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Executive Compensation Following Spin-Offs

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ABSTRACT

We examine CEO compensation following spin-offs. We find that CEOs are rewarded for undertaking a spin-off. We also find that this reward is negatively associated with the change in firm size but positively related to previous firm performance. Our results contribute to the pay for performance versus pay for size debate by showing that following spin-offs, which reduce firm size but are generally associated with increased firm performance, CEO compensation increases.

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Introduction

It is common knowledge that bigger firms pay executives more. The relation may not necessarily arise out of agency problems. An executive managing more resources in the form of a bigger firm will demand more compensation. Moreover, increasing firm size can be one way of performing well. Nevertheless, a major focus of studies based on the agency conflict in the firm has been the link between executive compensation and firm performance. Managers can be made to act in shareholder interests if their compensation is linked to shareholder wealth. Numerous studies have documented a statistically significant relation between executive pay and changes in shareholder wealth. However, as noted by Rosen (1992) there are several problems associated with such studies. Firm performance is invariably related to firm size. This has implications as it becomes difficult to distinguish pay for performance from pay for size. It is thus interesting to look at cases where firm size and shareholder wealth do not increase concurrently. Some studies examine changes in executive pay when managers increase firm size but not necessarily firm performance, as in the case of mergers and acquisitions. One conclusion from such studies is that managers get rewarded for increasing firm size even though this may not increase shareholder value. At the opposite end of the spectrum of mergers and acquisitions are spin-offs. While mergers increase firm size and on average reduce shareholder wealth, corporate spin-offs are documented to decrease firm size and increase shareholder wealth. This study examines executive compensation surrounding spin-offs. We find that executive compensation increases following a spin-off. This increase is significant after accounting for firm size, performance, growth opportunities and other firm and executive characteristics. Moreover, while CEO compensation is significantly related to firm size, following spin-off CEO compensation is negatively associated to firm size changes. However, the increase in CEO compensation is not related to the expected performance changes from the spin-off. Our results also suggest that CEOs with better performance in previous years are rewarded more following a spin-off.

Literature Review

Rosen (1992) notes that top executive's pay increases with the size of the firm. He comments that large firms are likely to be headed by more able executives and this has little bearing on whether they are profit or sales maximizer. He notes that studies of pay-performance sensitivity have multicollinearity problems because firms with large assets and sales also have large accounting profits in absolute terms. Rosen (1992) further acknowledges that since size must be an important correlate of pay if more talented persons control greater resources, posing the agency questions in terms of sales versus profits may not be meaningful. Studies estimating the relation between pay and firm size have found significant pay sales sensitivity estimates ranging from 0.2 to 0.32 (Murphy, 1985; Kostiuk, 1989; Barro and Barro, 1990). The pay sales relation poses problems in establishing a clear relationship between executive pay and firm performance

Pay-performance sensitivity surrounding mergers

Recently several authors have examined whether increase in firm size due to mergers affects executive compensation. The commonly held view on mergers is that on average mergers destroy value for bidding shareholders. Bliss and Rosen (2001) find the mergers have a net positive effect on CEO wealth mainly due to the effect of size on compensation. They document that asset size increases caused by mergers are significantly related to increased cash and total compensation following mergers. They show that growth in firm size through any means adds similar amounts to compensation. They conclude that one can view mergers as an easy way to rapidly increase compensation by CEOs. Harford and Li (2007) complement the findings of Bliss and Rosen (2001) by examining pay-performance sensitivity around acquisitions. They find that CEOs are financially better off from making acquisitions because post acquisitions the CEO*'s wealth increases even if* she makes a poor acquisition decision. Their evidence supports the view that post-acquisitions CEOs are mostly better off as they get rewarded for successful acquisitions but not punished for unsuccessful ones. The evidence from both of these studies suggests that pay may be more affected by changes in firm size as against performance. Such findings do not sit well with arguments of setting pay in a manner which lowers agency conflict. Further examination of the *performance versus size* phenomenon is hence an interesting prospect. This study examines executive compensation around another type of corporate reorganizations- spin-offs.

Spin-offs

A spin-off is the opposite organizational form of a corporate acquisition.in a spin-off the parent company distributes the stock of a subsidiary to existing shareholders on a pro-rata basis, and the subsidiary becomes a new independent entity. The size of the divesting firm is reduced since no cash proceeds are received. Spin-offs repackage ownership across existing shareholders, produce no cash, and reduce the level of assets under the control of the parent management. What makes spin-offs interesting is the general evidence that they improve firm performance. While spin-offs reduce the size of the firm, they are generally associated with improved performance, in contrast of corporate mergers and acquisitions.

There is a broad consensus in both the academic and the popular literatures that spin-offs tend to create value for shareholders (Veld and Veld-Merkoulova 2004). This consensus is based on evidence from a number of studies indicating that, on average, the announcement of a spin-off is associated with a positive abnormal stock return. Moreover, shares of firms completing spin-offs exhibit excess returns over periods of up to three years following the restructuring. Announcements of spin-offs by firms are associated with strongly significant abnormal returns that range from 1.32% to 5.56%. (Rosenfeld 1984; Johnson, Klein, Thibodeaux., 1996; Daley, Mehrotra, and Sivakumar, 1997; Desai and Jain, 1999, Krishnaswami and Subramaniam, 1999, Mulherin and Boone, 2000 and Maxwell and Rao, 2003). A number of studies also find long-run superior performance of spun-off firms and their parents. Cusatis, Miles and Woolridge (1993) show that even the long-term performance of firms involved in spin-offs is abnormally positive. Desai and Jain (1999) and McConnell, Ozbilgin, and

Wahal, (2001) find that parents and subsidiaries, involved in a spin-off, outperform matching firms.

The exhaustive evidence from these studies shows that on average spin-offs increase shareholder wealth despite decreasing the size of the firm. This study seeks to examine changes in executive compensation following spin-offs. We expect spin-offs to be associated with an increase in top executive compensation after accounting for firm performance and size for the year.

> Hypothesis 1: CEO compensation increases in the year following a spin-off.

We conjecture that CEO compensation should increase following a spin-off despite the decrease in firm size. CEOs who go ahead with the value increasing spin-off decision should be rewarded through higher compensation in the year of the spin-off.

Studies on the agency problem have often stressed on the importance of linking pay to performance. We expect that compensation changes following spin-offs to be positively associated with expected performance increases due to the spin-off and negatively associated with changes in firm size in the year of the spin-off.

> Hypothesis 2: CEO compensation increases in the year of a spin-off are significantly related to expected performance increase due to the spin-off and negatively related to firm size changes in the year of the spin-off.

Data and methodology

We form our initial sample of firms with spin-off reorganizations on the CRSP during the period 1992-2006. Similar to Desai and Jain (1999) our initial sample contains all firms on CRSP with a distribution code 3762-5 indicating reorganization and spin-off. This yields an initial sample of 245 spin-offs. We further verify and obtain spin-off announcement dates by searching for spin-off news announcements by the sample companies on the Wall Street Journal Corporate News Index and the Lexis-Nexis All News wires service. Following Krishnaswamy and Subramaniam (1999) we search the Lexis-Nexis database for up to two years before the CRSP date for the earliest press announcement of the spin-off. This procedure results in 196 spin-offs. The use of firm data from Compustat and Execucomp databases further decreases our sample to 107 spin-offs by firms with a total of 1181 CEO year observations. Our use of panel data necessitates the use of fixed and random effects models, which cause further reduction in our sample size. Our fixed effects models have 931 CEO year observations while our random effects models have 795 CEO year observations each. Table 1 presents the summary statistics for the sample of firms in this

Table 1
Sample Formation and Descriptive Statistics

Number of Spin-offs from CRSP	245
Spin-offs with News announcements available	196
Spin-offs with data on Execucomp & Compustat	107
Spin-off firms with Executive data on Execucomp	99
Total CEO years for sample firms available from Execucomp	1181
CEO year observation in Fixed effects model	931
CEO year observation in Random effects model	795

	Total Assets ($millions)	Return on Assets (% * 100)	Market Value of Equity ($Millions)	Total Compensation for the Executive ($Thousands)	Market Value/ Book Value of Equity
Mean *	30,960.49	4.930	18,148.72	10,369.04	4.37
Median *	5,543.48	4.745	5,701.38	4,883.85	2.45

*Mean and median statistics are for all firm years in our sample study. The average (median) total asset for our sample firms is about $31 billion ($5.5 billion) and market value of equity is about $18 billion ($5.7 billion). The data shows presence of several very large firms in our sample. This is expected because Execucomp data is available only for large firms. The average total annual compensation for CEO's in our sample is about $10.37 million ($4.9 million).

