organizational behavior, market research, and human resource management. He can be reached at 4301 Broadway, San Antonio, TX 78209, alluna1@student.uiwtx.edu.

Decima Christine Garcia is an Assistant Professor of Health Administration at the University of the Incarnate Word. She received her Ph.D. in Healthcare Administration and Policy from the Pennsylvania State University. Her current research interests focus on organizational citizenship behavior and healthcare management. She can be reached at 4301 Broadway, CPO 427, San Antonio, TX 78209, dcgarcia@uiwtx.edu.

Shih Yung Chou is an Assistant Professor at University of the Incarnate Word. He holds a Ph.D. in Management from Southern Illinois University Carbondale. His research has appeared in Computers in Human Behavior, International Journal of Business and Public Administration, Journal of Internet Business, Journal of Management Research, and others. He can be reached at 4301 Broadway, CPO 394, San Antonio, TX 78209, chou@uiwtx.edu.

Sara Jackson is an Assistant Professor teaching International Business at the University of the Incarnate Word. Dr. Jackson was the Founding Director of the South-West Texas Border International Trade Center, and as Director, she established the award-winning San Antonio Export Leaders program, now in its eleventh year. She can be reached at 4301 Broadway, CPO 462, San Antonio, TX 78209, jacksons@uiwtx.edu.

AMENITY CONFLICTS BETWEEN URBAN PORT FACILITIES AND COMMUNITIES IN AUSTRALIA

Gary F. Keller, Cardinal Stritch University

ABSTRACT

Selsky and Memon (1997) commented that ports are part of a zone "where there is considerable pressure from diverse stakeholders" due to technological, economic, political and environmental forces from stakeholders as well as from "the wider context management of urban ports." They referred to three forms of community conflicts around urban ports: locational conflicts; failures of corporate social responsibility; and inadequate co-management arrangements. The author analyzed the sources of conflict identified in national surveys of Australian ports from 1999 to 2010 to evaluate the significance of these matters as possible interferences in what Memon and Selsky describe as the "amenity commons." An analysis of the Australian Report Cards from 1999-2010 strongly indicates that a direct correlation exists between the economic utility and efficient management of ports and the resulting impact those processes have on their urban neighborhoods and extended communities. The salient discovery is that the issues raised by Menon and Selsky and verified in the Australian Infrastructure Reports mandate the need for improved strategic planning for a reasonable solution for ports and their surrounding communities in the second decade of the 21st century.

JEL: O11, O18, O33, 043, O44, Q56

KEYWORDS: Port Management Urban/port Infrastructure Growth Issues Port/local Community Conflicts Economic and Environmental Sustainability Challenges

INTRODUCTION

The purpose of this study was to survey the experience of Australian ports and their adjacent urban communities over the period 1999-2010 to categorize the issues that have affected the amenity commons and the degree to which *interspecific competition* has ensued. The source of data for this section is the series of *Infrastructure Report Cards* produced by Engineers Australia from 1999 to 2010. The portals to and transshipment points from Australia's rich natural resources zones are via its ports. As the Australian economy improved in relationship to the take off period of the Chinese and Indian economies so has the strain on its ports to handle efficiently the egress of exports and ingress of imports. Simultaneous with the demands on the ports for increasing their capacity and efficiency are the natural by-products of commodity/industrial enterprise, pollution of all sorts, congestion, potential for biological contamination and human terrorism and the economic stress of competition for valuable real estate. Selsky and Memon identified these tensions as *amenities commons conflicts* in 1996-'97. Data from the Australian Report Cards from 1999-2010 strongly indicates that a direct correlation exists between the economic utility and efficient management of ports and the resulting impact those processes have on their urban neighborhoods and extended communities. The resolution of these common conflicts was articulated by Selsky and Memon in 1997 (holistic approach) and the 2010 Australian Infrastructure Report Card (harmonize).

LITERATURE REVIEW

The significance and value of worldwide maritime trade along with the associated shipping industry and port facilities infrastructure is colossal. It is estimated that 90% of world commerce is carried by commercial vessels (Marisec, 2011) and the global maritime transportation industry generated an estimated annual income of (USD) $380 billion (Korinek & Sourdin, 2009). According to the World

Bank, the total value of the international shipping industry expressed in terms of GDP would rank it 25th in the world, slightly ahead of Saudi Arabia (World Bank, 2009).

Australia's economic development and concomitant regional geopolitical influence is dependent on its port facilities as a base to export its diverse portfolio of strategic raw materials, not to mention the volume of goods imported by Australia. Australia is the home of nearly six (5%) of the world's largest ports in terms of freight tons handled (Hedland #19, Dampler #26, Newcastle #39, Hay Point, #46, Gladstone #52, Brisbane #122) and 2 (1.6%) of the world's top container ports (Melbourne #51 and Sydney Ports #67) (American Association of Port Authorities, 2011). These statistics shed light on the economic, social and domestic political importance that port facilities have on Australia. However, lost in the macro analysis of global maritime trade and the value of port infrastructure are the micro frictions described by Selsky and Memon (1997) as *amenity commons conflicts*.

The evolution of contemporary port locations in virtually any country can be traced to sites with access to navigable waters. At these locations, commerce and communications with others could be easily and efficiently conducted. Generally, ports were created first followed by settlements around them and eventually expansion of the urban port communities was facilitated by the economic activity tied directly to or spun off by port business. Economists refer to the advantage that the local economy derives from the geographic location of a port as an endowed asset/advantage. Australia's early port settlements became the basis of and continue to account for the greatest population concentrations along its coasts; particularly the three largest population centers Sydney Brisbane, Melbourne and Brisbane that are the homes of three of the largest port facilities in Australia.

During the *take off* period of many countries during the modern industrial era, the consideration of quality of life issues were rarely if ever considered. The major metric of progress was economic growth. The cost of economic progress in terms of the cost of degradation of the environment was not considered as salient. However, recently threats to human health due to industrial pollution, threat of environmental disasters such as oil spills and ship wrecks may have on sensitive environmental assets such as the Great Barrier Reef, the release of hazardous materials, storage of potentially lethal cargoes and threats of variety of forms of terrorism have become common community concerns.

One of the more contemporary studies conducted of Australia's coastal zone was a major investigation done from 1991-1993 by the Resource Assessment Commission and another study, the Commonwealth Coastal Policy, 1995. Both reports focused on the impact of shipping based pollution (ship-sourced pollution and ballast water issues) and little attention was given to the difficulties caused by port operations (Bateman, 1996). Another paper, The Australian and New Zealand Environment and Conservation Council (ANZECC) Discussion Paper on Maritime Accidents and Pollution articulated one of the key reasons for the development and existence of what would be called *amenity commons conflicts* as the lack of an aligned approach to deal with overarching issues posed by the maritime industry and other interests. Bateman (1996) observed, "There are no institutions or mechanisms in place at present in Australia to resolve differences of this nature or to define national priorities with national maritime interests and activities" (p. 230).Selsky and Memon (1997) placed the issues cited in the Resource Assessment Commission, the Commonwealth Coastal Policy and the Australian and New Zealand Environment and Conservation Council (ANZECC) Discussion Paper on Maritime Accidents and Pollution and increasing trend toward the privatization of port management in a new context. Unlike the official reports, which Bateman claimed, only outlined factors that contributed to conflict between ports, the maritime industry and urban communities but did not propose a methodology to mitigate the issues, Selsky and Memon asserted that a *holistic* approach was needed. To accomplish that objective Selsky and Memon created several useful definitions to guide an analysis. First, they characterized ports as "part of a zone where there is considerable pressure from diverse stakeholders" (p. 259). Second, the authors maintained, "many community conflicts over development are concerned with amenity values such as

quiet, ambiance, scenic views and lack of congestion" (p. 261). Third, they defined the core port/community disagreements as:

> *Locational conflicts, that is, opposition by some interests in a community to corporate development initiatives. Alternatively, such conflicts may be seen as failures of corporate social responsibility, in which the dominant corporate actor does not fulfil social expectations placed on it. Finally such conflicts may be seen as the result of inadequate comanagement arrangements in a common pool resource (Memon & Selsky, 1998, p. 589).*

Finally, Selsky and Memon (1997) defined the underlying source of disagreement of common pool co-management as *amenity commons conflicts*.

> *From the perspective of commons co-management, amenity values may be considered common-pool resources, and conflicts over such resources indicate inadequate institutional arrangements for managing them. The eruption of conflicts over disamenities can make transparent that residents assume property rights to amenity values in their community. The reason for the conflicts is that the residents feel those rights have been violated. We may call this bundle of de facto rights an amenity commons (p. 261).*

In 1998, Selsky and Memon released their case study analysis of Otago Harbour in New Zealand (*Institutional Design for the Comanagement of an Urban Harbor in New Zealand*) that applied their innovative approach to revealing *amenity commons conflicts* and proposing solutions. Their case study of Otago Harbour was an innovative approach to thoroughly examining the historical divergence between the port company and the local community. The case study not only examined the causes of *amenity commons conflicts* but also offered a blueprint for the resolution of these negative interfaces for other port communities to follow.