Our first hypothesis tests whether executive compensation is higher following a spin-off. To test this Hypothesis we employ the following regression model:

Total CEO Compensation (t) = f (ROA,
total assets,
Dummy for year of spin-offs,
other control variables) (1)

Our second hypothesis test whether executive compensation following a spin-off is related to expected performance changes due to the spin-off and firm size and performance changes in the year of the spin-off. To test this we employ the following regression model:

Total CEO Compensation (t) = f (ROA,
change in total assets,
Dummy for year of spin-offs,
Performance in the year of the spin-off,
CAR around a spin-off,
other control variables) (2)

The Cumulative Abnormal Return (CAR) should represent the markets expectation of performance changes from the spin-off. In our models we introduce include the following variables as measures for firm and CEO characteristics-

Firm Performance- Since stock returns in the year of the spin-off are influenced by the spin-off announcement, our primary measure of performance is Return on Assets (ROA). Following Barber and Lyon (1996) we compute abnormal operating performance as the difference of between actual ROA and expected ROA. The actual ROA for the firm year is obtained directly from compustat. The expected ROA is computed as follows- the sum of the firms ROA in the previous year and the changes in the industry matched ROA over the last year. Industry matched ROA is the median ROA of all firms in the same two digit SIC code and ROA within 90-110% of the original firm in first year.

Expected Performance Changes- We use cumulative abnormal return as a proxy for the expected performance changes from the spin-off. Market efficiency implies that stock prices should reflect the expected performance changes following a spin-off announcement. We use the three day announcement period window (-1, 0, +1; 0 being the announcement date) to calculate the cumulative abnormal return. The CAR is obtained using the market model. The CRSP value weighted index as a proxy for the market. The estimation period of the parameters for the market model is -100 to -11.

Size of the firm - Rosen (1992) notes that there is a substantial influence of size on pay. We control for this by including total assets for the year in the regression models,

Change in firm size – We compute the change in firm size for the firm in the year as the difference between current year total assets and previous year total assets.

CEO Age - Gibbons and Murphy (1992) argue that changes in bonus, value of stock and options should be higher for older CEOs. We obtain data on CEO age from Execucomp.

Growth opportunities - We use the ratio of Market to Book value of equity as a proxy of growth opportunities.

Dummy for the year of the spin-off- We introduce a dummy variable equal to 1 for the year in which the firm reports a spin-off. Our objective is to identify years of spin-off for CEO compensation and we therefore identify all years following the year reported for a spin-off if the spin-off took place in the last 6 months of the previous year.

Total Compensation for the CEO- Total compensation for the CEO is the sum of salary, bonus, value of restricted stock granted, value of stock options granted, long-term incentive payouts, and all other compensation during the year as reported in Execucomp.

Indicator variables for the interaction between Spin-off year and firm size, performance during the year- We introduce indicator variables in our model to test the second hypothesis. We interact the spin-off year dummy variable with ROA(t), ROA(t-1), change in firm size, and the Cumulative abnormal return variables.

Results

Panel Data analysis

Table 2 presents the regression results for model 1. We run various specifications for our pooled data. Hausman specification tests support the use of fixed effects models over ordinary least squares and random effects models. Table 2 gives the results for fixed and random effects models. The results show a statistically significant relation between change in firm size and CEO compensation. Our measures of firm performance- ROA, is insignificant in the simplest specification. Abnormal ROA also is only significant at the 10% level of significance. However, previous year's firm performance is related positively and significantly to compensation. This suggests that CEO compensation is related more to previous year firm performance than current year performance. Consistent with previous research, age is positively and significantly associated with CEO compensation. Our results also suggest that growth opportunities do not affect CEO compensation as M/B ratio of equity is insignificant. Finally our results also suggest that CEO compensation increases significantly in the year of the spin-off. The year of spin-off dummy variable is generally significant across model specifications at the 5% level. The results from the regression analysis thus support our first hypothesis, indicating that CEOs who oversee spin-offs (which

Table 2, Panel A Regression Results One Way Fixed Effects Estimation						
Intercept	**-40437.6** (0.0037)	**-40456.3** (0.0037)	**-42328** (0.0016)	**-43545.7** (0.0012)	**-33866.9** (0.013)	**-32558.2** (0.0173)
CEO Age	**790.67** (0.0002)	**787.19** (0.0002)	**826.421** (<.0001)	**837.83** (<.0001)	**640.97** (0.0024)	**625.06** (0.0032)
Market value of equity					**0.102** (0.0013)	**0.105** (0.001)
Market to book value of equity		0.232 (0.2709)	0.21562 (0.2946)	0.0004 (0.998)	-0.005 (0.9765)	0.0001 (0.9994)
Total Assets	**0.012605** (0.1856)	**0.012657** (0.1831)				
Change in total assets (t)			0.177 (<.0001)	0.176 (<.0001)	0.147 (<.0001)	0.147 (<.0001)
Extraordinary payment	686.92 (0.7343)	765.76 (0.7045)	608.584 (0.7575)	621.89 (0.7519)	507.90 (0.7957)	412.25 (0.8336)
Abnormal ROA(t)		**-127.986** (0.052)	**-119.76** (0.063)			
Return on Assets (t)	-69.10 (0.4393)			**-119.90** (0.1739)		**-99.65** (0.252)
Return on Assets (t-1)				**249.90** (0.0056)		
Spin-off year Dummy	**3576.55** (0.058)	**3519.46** (0.061)	**4190.59** (0.022)	**4545.50** (0.013)	**4291.54** (0.018)	**4027.90** (0.028)
R Square	0.3933	0.3959	4243	0.4284	0.4298	0.4309
F Tests for No Fixed effects	<.0001	<.0001	<.0001	<.0001	<.0001	0.0002
Number of observations	931	931	931	931	931	931

are on average value increasing) are rewarded through increased compensation following the spin-off.

Regression results

Table 2 presents results from unbalanced panel fixed and random effects regression results with total CEO compensation as the dependent variable. CEO age is the age of the CEO as reported in Execucomp. Market value of equity is the closing share price of common share times the total common share outstanding. Market to book value of equity is the market value of equity divided by the book value of equity, which is calculated as total assets plus deferred tax credit and convertible debt less preferred stock and total liabilities. Total assets are year end total assets as reported in Compustat. Change in total assets is the difference between total assets reported in year t and t-1. Extraordinary payment is an indicator dummy variable set as 1 for any special comment given in Execucomp for CEO compensation during the year. Abnormal ROA is the difference between actual and median industry and performance matched ROA for the firm. Return on Assets (t) is the accounting return on assets from year t-1 to t as reported in Compustat. Return on Assets (t-1) is the accounting return on assets from year t-2 to t-1 as reported in Compustat. Spin-off year dummy is an indicator variable equal to 1 in the year of the spin-off, if the spin-off record date was in the first half of the year; and 1 in the year following a spin-off if the spin-off, if the spin-off record date was in the latter half of the year. The model is estimated for all firm years available on Execucomp for firms with a spin-off. Boldface type indicates significance at the 10% level or better.