METHODOLOGY

The data used by the Institution of Engineers, Australia (IEAust) to evaluate the condition of Australia's key infrastructure segments from 1999 to 2010 was the basis of this study. Data was obtained from research and interviews with appropriate community and business groups and publicly available information. The methodology employed by the Institution of Engineers, Australia assesses ports as the equivalent of a structure (bridge, highway) or system (water/waste water); however, inevitably the reports briefly and in general terms mention *amenity commons conflicts*.

In the 1999, Infrastructure Report the IEAust stated that the results of the Infrastructure Report were comparable to an American project completed in 1998 in which grades (A-F) were used to articulate the condition of America's infrastructure. By following the American grading system, the IEAust was able to provide a consistent context for the evaluation of Australia's infrastructure. The methodology used to evaluate the data was a mixed method approach. The assessments relied on publicly available information and concentrated on strategic issues, augmented by quantitative performance measures if they were easily obtainable. After the data was accumulated and analyzed, qualitative grades were issued. The grades of A (very good) to F (inadequate) signified an average over a number of criteria, including adequacy, need, funding, condition, performance, and social and environmental issues.

RESULTS AND DISCUSSIONS

The Institution of Engineers, Australia (IEAust), the largest professional body representing Australia's engineers, responded to a variety of high profile infrastructure failures in Australia by issuing periodic reports on the status of Australia's infrastructure (see Table 1 for summary of *Australian Infrastructure Report Cards*).

Table 1: Summary of Australian Infrastructure Report Cards

Year	Location	Conflict/Difficulty	Rating
Australian IR 1999	National	No evaluation of ports in 1999 Report.	N/A
Australian IR 2001	National	Increasing urban encroachment around port sites is limiting their expansion capacity and affecting residential amenity. Strong need for integrated planning in relation to maintaining buffers around ports and controlling the urban development of land adjoining ports.	B
New South Wales 2003	Regional	Ports not included in report.	
Queensland IR 2004	Regional	Residential development and port operations with noise and lighting tend not to co-exist comfortably.	B-
Australian IR 2005	National	Urban encroachment. Co-ordination with land and air transport systems. Channel deepening is required for the Port of Melbourne to meet future growth in the size of ships. Current and continuing boom in the minerals sector in W. Australia, particularly those industries at the Burrup Peninsula will necessitate continued upgrading and provision of facilities.	C+
Aus. Cap. Territories IR 2005	Regional	No evaluation of ports in Infrastructure Report Card.	N/A
Northern Territories IR 2005	Regional	Barge landings and port facilities all appear to be of an adequate standard for the Northern Territories. Urban encroachment issues in several ports noted.	B+
South Australia IR 2005	Regional	Ports not included in report.	N/A
Tasmanian IR 2005	Regional	Urban encroachment and protection of land zonings and access corridors.	B
Victorian IR 2005	Regional	For all ports, urban encroachment and protection of buffer zones and access corridors.	C
Western Aus. IR 2005	Regional	For all ports, urban encroachment and protection of buffer zones and access corridors.	B-
Australia IR 2010	National	The need to consider future port requirements when making nearby urban development decisions is essential.	B-

Table 1 is a summary of the key findings from the Institution of Engineers, Australia (IEAust) reports that evaluated the condition of Australia's key infrastructure segments from 1999 to 2010. The methodology used to evaluate the data was a mixed method approach. The IEAust evaluations relied on publicly available information supplemented by quantitative performance measures if they were easily obtainable. After the data was analyzed, qualitative grades were A (very good) to F (inadequate) issued. The appearance of urban/port facility conflict first appeared in 2001 and became a significant component of the national (and most regional) IEAust Infrastructure Reports thereafter.

1999 Report: Their first report issued in 1999 examined and graded (A = excellent, F= inadequate) the following infrastructure sectors: national roads, state roads, local roads, bridges, railways, water, sewerage, management and planning and benchmarking (Institution of Engineers, Australia (1999). Curiously, ports were not analyzed or assessed in the IEAust's first infrastructure report.

2001 Report: The IEAust's 2001 Infrastructure Report Card expanded the infrastructure sectors that were graded using the same A – F scale as in 1999. The sectors that were analyzed expanded from 9 in 1999 to 13. Seven new sectors were added: Electricity, Airports, Gas, Telecommunications, Ports**,** and Storm Water. Deleted were management, planning, and benchmarking (Institution of Engineers, Australia, 2001). In this report, the highest ranked infrastructure sectors were Ports (B), Telecommunications (B) and Airports (B). A B grade was interpreted to mean that "Minor changes required in one or more of the infrastructure condition, committed investment, regulatory regime and planning processes to enable infrastructure to be fit for its current and anticipated purpose" (IEAust, 2001 Infrastructure Report Card, p. 98). The chief issue articulated in the summary portion of the 2001, Infrastructure Report Card was "Increasing urban encroachment around port sites is limiting their expansion capacity and affecting residential amenity. Overall the infrastructure is currently rated as acceptable to very good overall" (p. 4). The IEAust concluded their analysis with the following recommendation:

> *Better integration of intermodal transport is required to remove bottlenecks and improve*
> *the efficiency of freight movement from wharf to road, rail and air networks. There is a strong*
> *need for integrated planning in relation to maintaining buffers around ports and controlling the*
> *urban development of previous port owned or port related lands. This urbanisation creates many*
> *of the community problems facing ports. Whilst this is particularly pertinent in capital cities, it is*
> *also becoming an increasingly important issue in regional ports and new remote area ports.*

> *Further work on developing suitable pricing and investment criteria is necessary, in the absence of competitive market forces, to ensure sound investment; dividend and pricing decisions are made by port corporations and their owners (p. 39).*

The 2001 Infrastructure Report was a seminal and sobering statement of the existence (to use the biological terms) of the existence of a *mutualistic relationship* and *interspecific competition* between ports and their urban hosts. A *mutualistic relationship* is characterized by a two-way interface in which each party derives value from the other. While the connection between the economic benefits spun off by a vibrant port to its surrounding urban host is obvious, the 2005 Report Card suggests the existence of a parallel and potentially harmful rivalry between ports and their urban communities, *interspecific competition.* The nature and outcome of such a rivalry is both the ports and bordering urban communities, experience reduced benefits due mutual competition for the same resources (land, air, hours of operation, and the other factors referred to by Selsky and Memon and the IEAust as amenities). While some may assert that *interspecific competition* is the price to be paid for economic opportunity, the IEAust 2005 Report appears to have assessed the health of the ports as economic infrastructure assets while simultaneously balancing the advantages of the ports with the twin costs of the deterioration of the quality of *urban commons amenities* and reconciling the *interspecific competition* due to alterations in port management and co-management issues with the local government.

2005 Report: The grade assigned by the IEAust to the state of Australian ports in the 2005 Australian Infrastructure Report Card declined from a B (good) in 2001 to a C+ (adequate) in 2005. The main concern and reason for the decay in the evaluation was due to "urban encroachment, which limits a port's ability to expand, as well as co-ordination with land and air transport systems" (p. 6). Other concerns cited were channel deepening for the ports of Melbourne and Fremantle and concerns with the process by which investments were made by port management to secure guaranteed economic returns, and the lengthy process to secure permits for strategic developments (p. 7).

Taken at face value, the 2005 Report Card attributed the potential curtailment of Australia's economic growth to *urban encroachment* (2005 Report Card) rather than continuing the balanced theme noted balancing growth with *residential amenity* (2001 Report Card) underlines the inherent *interspecific competition* when commerce and community interests cohabitate. The only mention relating to urban amenities was alluded to in the Sustainability section. The 2005 Report Card divided sustainability into environmental, social and economic. Social and economic sustainability were defined as: outcomes includes reducing commuter times, increasing road safety, improving air quality and providing access to broadband communication to all citizens. Economic sustainability means ensuring that we have taxation and regulatory systems that promote new private sector investment in all infrastructure capable of generating adequate returns on investment. Most infrastructure organisations now incorporate sustainability objectives into their plans. (pp. 6-7) The 2005 Report Card advocates firmly for the economic needs of ports rather than a balanced approach noted in the 2001 Report Card. Economic pressures appear to be the primary motivation given Australia's role in fueling raw materials into the surging Chinese and Indian economies during this period. Therefore, the balance between development of port infrastructure and urban amenities shifted in favor of port management.

2010 Report: Ports received a higher grade (B-) in the 2010 Australian Infrastructure Report Card than the 2005 report. While the half grade increase was still below the 1999 Report Card grade, progress was noted in several areas. The 2010 Report Card also provided more detailed information about individual ports than previous studies. From a strategic perspective, the 2010 Report Card made several important recommendations to reduce *interspecific competition* between economic interests and local governments specifically:

> *Harmonise infrastructure planning and regulation through improved cooperation and collaboration between all levels of government, business and the community.*
> *Establish independent planning infrastructure advisory groups to provide advice on infrastructure priorities and provide infrastructure planning and funding advice. (iii)*

The overarching issue discussed in the 2010 Report Card regarding ports centered on "meeting future container growth…which could only…be accommodated by developments underway at many ports that are providing additional stevedoring capacity and infrastructure upgrades" (p. 25). The problem with this growth for the surrounding urban areas is "more congestion, delays and pollution as a result of the huge traffic movements and this will be untenable from the perspective of the exporters and importers, and the community" (p. 26). The 2010 Report Card altered its focus regarding the *urban encroachment/urban amenities* issue from *interspecific competition* (2005) to *mutualistic relationship* (2010). The need for investment in Australia's ports to expand and maximize their capacity and efficiency was apparent and urgent; however, the IEAust opined that:

> *These projects need to be funded and implemented to enable ports to cope with future growth in an economic, social and environmentally sustainable fashion. Integrating land use decisions with port development is a major problem for many major ports. Ports require large amounts of land and generate significant road and rail traffic. Ensuring compatible land use around ports is challenging due to the typically high value of land around ports. The need to consider future port requirements when making nearby urban development decisions is essential. Local governments need to consider the port's future requirements and ports need to better contribute to local and regional planning. Urban encroachment and other developments should not prevent the efficient functioning of the port. (p. 26)*

In sum, the recommendations of the 2010 Report Card summarized the key issues noted by Selsky and Memon (1997). Table 2 depicts Selsky and Memon definitions of issues that led to *amenity commons conflicts* and the major problems in Australian ports and their urban neighbors that are contributing to infrastructure weaknesses resulting in the sub-optimization of the Australian economy.

Table 2: Comparison of Selsky and Memon Definitions and 2010 Report Card Recommendations

Definition	Selsky & Memon	2010 Report Card
Mitigation	Holistic approach to solve inadequate co-management arrangements	Harmonize planning and regulation via improved collaboration between all levels of govt., business and community
Ports	Zone of considerable pressure from diverse stakeholders	Vital component of economic infrastructure
Nature of Conflict	Amenity values	Urban encroachment and development should not prevent efficient functioning of port
Disagreements and Consequences	Locational conflicts due to corporate development initiatives	Congestion, delays and pollution

Table 2 compares Selsky and Memon's (1997) definitions of amenities commons conflicts and connects them with the most recent IEAust Infrastructure Report (2010) to show their practical application. It is clear that theory provided a rigorous predictor of outcomes indicating a growing debate between quality of life and economic development issues.

CONCLUSION

The purpose of this paper was to analyze the sources of conflict identified in a national survey of Australian ports from 1999 to 2010, which includes the expansion of port infrastructure issues; residential encroachment and environmental sustainability issues; and to evaluate the significance of these matters as possible interference in what Memon and Selsky describe as the "amenity commons." The source of data for the research was a series of *Infrastructure Report Cards* produced by Engineers Australia from 1999 to 2010. An analysis of the Australian Report Cards from 1999-2010 strongly indicates that a direct correlation exists between the economic utility and efficient management of ports and the resulting impact those processes have on their urban neighborhoods and extended communities. The resolution of these common conflicts was articulated by Selsky and Memon in 1997 (holistic approach) and the 2010 Australian Infrastructure Report Card (harmonize). The salient discovery is that the issues raised by Menon and Selsky and verified in the Australian Infrastructure Reports mandate the need for improved

strategic planning for a reasonable solution for ports and their surrounding communities in the second decade of the 21st century.

There were several limitations to this research. The issues explored by Memon and Selsky extend beyond the scope of this paper and would include other types of "port" facilities, most evident are airports. Whenever the creation of or expansion of a "port" facility occurs, the economic considerations generally emerge as the primary motivating force for action. Therefore a need exists for communities to create and engage in long-term planning to avoid the inevitable consequences of the "build it and they will come…now what are we to do" mind model that currently plagues nearly every urban major port facility. Additionally as governments around the world continue to spin off public infrastructure to the private sector, the inevitable cleavage between economic asset maximization and quality of life issues for the surrounding community may continue to widen. A need exists to harmonize the symbiotic relationship between the goals of two equal and seemingly contradictory parties.

Further research is needed to determine how other countries with a robust maritime industry deal with amenities commons issues. One suggestion is seek out how port facility strategic planning includes key stakeholders into the process. A model-building template may be another technique to research and/or create to allow a reasonable state of equilibrium to exist considering the substantial amount of public funds needed to operate a contemporary port. Incorporating the long-term view regarding port planning/community development is especially vital to developing countries, as the actions taken to stimulate their economies via global trade will inevitably have an impact on the communities that emerge to support the ports.