Cumulative Abnormal Returns

We calculate the cumulative abnormal return to spin-off announcements by firms in our sample

Table 2, Panel B
Regression Results
One Way Random Effects Estimation

Intercept	**-14183.9** (0.035)	**-14391.6** (0.032)	**-15304.5** (0.018)	**-15711.9** (0.018)	**-10607.9** (0.066)	**-9453.8** (0.098)
CEO Age	**384.73** (0.001)	**385.4149** (0.001)	**413.35** (0.000)	**415.07** (0.000)	**287.74** (0.005)	**280.57** (0.006)
Market value of equity					**0.1324** (<.0001)	**0.1392** (<.0001)
Market to book value of equity		0.2083 (0.290)	0.1967 (0.307)	0.0519 (0.753)	0.0282 (0.860)	-0.0117 (0.942)
Total Assets	**0.0441** (<.0001)	**0.0442** (<.0001)				
Change in total assets (t)			**0.238** (<.0001)	**0.233** (<.0001)	**0.195** (<.0001)	**0.193** (<.0001)
Extraordinary payment	136.85 (0.946)	152.49 (0.940)	240.44 (0.904)	228.03 (0.909)	392.41 (0.837)	164.87 (0.931)
Abnormal ROA(t)		**-119.862** (0.083)	-109.226 (0.107)			
Return on Assets (t)	-45.71 (0.591)			**-155.11** (0.091)		**-161.44** (0.042)
Return on Assets (t-1)				**201.571** (0.030)		
Spin-off year Dummy	**3483.78** (0.090)	**3443.24** (0.093)	**4636.09** (0.021)	**4717.93** (0.019)	**4353.58** (0.029)	**4040.71** (0.043)
R Square	0.071	0.075	0.112	0.112	0.169	0.176
Hausman Specification Test	0.001	0.001	<.0001	<.0001	0.002	0.0043
Number of observations	795	795	795	795	795	795

Table 3 **Cumulative Abnormal Returns**					
Event Window	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Median Cumulative Abnormal Return	Patell Z	Generalized Sign Z
(-2,0)	2.50%	2.19%	1.67%	6.21***	3.197**
(-3,+1)	2.86%	2.69%	2.42%	5.93***	3.432***
(-10,+10)	3.53%	2.76%	4.80%	2.96**	2.961**
(-10,-1)	2.04%	1.98%	1.94%	3.08**	2.018*
(-1,0)	2.65%	2.23%	2.02%	7.74***	4.139***
(-1,+1)	3.04%	2.67%	2.70%	7.59***	4.139***

on spin-off announcement date obtained from news searches. We estimate model parameters using the estimation window -100 to -11 where day 0 is the date of the spin-off news. The results for several event windows are given in Table 3. Consistent with results in previous studies, the CAR across various event windows for our sample firms is positive and significant and range from 2% to 3.5%.

CEO compensation following spin-off

If CEOs are rewarded for increasing performance through a spin-off then their increased compensation should be related to the expected performance changes from the spin-off. Market efficiency implies that the CAR to spin-off announcement should be related to the expected performance changes from the spin-off. Table 4 gives the results for regressions for model 2 with CEO compensation as dependent variable and dummy for the year of the spin-off interacted with CAR to the spin-off along with other control variables.[1] If expected performance changes are associated with CEO compensation changes following a spin-off then we expected the dummy variable interacted with the CAR to be positive and significant. Results from the regression however do not support such a conclusion as the interaction variable is insignificant. Results from other model specifications show that the change in CEO compensation following a spin-off is negatively associated with the change in the size of the firm in the year of the spin-off. The size interaction variable is negative and significant while the ROA and abnormal ROA interaction variables are also negative and significant. The interaction variables between spin-off year dummy and ROA is insignificant. This is interesting because this implies that CEOs are rewarded for decreasing firm size in the year of the spin-off. This suggests that the positive relation between firm size and CEO compensation does not apply to the year after a spin-off.

Finally, the indicator variable for the interaction between previous year's ROA and spin-off dummy is positive and significant. This suggests that CEO compensation following the spin-off is related to previous years' ROA and negatively to current years' ROA. It should be noted that in the spin-off year the ROA would likely be affected by the spin-off, making it a biased proxy for actual performance for the year. The significance of the previous years' ROA variable is interesting because that implies CEOs with better prior performance are rewarded more for going through with a spin-off.

Table 4 reports results from a fixed effects regression with total CEO compensation as the dependent variable. Variables CEO age through Spin-off year dummy are as described in Table 2. Spin-off year dummy*CAR is the interaction variable between the Spin-off year dummy variable and the Cumulative abnormal return to the spin-off announcement for the (-1,0,+1) event window. Spin-off year dummy*Abnormal ROA is the interaction variable between the Spin-off year dummy variable and the variable Abnormal ROA. Spin-off year dummy*Change in total as-

1 In Table 4 we only present results from fixed effects estimation because Hausman specification tests support the use of fixed effects models over random effects models

sets is the interaction variable between the Spin-off year dummy variable and the variable change in total assets. Spin-off year dummy* ROA (t) is the interaction variable between the Spin-off year dummy variable and the variable ROA(t). Spin-off year dummy* ROA(t-1) is the interaction variable between the Spin-off year dummy variable and the Abnormal ROA(t-1). The model is estimated for all firm years available on Execucomp for which there was a spin-off. Boldface type indicates significance at the 10% level or better.

Conclusion

Multicollinearity between firm size and performance makes it difficult to distinguish between pay for size against pay for performance. Studies on CEO compensation surrounding mergers show indirect evidence of CEOs being rewarded for increasing firm size. This study examines executive compensation surrounding spin-offs, which reduce firm size but are generally associated with improved firm performance.

Our results suggest that CEOs who go ahead with a spin-off are rewarded through higher

Table 4
CEO Compensation in the Year of the Spin-Off

Intercept	**-34163.1** (0.012)	-37772.8 (0.005)	**-35642.6** (0.008)	-37914.0 (0.005)
CEO Age	**646.22** (0.002)	**692.51** (0.001)	**659.37** (0.001)	**688.42** (0.001)
Market value of equity	**0.102** (0.001)	**0.135** <.0001	**0.138** <.0001	**0.133** <.0001
Change in total assets (t)	**0.147** <.0001	**0.179** <.0001	**0.178** <.0001	**0.178** <.0001
Extraordinary payment	463.12 (0.814)	447.18 (0.817)	745.31 (0.697)	1018.51 (0.595)
Abnormal ROA(t)			-22.15 (0.680)	
Return on Assets (t)				11.91 (0.905)
Return on Assets (t-1)				147.68 (0.107)
Spin-off year Dummy	**4656.65** (0.017)	**5321.72** (0.006)	**4486.75** (0.012)	**4367.69** (0.020)
Spin-off year Dummy* CAR	-11503.80 (0.595)	-14495.70 (0.496)		
Spin-off year Dummy*Abnormal ROA			**-690.58** (0.001)	
Spin-off year Dummy*Change in total assets		**-0.38** <.0001	**-0.37** <.0001	**-0.37** <.0001
Spin-off year Dummy* ROA(t)				**-782.67** (0.000)
Spin-off year Dummy* ROA(t-1)				**883.75** (0.000)
R Square	0.430	0.449	0.458	0.465
F Tests for No Fixed effects	<.0001	<.0001	<.0001	<.0001
Number of observations	931	931	931	931

compensation following the spin-off. However, increase in CEO compensation following a spin-off cannot be explained by expected performance changes from the spin-off itself. Interestingly, increase in CEO compensation following a spin-off is positively related to the decrease in firm size. Also, CEOs whose firms witness better performance in the year before a spin-off receive higher compensation following a spin-off. One interpretation of this result could be that CEOs who have performed well in the previous year are rewarded more for the spin-off decision because they likely have a better performance record.