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BIOGRAPHY

Gary F. Keller is a tenured Associate Professor in the College of Business and Management (specializing in adult degree completion programs ASB–MBA) at Cardinal Stritch University in Milwaukee, Wisconsin, USA. Dr. Keller is also a management consultant specializing in strategic management and organizational development issues. He can be reached at the College of Business and Management, Cardinal Stritch University, 6801 N. Yates Road, Milwaukee, WI, 53217 USA, 414-410-4154 or email: gfkeller@stritch.edu

IMPACT OF NATIONAL CULTURE ON ONLINE CONSUMER REVIEW BEHAVIOR

Jianwei Lai, University of Maryland, Baltimore County
Peng He, University of Maryland, Baltimore County
Hsien-Ming Chou, University of Maryland, Baltimore County
Lina Zhou, University of Maryland, Baltimore County

ABSTRACT

This research aims to investigate culture impact on the content of helpful online consumer reviews. Two distinct cultures, American and Chinese, were selected for comparison. The hypothesized culture effects were empirically examined with online customer reviews data collected from both amazon.com and amazon.cn. The data was first analyzed with a qualitative method to encode the content of online reviews, and then the encoded data were analyzed with a quantitative method to test the hypotheses. The results show that American reviews are more likely to express their own opinions on products and American reviews contain more recommendations to others than Chinese reviews. In addition, Chinese and American customer reviews focus on different aspects of the products. The findings of this study can be used to improve customer relationship and product marketing in globalized e-commerce.

INTRODUCTION

Online customer reviews can be defined as peer-generated product evaluations posted on company or third party websites. Retail websites offer consumers the opportunity to post product reviews with content in the form of numerical star ratings and open-ended customer-authored comments about the product (Mudambi et al., 2010). When consumers search for product information and potentially buy products on the Internet, they could browse online reviews from previous customers. The content of reviews could vary from product functional reviews to customer service. The mere presence of customer reviews on a website such as Amazon.com can improve customer perception of the website (Kumar et al., 2006). Web sites elicit customer reviews for several reasons, such as to serve as a mechanism to increase site "stickiness," and to create an information product that can be sold to other online retailers. Reviews that are perceived as helpful to customers have greater potential value to companies, including increased sales (Chen et al., 2008; Chevalier et al., 2006; Clemons et al., 2006; Ghose et al., 2006).

Recent research has examined online customer product reviews, specifically looking at the characteristics of the reviewers (Forman et al., 2006; Smith et al., 2005). In addition, cultural dimensions have been found to vary across different countries and different products (Lee et al., 2008). Although many studies have been conducted to investigate issues in cross-cultural business (e.g., Blocker, 2011, Pauleen, 2010, Standifer, 2010), to the best of our knowledge, none has focused on the impact of culture on the content of customer reviews. To fill the void, we compare customer reviews from two distinct cultures (i.e., American and Chinese) on three products. The rest of this paper is organized as follows. In Section 2, we provide background on culture model and propose hypotheses related to culture effects on online consumer reviews. In Section 3, we describe methodology design in detail, followed by results and discussion in Section 4. Finally, we conclude with paper with implications of research results and future research issues in Section 5.

BACKGROUND AND HYPOTHESIE DEVELOPMENT

Individualism-collectivism (Hofstede, 1983) is one of the most commonly used dimensions in cross-cultural studies. Members of individualist cultures (e.g., American) tend to hold an independent view of the self that emphasizes separateness, internal attributes, and the uniqueness of individuals, while those of collectivist cultures (e.g., Chinese) tend to hold an interdependent view of the self that emphasizes connectedness, social context, and relationships. For example, Chinese have lower self-disclosure and responsiveness. The attitudinal and behavioral differences between individualism and collectivism cultures are summarized in Table 1 (Aaker et al., 1997). For instance, Culture affects majority influence in computer-mediated communication (Zhang et al. 2007).

Table 1: Relative Attitudinal and Behavioral Differences between Individualism and Collectivism (Aaker et al., 1997)

	Individualism (e.g., United States, Australia, Canada)	Collectivism (e.g., Hong Kong, Taiwan, Japan)
Self-construal	Defined by internal attributes, personal traits	Defined by important others, family, friends
Role of others	Self-evaluation (e.g., standards of social comparison, sources of appraisal regarding self)	Self-definition (e.g., relationships with others define self and impact personal preferences)
Values	Emphasis on separateness, individuality	Emphasis on connectedness, relationship
Motivational drives	Focus on differentiation, relatively greater need to be unique	Focus on similarity, relatively greater need to blend in
Behavior	Reflective of personal preferences and needs	Influenced by preferences, needs of close others

This table represents the relative attitudinal and behavioral differences associated with two different cultures – Individualism versus Collectivism.

Members of collectivist cultures tend to form attitudes about individuals on the basis of both dispositional traits and contextual factors. However, members of individualist cultures form attitudes about individuals solely on the basis of dispositional traits (Cousins et al., 1989). We expect these cultural differences to influence people's behaviors in reviewing online products. Thus, we hypothesize that:

H1: American customers are more likely to include products' specific traits in their reviews than Chinese customers.

Online reviewing is a way of expressing people's opinion. Huang (2005) conducted a cross-cultural study to explore the effects of cultural conditions, particularly the dimension of individualism/collectivism, and the effects of individual motives on opinion expression by drawing samples from the United States and Taiwan, two countries with different scores on individualism/collectivism. Results show that incongruence between one's own and the perceived future majority opinion and a lack of efficacy reduce Taiwanese people's willingness to express their opinions. For Americans, it is only motives for not expressing opinions that make them less willing to express their views. Thus, we propose that Americans are more willing to give feedback on products as reviews:

H2: Americans customers are more likely to express their own opinions on products than Chinese customers.

Research in the field of communication shows that persuading style varies from culture to culture (Burgoon et al., 1982). In a collectivistic culture such as Chinese, the self is bound by relationships with others. Chinese are more inclined to behave in accordance with personal preference and social demand than with objective standard. Such concepts as "renqing" and "guanxi" have impact on how people persuade and influence others. Meanwhile, the dominant cultural values of Americans are individualistic which put the emphasis upon independence and individual rights. During the process of persuasion, persuadees are believed to have the right to choose whether or not to comply. Individuals are socialized to

make rational decisions and prefer to use the factual-inductive style of persuasion (Ng, 1998). Glenn et al. (1982) maintained that persuasion can be carried out in a combination of three basic styles: factual-inductive, axiomatic-deductive, and affective-intuitive, and the weight of each of these basic styles varies from culture to culture. Americans tend to persuade others based on inductive reasoning, Soviets are likely to rely on deductive logic and axiomatic principles, and people in Arab culture tend to apply affective or intuitive style. Hence, we hypothesize that Americans and Chinese use different persuasion styles in their customers' reviews:

H3: American customers and Chinese customers use different persuasion styles in their reviews.

METHODOLOGY

We introduce detailed research design for hypotheses testing in this section. As stated earlier, Chinese and Americans were selected as representatives of two distinct cultures. To isolate culture from other possible confounding factors, we selected data from a popular e-commerce website with presence in both U.S. and China: 1) www.amazon.com (US-based); and 2) www.amazon.cn (China-based).These two websites are also similar in layout. In further minimize possible effects of other factors on the comparison, we randomly selected 3 distinct products in the category of electronic devices that are sold on both websites: a cell phone (Nokia 5530), a camera (Sony DSC-W350 in black color), and a hard drive (Toshiba 2.5-Inch 320 GB External Hard Drive). Another criterion we used in selecting products is the number of customer reviews. Specifically, we selected top-20 reviews with the highest ratings on helpfulness for each of the selected products from both websites. As a result, a total of 120 online customer reviews was collected, including 40 reviews for each product with half in English and the other half in Chinese. We first analyzed the data using a content analysis method. Based on the analysis results, the following coding scheme was created to support hypothesis testing.

- Total number of sentences：the number of sentences in a review
- Overall tone: overall tone of the review, e.g., the product is good.
- Price: comments on price
- Features: comments on product features (e.g., the cell phone has a nice camera).
- Recommendation: whether recommend the product to others
- Promotions: whether there is promotion (e.g., free accessories) or not
- Genuine: whether the product is genuine or not.
- Place of manufacture: the location of the manufacturer
- Others (e.g. customer services, shipping and returning policies)

Each of the dimensions included in the coding scheme was calculated on the frequency basis. For instance, the value of features for a review was measured as the number of times that product features were commented in that review.

RESULTS AND DISCUSSION

Based on the coding results, we performed Chi-square and T-test to test the hypotheses. The frequencies and percentages of concerned aspects are shown in table 2. The descriptive statistics of the number of sentences and T-test results are reported in Table 3.

Table 2: Frequencies and Percentages of Concerned Aspects

Products	Culture	
Aspects	Chinese	American
Overall Comment	42(16%)	103(14%)
Price	25(10%)	35(5%)
Features	98(37%)	439(61%)
Recommendation to Consumers	4(2%)	17(2%)
Accessory Promotion	16(6%)	0(0%)
Genuine	8(3%)	1(0.5%)
Location of Manufactory	8(3%)	0(0%)
Others	3(1%)	0(0%)
Total Comments	262	717

This table records the frequencies and percentages of concerned aspects of American and Chinese reviews.