Our study contributes to the debate on pay for performance over pay for size. The general conclusion from other studies is that CEO's get rewarded for increasing firm size. Our results indicate despite the positive relation between firm size and CEO compensation, in the year following a spin-off, CEOs are rewarded for decreasing firm size through spin-offs which are generally perceived as being better for firm performance.

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An Examination of the Impact of Alternative Accounting Procedures on Risk-Taking Behavior: A Test of Prospect Theory

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ABSTRACT

Many business decisions which use accounting information are made under conditions of uncertainty and are biased, in part, on relative gains and losses. Therefore, accounting settings appear to be a particularily appropriate setting to test the predictions of prospect theory. To date, little accounting research has been conducted which has used prospect theory as its theoretical foundation. Using a discount period decision under risk, practicing accountants were asked to indicated he likelihood of making an inventory payment. The results of the study provide limited support fo prospect theory propositions. It also is interesting that the perceptions of and ethical conflict by subjects significantly impacts the likelihood assessments made by the subjects.

Introduction

Accounting practice is guided by a comprehensive set of generally accepted accounting principles (GAAP). In many instances, there exist several acceptable alternatives from which to choose in accounting for a particular business transaction. In theory, these alternatives are equally representative and equally informative to users of financial statements. Since each of these alternatives is intended to maintain the same degree of representational faithfulness, a choice of one accounting alternative over another should not lead to a difference in subsequent behavior. Business decisions which are made based on the accounting data generated through the use of one acceptable alternative should not differ from decisions made based on another alternative.

Considerable accounting research has been conducted in an effort to determine whether investment and credit decisions differ as a result of the choice of an accounting alternative. In particular, a great deal of research has been conducted which investigates the reaction of the stock market to changes between inventory valuation techniques (FIFO vs. LIFO). In general, this research has been conducted at a macro-level and has yielded mixed results. (For a review of this literature, see Lindahl, Emby, and Ashton, 1988.) An interesting alternative to this type of research is to investigate investment and credit decisions in an experimental setting. One particular accounting situation which warrants empirical investigation is the area of accounting for purchase discounts in recording inventory cost. GAAP allows for two alternative treatments in the costing of inventory when cash discounts are available. The purpose of this research is to investigate the impact of these two accounting alternatives on decision making.

Theoretical Background and Hypothesis Development

As an alternative to expected utility theory, Kahneman and Tversky (1979) introduced a descriptive model of decision making under risk, called prospect theory. Through a series of experiments, Kahneman and Tversky demonstrated that an individual's decision making behavior may vary based on how an individual perceives the possible outcomes. Specifically, the theory suggests that a decision maker is likely to choose a riskier alternative when he perceives that outcomes are potential losses than when the outcomes are potential gains.

For example, Kahneman and Tversky asked decision makers to choose between two "positive prospects." Individuals were asked if they would prefer (a) $3,000 or (b) an 80% probability of receiving $4,000. The expected utility of the second choice is $3,200 ($4,000 x 80) and is greater than the expected utility of the first alternative ($3,000). However, when the two alternatives were prospective gains, the subjects overwhelmingly chose the sure chance of $3,000 rather than the 80% chance of receiving $4,000. Kahneman and Tversky suggest that when decision makers must choose between positive prospects, they tend to be risk averse.

The authors also asked subjects to choose between two negative prospects. Decision makers were asked to indicate whether they would prefer (a) a sure loss of $3,000, or (b) an 80% probability of losing $4,000. The expected loss of utility of the second choice is -$3,200 (-$4,000 x 80%) and more negative than losing $3,000. Thus, expected utility theory predicts that a sure loss of $3,000 is preferable to an 80% chance of a $4,000 loss. However, 92% of the subjects chose the second alternative instead of the first. Kahneman and Tversky conclude that, while decision makers are risk averse when prospects are positive, they exhibit risk seeking behavior when prospects are negative.

Many business decisions which use accounting information are made under circumstances of uncertainty and are based, in part, on relative gains and losses. Therefore, accounting settings appear to be a particularly appropriate setting to test the predictions of prospect theory. To date, little accounting research has been conducted which has used prospect theory as its theoretical foundation. The majority of the prospect theory research that has been conducted in accounting has been in the area of tax compliance (for example, see Schepanski & Kelsey, 1990; and White, Harrison, & Harrell, 1993). This research has demonstrated that taxpayers are more likely to claim a questionable deduction (risk seeking behavior) when it appears that they are in a tax liability position than when they are in a tax refund position.

However, there appear to be other common accounting situations in which prospect theory may be an appropriate model in describing accounting decisions. One application that appears to be particularly relevant is the method by which accountants are allowed to account for the cost of purchases of inventory. Inventory represents a major cost on the income statement of most manufacturing and merchandising firms. Generally accepted accounting principles (GAAP) allow for two acceptable alternatives in accounting for the cost of inventory purchases, the gross method and the net method.

Cash flow is critical to most vendors and suppliers. Therefore, these suppliers of inventory to merchandising and manufacturing firms frequently provide for special credit discounts if a purchaser is willing to pay for an invoice within a relatively short period of time. For example, credit terms are often stated 2/10; n/30, which means that the purchaser has the choice of a 2% discount if payment is made with 10 days of the invoice; otherwise, payment in full is required within 30 days.

GAAP has allowed for two accounting alternatives for the purchaser. The first alternative, the gross method, requires that the purchaser record the purchase at the invoice or gross amount. If the purchaser chooses to pay within the discount period, he pays the discounted amount and the discount serves to reduce the cost of the purchase. The second method, the net method, assumes that the purchaser takes advantage of all discounts. Accordingly, all purchases are recorded at the discounted or net amount. If the purchaser chooses not to pay within the discount period, he must record a loss for the amount of the discount. The effect on net income is the same for both methods, and both are used in practice.

This choice among accounting alternatives, the gross method or the net method of accounting for purchases, is an appropriate application to test the robustness of prospect theory. Good cash management suggests that all cash discounts should be taken. However, it is conceivable that, due to cash flow constraints, a management accountant might be faced with a situation in which a discount period was expiring, and cash was not readily available to make payment and take advantage of the discount. Suppose that two management accountants are faced with the decision described above. Accountant A recorded his original purchase using the gross method. If he chooses to make payment within the discount period, he records a purchase discount and reduces the cost of his purchase. Accountant B recorded his original purchase using the net method. If he elects to make payment within the discount period, no additional entry is necessary, since he originally recorded the purchase at the net (invoice less discount) amount. The net effect both methods is to reduce the cost of the purchase. Both of these prospects appear to be positive.

Alternatively, assume that both accountants choose not to make payment within the discount period. Accountant A simply waits until the due date of the invoice and makes payment. No additional entry is necessary in this case since the original invoice was recorded at the gross amount. Accountant B recorded the original purchase and the associated liability at the net amount. If he chooses to pay after the discount period, his liability is now greater than the amount originally recorded. GAAP requires that Accountant B record a loss for this difference. It appears that Accountant B is faced with a negative prospect.

It is at this point that prospect theory applies. When an accountant chooses not to make payment within a discount period, the decision results in a reduction in net income. This is true, whether the accountant has adopted the gross or the net method of accounting for purchases. Expected utility theory suggests that, since the final wealth state is the same, payment behavior will not differ between the gross and the net methods. However, prospect theory suggests that decision makers who have loss prospects (the net method) are more risk seeking. Therefore, prospect theory would suggest that accountants who face a loss will be more likely to take a risk and make payment during a discount period (even though cash may not be available) than accountants who do not face a loss. Accordingly the following research hypothesis is proposed:

H1: Accountants who adopt the net method of accounting for inventory purchases will be more risk-seeking that accountants who adopt the gross method.