Chi-Square tests were performed to examine whether American and Chinese customers focus on the same aspects of products in their reviews or not. The results show that the focused aspects in Chinese and American reviews are significantly different (x^2 =104.049, $p<0.001$). Thus, hypothesis H1 is supported. It is shown from Table 3 that American customer are more concerned about product features than Chinese customers, accounting for 61% and 37% of reviews respectively. On the other hand, after analyzing all the reviews we found Chinese customers complain much more on customer service of the website than American customers, such as product packing problems and delivering qualities. In addition, only Chinese customers make comments on product genuineness and manufacturer location. One of the possible explanations is that the e-commerce environment in China is not as mature as that in the U.S. For instance, counterfeit digital products remains a concern to e-commerce customers in China.It is shown from Table 3 that American reviews are significantly longer than Chinese reviews. Thus, hypothesis H2 is supported. In addition, Table 3 summarizes the frequency and distribution of concerned aspects in online consumer reviews. It is shown from the last row that American reviews contain more opinions than Chinese reviews, which also supports hypothesis H2.

Table 3: Descriptive Statistics of the Number of Sentences and T-Test Results

Culture	Mean	Standard Deviation	N	T statistic	*p-value*
Chinese	3.47	3.92	208	-6.576	<0.001
American	10.8	7.62	648		

This table shows T-test of means of customer review sentences.

Compared with Chinese customers, American customers are more likely to make direct recommendations to others. For instance, "For anyone who is planning to buy this phone I won't recommend it"; "I recommend to others". Moreover, compared with Chinese customers, American customers tend to provide detailed reasoning such as their own usage experience to justify their recommendations. T-test results of sentence numbers of recommendation reviews are presented in table 4. American recommendation reviews use significantly more sentences than Chinese recommendation reviews. Therefore, hypothesis H3 is supported.

Table 4: T-Test Results of Sentence Numbers of Recommendation Reviews

Culture	Mean	Standard Deviation	N	T statistic	*p-value*
Chinese	2.33	1.53	3	-4.32	<0.001
American	13.67	9.57	15		

This table shows T-test of recommendation reviews sentence numbers.

We also analyzed the data at the individual product level, and the findings are consistent with those from all the products as a whole.

CONCLUSIONS AND FUTURE WORK

Cross-cultural studies are not very common because any such study must confront the difficulty of explicitly identifying and measuring the intangible concept of culture in the context of a particular system (Straub et al., 2002). In this cross-cultural research, 120 online customer reviews of three electronic products from Amazon.com (US-based) and Amazon.cn (China-based) were carefully analyzed to test the hypothesized effects of culture on the content of online customer reviews.All the three hypotheses related to the proposed effects of culture were supported by the empirical results of this study. First, compared with Chinese customers, American customers are more willing to provide feedback on products by expressing more opinions. Second, American customers were found to make more recommendations to others than their Chinese counterparts, which also suggests that people from the two cultures have different persuasion styles. Third, Chinese and American customers focus on different aspects of products in their reviews. These findings can be used to improve customer service, product marketing and promotion in future. This study exposes several limitations that deserve future research.

First, we used sentence number to measure the willingness of customers to provide feedbacks online. One possible limitation with this metric is that Chinese and English sentences may have different levels of expressivity. Another limitation is that other contextual factors that may contribute to the volume of online contribution are ignored in this study such as online promotion and marketing strategies. Second, we focused on the content instead of polarity of online customer reviews. Sentiment analysis, such as polarity mining (Zhou and Chaovalit, 2008), may be used to extract the polarities of customer reviews on product features to support the comparison on a new dimension. For example, we observed from our preliminary data analysis that Chinese customer reviews tend to contain more negative feedback than American reviews. This observation needs to be validated in future study. Third, we tested culture effect on online consumer reviews with one e-commerce website. Further work with larger datasets from different websites is needed to test the generality of the findings to new settings.

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BIOGRAPHY

Jianwei Lai is working on her PhD degree in the Information Systems department, University of Maryland, Baltimore County. Her research areas include artificial intelligence and human-centered computing. Her current research interests are online deception detection, adaptation techniques for Web navigation on mobile handheld devices, and off-screen objects visualization on mobile handheld devices.

Peng He is currently a doctoral student in the Department of Information Systems at University of Maryland, Baltimore County (UMBC). His research areas include database, data mining and spatial outlier detection. His current research interests are focusing on applying Semantic techniques to counter cyber threads and analyzing the impact of online customer reviews. He got his B.S. in Computer Science and his M.S. in Information Systems, and he had worked at Microsoft China from 2006 to 2007.

Hsien-Ming Chou is currently a doctoral student in the Department of Information Systems at the University of Maryland, Baltimore County, USA. He worked for more than ten years as a software engineer in information system field and a computer lecturer in PC school. He got certifications of Sun Certified Java Programmer, Sun Certified Web Component Developer and Structured Query Language of Oracle database.

Lina Zhou is an Associate Professor of Information Systems, University of Maryland, Baltimore County. Her research aims to improve knowledge management and human decision making by designing and developing intelligent technologies.

REVIEWERS

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The IBFR
P.O. Box 4908
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