Mowen and Mowen (1986) demonstrated that the size of a discount in relation to the purchase price affects the likelihood that a decision maker will attempt to claim a discount. Accordingly, a second hypothesis, designed to examine the impact of materiality, is proposed.

H2: The materiality of a discount in relation to net income will affect the risk preferences of accountants.

Research Methodology

In order to examine the research hypotheses, a decision-making experiment, using practicing accountants was conducted. A between-subjects 2 x 2 factorial design was used. (See Table 1.) The decision task required subjects to indicate the likelihood that he or she would make payment within a discount period under uncertain (and risky) conditions. The subjects were randomly assigned to one of the four treatment cells. (See Table 1.)

Subjects also were asked to provide general demographic information to determine whether the random assignment to treatments was successful. Appropriate statistical tests were conducted to determine whether any of these demographic characteristics were predictors of the dependent variable. The results of these tests indicate that the probability assessment required in the experimental task was not affected by any of the demographic characteristics.

TABLE 1 Research Design Cell and Treatment Means			
Materiality of Discount	Method of Recording Purchases		Treat-ment Means
	Gross	Net	
High 8% of Net Income	31.41 n=29	41.67 n=30	36.63 n = 59
Low 2% of Net Income	23.67 n=29	28.29 n=31	25.77 n = 60
Treatment Means	27.24 n = 58	34.87 n = 61	31.15 n=119

Subjects

Participants in the experiment were accountants who are experienced in similar decisions. A total of 119 subjects participated in the task. The subjects were Certified Public Accountants (CPAs) and Certified Management Accountants (CMAs) attending a Continuing Professional Education (CPE) seminar. Participation in this project was voluntary. In order to encourage the subjects to respond accurately and honestly, their anonymity was assured.

A summary of the demographic characteristics of the sample is provided in Table 2. The subjects reported an average work experience of 15.6 years. Almost all of the subjects (92.4%) were CPAs. Slightly more than one-half (56.3%) of the subjects were employed as accountants in private industry. The remainder (43.7%) were in public practice. These demographic statistics suggest that the sample was well-qualified for the experimental task.

Research Instrument

Appendices 1 and 2 provide examples of two of the four cells of the research design. The first independent variable manipulated in the instrument was the choice of the accounting alternatives used for recording purchases. Subjects were informed as to company policy regarding either the gross or net methods. This accounting policy decision is generally made by the managing accountant and, for the sake of consistency, generally does not vary between vendors. The second experimental manipulation was the materiality of the discount. This variable was manipulated in relation to net income.

Appendix 1 provides an example of the gross method/high materiality manipulation (Cell 1 of Table 1). Subjects were informed that the adopted accounting policy requires that all purchases be accounted for using the gross method and that monthly net income has averaged $50,000. Accordingly, the discount of $4,000 is considered material ($4,000/$50,000 = 8% of income). Appendix 2 is an example of the net method/low materiality manipulation (Cell 4 of Table 1). In this treatment, subjects were informed that company accounting policy requires that all purchases be accounted for using the net method and that monthly net income has averaged $200,000. Accordingly, the discount is considered immaterial ($4,000/$200,000 = 2% of income). Note that in Appendix 2, the subject must decide whether to make payment under risky conditions or recognize a loss. In Appen-

TABLE 2 Summary of Subject Demographics	
Gender	73 (61.3%) were male. 46 (38.7%) were female.
Age	Subjects reported a mean age of 42.3 years. Age ranged from 23 to 67 years.
Experience	Subjects reported an average of 15.6 years of work experience. Experience ranged from 1 to 44 years.
Certification	110 (92.4%) of the subjects reported that they were Certified Public Accountants.
Current Employment	52 (43.7%) were currently employed in public accounting. 67 (56.3%) were currently employed in industry.

dix 1, subjects do not face a loss decision if they choose not to make payment.

The experimental task required the subjects to indicate the probability that they would make a payment in order to take advantage of a discount when there existed some uncertainty as to the availability of cash. The instructions indicated that if the subject chose to make payment, he would have to depend upon the cash receipts of the following business day to cover the check. Participants also were informed that if the check was returned due to insufficient funds, the supplier would enforce severe penalties. As a result, the decision faced by the subjects could be viewed as an ethical dilemma. Even though the practice of "riding the float" is common, it is considered by many to be an unethical practice.

Due to the possible presence of an ethical dilemma, a second research instrument was given to the subjects. This second instrument asked the subjects to indicate the degree to which the case presented an ethical conflict. (See Appendix 3.) This multidimensional ethics scale was adapted from the work of Flory et al. (1992) and McCoy (1994). In order to eliminate the possibility that the ethics scale would influence the subjects assessment of the probability of payment, this portion of the instrument was completed only after the probability of payment had been reported. The participants completed the probability of payment instrument and placed the instrument in an envelope. Then the subjects completed the ethical conflict instrument and placed it in another envelope. Both envelopes were returned to the administrator who coded the envelopes to ensure the responses were appropriately matched.

Results

The following linear model was used in the analysis of the experimental results:

$$Y = B_\emptyset + B_1X_1 + B_2X_2 + B_3X_3 + \varepsilon ,$$

where:

Y = the likelihood that payment will be made,

X_1 = treatment 1 - Accounting alternative (Gross or Net method),

X_2 = treatment 2 - Materiality of discount (High or Low),

X_3 = the perceived ethical conflict presented in the case, and

ε = error term.

While X1 and X2 were categorical variables representing the two levels of the two experimental manipulations, X3 was a continuous variable and was included in the model as a covariate (Tabichnick & Fidell, 1989).

Tables 1 and 3 provide a summary of the results of the analysis. Hypothesis 1 predicted that accountants who adopt the net method of accounting for purchases would be more likely to exhibit risk-seeking behavior. In the present study, risk-seeking behavior was defined as an increased probability that payment for an invoice would be made during the discount period even when the availability of sufficient cash was uncertain. Table 1 indicates that the mean probability reported by subjects assigned to the Net treatments was 34.87 (on a scale of Ø to 1ØØ). For subjects assigned to the Gross treatments, the mean probability was 27.24. While this is directionally consistent with the prediction of H1, Table 3 indicates that this difference is, at best, only marginally significantly ($F = 2.71$; $Prob > F = .1025$). Accordingly, weak support is provided for H1.

The second hypothesis predicted that the larger the purchase discount in relation to total monthly sales and net income, the greater the likelihood the subjects would exhibit risk-seeking behavior. Table 1 reports a mean likelihood of payment of 25.77 (on a scale of Ø to 1ØØ) for subjects in the Low Materiality treatment. Subjects in the High Materiality treatment reported a mean of 36.63. Table 3 indicates that the mean response of subjects in the High Materiality treatments differ significantly from subjects in the Low Material-

TABLE 3
Tests of Hypotheses 1 and 2
Analysis of Variance Results

Dependent Variable: Probability of making payment within discount period

Source	DF	Sum of Squares	F-Value	Pr > F	R-Square
Model	3	30404.285	15.88	0.0001	0.292875
Error	115	73408.993			
Corrected Total	118	103813.277			
Source	DF	Sum of Squares	F-Value	Pr > F	
Main effects:					
GROSS/NET	1	1729.706	2.71	0.1025	
MATERIAL	1	3549.477	5.56	0.0201	
Covariate:					
ETHICAL	1	25125.102	39.36	0.0001	

ity treatments (F = 5.56; Prob > F = .0201). Accordingly, these results provide support for H2.

Table 3 also reports the covariate results. To control for any variance in the dependent variable that could result from the ethical nature of the likelihood assessment required in the case, the perceived ethical conflict, a continuous variable, was included in the model. As seen in Table 3, the degree to which the decision presented an ethical conflict was closely related to the likelihood of payment (F = 39.36; Prob > F = .0001). Specifically, subjects were less likely to make payment within the discount period when they perceived that the payment presented an ethical conflict.

In summary, the experiment was designed to determine whether the choice of the net method of accounting for purchases discounts would increase the probability of risky decision behavior. The results of the experiment provide weak support for this proposition. In addition, the experiment examined the impact of the materiality of a purchases discount on decision behavior. The results indicate that the larger the discount in relation to income, the greater the likelihood of payment. Finally, when the case presented an ethical dilemma to subjects, they were less likely to make payment.

Conclusions

Prospect theory proposes that decision making behavior will vary according to the framing of potential outcomes. Specifically, the theory predicts that when an outcome is viewed as a potential gain, a decision maker will tend to be risk averse. Alternatively, when an outcome is viewed as a potential loss, a decision maker will be more prone to risk-seeking behavior. This study examined the tenets of prospect theory in an accounting setting.

The results of the study provide limited support these propositions. Subjects who faced a potential loss appeared to be more likely to make payment for an invoice under risky conditions than subjects who did not face such a loss (a likelihood assessment of 34.87 compared to a likelihood of 27.24). While this difference is only marginally significant, the differences are in the predicted direction. In addition, the results indicate that subjects were more willing to make payment under risky conditions when the materiality of the discounts was greater. Between-cell contrasts indicate that the likelihood assessment of subjects in the Net/High Materiality treatment differed significantly from the mean response of subjects in the remaining three treatments (F = 5.20; Prob > F = .0245). This suggests that the risk-seeking behavior was most pronounced when the possibility of a material loss existed.

In addition to the findings related to the two experimental treatments, the study suggests that the perception of an ethical conflict by subjects significantly impacts the likelihood assessment made by subjects. When subjects viewed the decision to "ride the float" as unethical, they were significantly less likely to exhibit risk-taking behavior. This finding suggests that ethical considerations may have some impact on the robustness of prospect theory. Additional research is warranted to investigate this possibility.

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APPENDIX 1

Gross Method / High Materiality

Assume that you are the controller for a mid-sized merchandising firm. For the past year, monthly sales for your firm have averaged $500,000 and monthly net income has averaged $50,000. As controller, your responsibilities include the approval of cash disbursements.

At present, a large portion of the merchandise that you sell is purchased from one manufacturer. Accordingly, payments to this manufacturer are a significant portion of your monthly disbursements. Based on the volume of your merchandise purchases and the credit history you have established with your supplier, you have been granted excellent credit terms. At present, your credit terms with your supplier are 4/10, n/30. Specifically, you are granted a 4% discount on purchases when payment is made within 10 days of delivery. Otherwise, the total amount (gross) of the invoice is due within thirty days. For your benefit, your supplier has set up an account at a local bank for you to deposit your invoice payments. This convenience allows you to wait until the afternoon of the 10th day after delivery to make payment and still receive credit within the discount period.

Realizing the significance of this discount and the generous credit terms, you have always paid within the discount period. Ten days ago, you receive delivery of Invoice #201, an unusually large order. The gross amount of this invoice was $100,000.

In order to pay Invoice #201 within the discount period and claim the discount of $4,000, payment must be deposited in your supplier's account this afternoon. Upon analysis, you determine that you do not have sufficient cash available to make payment today. In addition, you have no other immediate means to obtain cash.

In the past, your supplier has allowed you to take the 4% discount as long as you deposit your payment into the supplier's account during normal business hours on the 10th day after delivery. You have found, however, that if you wait until late afternoon to make payment, the check is not deducted from your firm's checking account until the following evening. Upon consideration, you determine that you could make payment today, and cover the payment with tomorrow's cash receipts, assuming the anticipated cash receipts are equal to those of a typical business day.

However, if you make payment today and the anticipated cash receipts do not materialize, your bank will not cover the check and will return it to your supplier unpaid. Your supplier has specified, in your credit agreement, that if any payment is returned by the bank for insufficient funds, your credit terms (and discount) will be cancelled and all future purchases will be shipped C.O.D.

In accordance with your company's accounting policies, all merchandise purchases are recorded and posted at the gross amount. Therefore, if you make payment today (within the discount period), you would record the following entry:

Accounts Payable	100,000	
Purchases Discount		4,000
Cash		96,000

If you wait until the end of the month to make payment, you would record the following entry:

Accounts Payable	100,000	
Cash		100,000

Given the circumstances described above, what is the likelihood that you would make payment today?

VERY UNLIKELY	VERY LIKELY

0------1------2------3------4------5------6------7------8------9------10

PLEASE INDICATE ANSWER BY PLACING A SLASH (/) ON THE LINE ABOVE.

APPENDIX 2

Net Method / Low Materiality

Assume that you are the controller for a mid-sized merchandising firm. For the past year, monthly sales for your firm have averaged $2,000,000 and monthly net income has averaged $200,000. As controller, your responsibilities include the approval of cash disbursements.

At present, a large portion of the merchandise that you sell is purchased from one manufacturer. Accordingly, payments to this manufacturer are a significant portion of your monthly disbursements. Based on the volume of your merchandise purchases and the credit history you have established with your supplier, you have been granted excellent credit terms. At present, your credit terms with your supplier are 4/10, n/30. Specifically, you are granted a 4% discount on purchases when payment is made within 10 days of delivery. Otherwise, the total amount (gross) of the invoice is due within thirty days. For your benefit, your supplier has set up an account at a local bank for you to deposit your invoice payments. This convenience allows you to wait until the afternoon of the 10th day after delivery to make payment and still receive credit within the discount period. Realizing the significance of this discount and the generous credit terms, you have always paid within the discount period. Ten days ago, you receive delivery of Invoice #201, an unusually large order. The gross amount of this invoice was $100,000.

In order to pay Invoice #201 within the discount period and claim the discount of $4,000, payment must be deposited in your supplier's account this afternoon. Upon analysis, you determine that you do not have sufficient cash available to make payment today. In addition, you have no other immediate means to obtain cash.

In the past, your supplier has allowed you to take the 4% discount as long as you deposit your payment into the supplier's account during normal business hours on the 10th day after delivery. You have found, however, that if you wait until late afternoon to make payment, the check is not deducted from your firm's checking account until the following evening. Upon consideration, you determine that you could make payment today, and cover the payment with tomorrow's cash receipts, assuming the anticipated cash receipts are equal to those of a typical business day.

However, if you make payment today and the anticipated cash receipts do not materialize, your bank will not cover the check and will return it to your supplier unpaid. Your supplier has specified, in your credit agreement, that if any payment is returned by the bank for insufficient funds, your credit terms (and discount) will be cancelled and all future purchases will be shipped C.O.D.

In accordance with your company's accounting policies, all merchandise purchases are recorded and posted at the net amount. Therefore, if you make payment today (within the discount period), you would record the following entry:

Accounts Payable	96,000	
Cash		96,000

If you wait until the end of the month to make payment, you would record the following entry:

Accounts Payable	96,000	
Loss on Forfeited Discounts		4,000
Cash		100,000

Given the circumstances described above, what is the likelihood that you would make payment today?

VERY UNLIKELY	VERY LIKELY

0------1------2------3------4------5------6------7------8------9------10

PLEASE INDICATE ANSWER BY PLACING A SLASH (/) ON THE LINE ABOVE.

PLEASE INDICATE ANSWER BY PLACING A SLASH (/) ON THE LINE ABOVE.

Appendix 3											
Please circle the number corresponding to the extent to which you believe you are presented with an ethical conflict in the above case.											
No Conflict	Ø	1	2	3	4	5	6	7	8	9	A Great Deal of Conflict
Suppose you decide to pay the invoice today. Please evaluate this action.											
Unethical	Ø	1	2	3	4	5	6	7	8	9	Ethical
Acceptable to My Employer	Ø	1	2	3	4	5	6	7	8	9	Unacceptable to My Employer
Violates an Unwritten Contract	Ø	1	2	3	4	5	6	7	8	9	Does Not Violates an Unwritten Contract
Traditionally Acceptable	Ø	1	2	3	4	5	6	7	8	9	Not Traditionally Acceptable
Just	Ø	1	2	3	4	5	6	7	8	9	Unjust
Morally Right	Ø	1	2	3	4	5	6	7	8	9	Not Morally Right
Culturally Acceptable	Ø	1	2	3	4	5	6	7	8	9	Not Culturally Acceptable
Violates an Unspoken Promise	Ø	1	2	3	4	5	6	7	8	9	Does Not Violate an Unspoken Promise

The Influence of Computer Self-Efficacy on Socio-Emotional Processes and Virtual Team Performance

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ABSTRACT

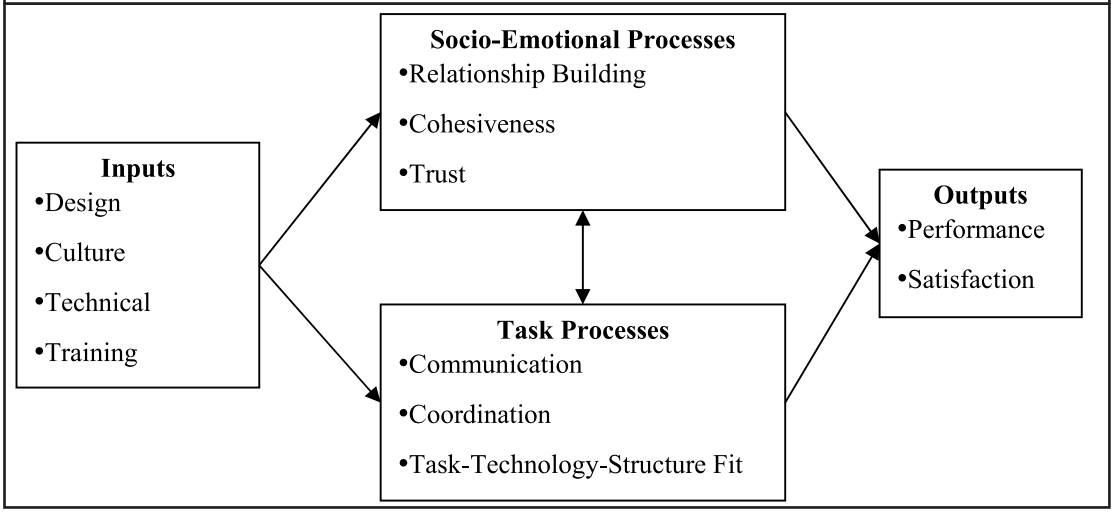
The advent of the global economy and advancement in technology has all contributed to a rise in the use of virtual teams to accomplish organizational objectives. While organizations have realized the gains offered by utilizing virtual teams, they have also encountered their shortfalls. Research focusing on these shortfalls has only begun to address pertinent issues relative to improving virtual team efficiency. This study addresses some of these issues by attempting to expand the nomological network of virtual team performance through the observation of key factors in the virtual team process. Specifically, the influence of computer self-efficacy on key socio-emotional processes and subsequent performance will be examined. Results should not only assist in advancing current research on virtual teams but their utilization and implementation in the workforce as well.

INTRODUCTION

Due to globalization organizations are constantly trying to find more effective and productive ways of conducting business. Recent evolution in communication technologies has provided the catalyst to do this, to include allowing the opportunity for virtual team formation. Virtual teams provide many advantages over traditional teams, including the ability to bridge time and space, and better utilization of distributed human resources without physical relocation of employees (Lipnack & Stamps, 2000). Recent popularity of virtual teams has coincided with an increase in research focusing on their development and performance. However, the majority of this research has focused on building the theoretical background for virtual team research, thus provoking a call for more specialized empirical research to begin to fill in the gaps. Powell, Picolli, and Ives (2004) developed a theoretical model of virtual team research. This model encompassed four major research areas that influenced the virtual team process: inputs, task-process, socio-emotional process, and outputs (see Figure 1). The purpose of this study is to begin to empirically test components of this model in an attempt to begin to fill in current gaps relative to virtual team research.

For this study the components examined fell in the research areas of inputs, socio-emotional processes, and outputs. The input chosen for this

FIGURE 1
MODEL OF EARLY TEAM RESEARCH
(ADAPTED FROM POWELL, PICOLLI AND IVES, 2004)



study is computer self-efficacy (CSE). While a number of studies have reported consequences of CSE such as enhanced performance (Yi & Davis, 2003), very little has been done on CSE as an antecedent to virtual team performance. This study will examine the direct relationship of CSE on performance as well as CSE's influence on socio-emotional processes. Though all socio-emotional processes are interrelated, we will concentrate only on the interdependence between trust and cohesion. For both trust and cohesion we will adopt the current conceptualization of the variables as multidimensional constructs. We believe that the findings of this study will contribute significantly both theoretically (to the advancement of research on virtual teams) and practically (to their use and implementation in organizations).

Virtual Teams

Virtual teams are teams whose members are geographically dispersed, working together on a common goal by means of electronic devices. Often, virtual teams consist of cross-functional members working on highly interdependent tasks and sharing responsibility for team outcomes (Malhorta, Majchrzak, & Rosen, 2007). Today, virtual teams have become an essential part of most organizations. Experience has demonstrated that teams of employees are more productive, more creative, and better able to meet the challenges of an increasingly dynamic business environment (Chelte, 2003). In addition, many sources mention such benefits of virtual teams as flexibility (people can work from any place and at any time), better access to global markets, responsiveness, lower costs (save money on the arrangement of working place, do not need to care about buying tickets, reservations in hotels, parking, etc).

Nevertheless, there are some disadvantages associated with virtual teams. Monshowitz (1997) singles out setup, maintenance, and training costs. In addition virtual teams deal with the same challenges as regular (face-to-face) teams do (isolation, leadership, trust establishment, etc.), but the extent to which they are exposed to them might be different. Obviously, one of the major differences between virtual and face-to-face teams that might affect performance is the inclusion of information technology to communicate. It could be assumed that if members of virtual teams were not comfortable utilizing this technology it may influence how well the team actually performs. Additionally, ascertainment of trust and the development of cohesion in both types of teams has become a significant issue being discussed in the literature. Both trust and cohesion are regarded as components of socio-emotional processes which are essential for the development and effectiveness of virtual teams. Regardless, the development of these socio-emotional processes is dependent on the inputs offered by the components of the virtual team system.

Computer Self-Efficacy

Powell et al., (2004) described inputs as "…the design and composition characteristics of the virtual team and the endowment of the resources, skills, and abilities with which the team begins its work" (p. 8). They further categorized inputs into design, culture, technical expertise, and training. CSE is defined as "an individual's perception of efficacy in performing specific computer-related tasks within the domain of general computing" (Marakas et al. 1998, p. 128). CSE is an extension of self-efficacy theory by Bardura (1986). Self-efficacy theory suggests that there are a number of sources of information that individuals used to form their judgments of perceived efficacy. These sources include such factors as past successes, training, and experience associated with the particular task (Staples et al., 1999). Therefore suggesting that an individual's CSE is related to both their past training associated with computers and/or their overall technical expertise. Thus CSE can easily be considered representative of an input as described by Powell et al., (2004). It should be noted that research has begun to look at different dimensions of CSE to include factors associated with perceived efficacy of certain programs or computer systems. However, given the exploratory nature of this research our focus will be on perceptions of general feelings of efficacy towards computers and technology assisted communication and subsequently how these feelings influence socio-emotional processes.

Socio-Emotional Processes

Socio-emotional processes are viewed as an inseparable part of teams' establishment. It is known that they distinctly influence the effectiveness of teams' performance, as well as it is suggested that virtual teams suffer more difficulties in attaining them (Jarvenpaa & Leidner, 1999). These processes include such components as relationship building, trust, and cohesion. In this study, we limit our examination to trust and cohesion.

Trust

Trust establishment is a major obstacle in team development. In a group context, trust is the confidence in group member's dependability and expertise (Krebs, Hobman & Bordia, 2006). In these circumstances, with high levels of trust within the team, all members will have confidence in each others actions and ideas. Establishment of trust in virtual teams is a more complicated process due to the concentration on tasks, rather than on developing mutual understandings within the team. Commonly, virtual teams are composed for temporary purposes such as the teams in this study. For this kind of teams Meyerson, Weick, and Kramer (1996) offered the concept of "swift trust" which was specially developed to explain behavior in temporary teams such as senate select committees, film crews, presidential commissions, etc. The swift trust paradigm suggests that when members do not have enough time to slowly build trust, team members assume that others are trustworthy and begin working as if trust were already in place (Meyerson et al., 1996). Current trust literature also recognizes that trust is a multidimensional construct with both cognitive (e.g., competence, reliability, professionalism) and affective elements (e.g., caring, emotional connection to each other) (Lewis & Weigert, 1985). Kanawattanachai and Yoo (2005) label these dimensions of trust as cognition-based trust (CBT) and affect-based trust (ABT).

Cohesion

Early definitions of cohesion are grounded in the work of Festinger, Schacter, and Back (1950), who define cohesiveness as the sum total of all the forces attracting members to a group. Recently, studies have begun to again support this multidimensional approach to cohesion. The two dimensions most often described in the literature are task cohesion and social cohesion (e.g Zaccaro & Lowe, 1986). Task cohesion has been described as an individual's liking or attraction to a group due to that group's commitment to a particular task (Hackman, Brousseau & Weiss, 1976). Social cohesion relates to the social aspect of the group and the interpersonal attraction and relationships formed by membership in that group (Lott & Lott, 1965). Meta-analyses have also found support for a third dimension: group pride (Beal et al., 2003). Group pride is "the degree to which group members exhibit liking for the status or the ideologies that the group supports or represents" (Beal et al., 2003, p. 995). Thus, the multidimensional view of cohesion has emerged as a more common conceptualization today, with cohesion consisting of task, social, and group-pride cohesion.

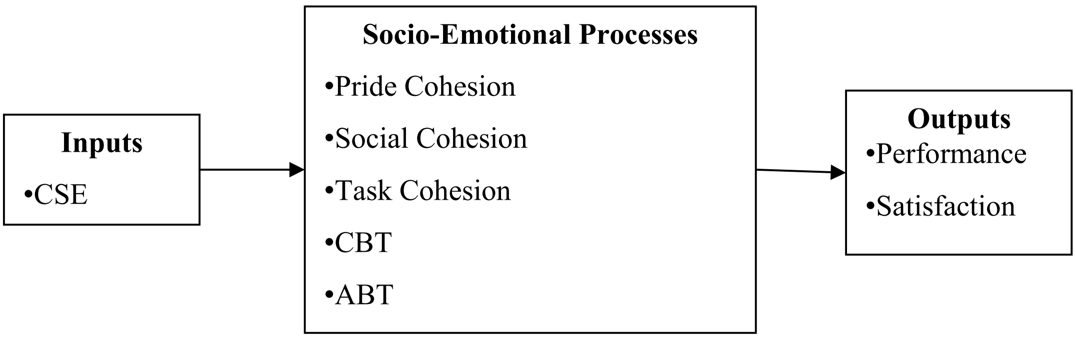
Given the importance of these socio-emotional processes, this study will examine the combined affects of these variables on virtual team performance. These variables will be measured in their multidimensional forms as they are influenced by CSE and subsequently influence team performance.

Hypothesis Development

This study accepts Baron and Kenny's (1986) four steps in establishing mediation where, in our particular case, CSE is the initial variable, performance is the outcome, and cohesion and trust are the mediators (see Figure 2). Thus, the first step to establish is that CSE leads to performance which has been previously examined in a number of studies (e.g. Brosnan, 1998). The second step to examine is the influence of CSE on trust and cohesion. While certain forms of efficacy such as group self-efficacy have been found to influence socio-emotional processes such as trust and cohesion (Lee & Farh, 2004) the relationship between CSE and socio-emotional processes has yet to be directly examined. However, CSE is rooted in social cognitive theory which suggests that an individual's behavior, environment, and cognitive factors are interrelated (Staples et al., 1999). As suggested by Powell et al., (2004) a virtual team environment includes the perceived abilities or efficacy of the team member's. If these members have high perceptions of efficacy related to computers and technology they will be more likely to interact and undertake the task at hand. This interaction will likely enhance cognitive factors such as socio-emotional processes within the team. Therefore members that are more confident in their abilities to work with computers (high CSE) will exert greater effort to interact with the other members to accomplish the task. This increased interaction should foster enhanced feelings of both cohesion and trust amongst members.

The third step is to examine the influence of trust and cohesion on team performance. Hansen, Morrow, and Batista (2002) investigated the impact of trust on cooperative membership retention, performance, and satisfaction. They found out that all types of trust (cognitive and affective) have a strong positive effect on team performance. Numerous studies have also provided evidence suggesting that cohesion is a strong predictor of team performance (e.g. Beal, et al., 2003; Ensley, Pearson, & Amason, 2002; Goodman, Ravlin, & Scminke, 1987; Lott &

Figure 2
The Mediating Influence of Socio-Emotional Process on the Relationship between CSE and Performance



Lott, 1965). Given the support of these previous findings are focus is to examine the fourth and final step: CSE leads to performance through the mediation of trust and cohesion.

Moreover, we are going to utilize the current conceptualization of both trust and cohesion as multidimensional constructs. Thus, our major contribution is that we will assess the influence CSE on multiple dimensions of trust and multiple dimensions of cohesion and how these relationships subsequently affect team performance. Specifically, our hypotheses state:

H1: CSE will lead to higher level of performance in virtual teams through the mediation of pride cohesion.

H2: CSE will lead to higher level of performance in virtual teams through the mediation of social cohesion.

H3: CSE will lead to higher level of performance in virtual teams through the mediation of task cohesion.

H4: CSE will lead to higher level of performance in virtual teams through the mediation of ABT.

H5: CSE will lead to higher level of performance in virtual teams through the mediation of CBT.

Methods

Sample and Procedures

The sample consisted of 121 students from a small university located in the southwestern part of the United States. The students were placed in a virtual team were each member was currently enrolled in a different Management class. There were 43 virtual teams with approximately four members per team. Each team was given the assignment to arrange items necessary for survival in order of importance based off a "ship-wreck" scenario.

Measures

All measures were assessed using a 5-item likert scale. The dependent variable team performance is derived from the mean of the variables team satisfaction developed by Gladstein (1984), perceived performance developed by Jehn, Northcraft, and Neale (1999) and a subjective measure of actual performance. The mediating variables social cohesion, and pride cohesion were measured by a scale developed by Bollen and Hoyle (1990). The measure for the mediating variable task cohesion was developed by Zaccaro and Lowe (1986). The remaining mediating variables ABT and CBT were developed by Kanawattanachai and Yoo (2005). Finally the measure for the predictor variable CSE was assessed using a scale that was developed by Krebs, Hobman, & Bordia (2006).

Hypothesis Testing and Results

Hypothesis 1 proposed the mediating influence of pride cohesion on the relationship between CSE and team performance. A regression analysis was first run using team performance as the criterion variable in combination with the predictor variable. Disappointingly, results demonstrated that CSE does not exert a statistically significant influence on team performance. This suggests that there essentially is no relationship to be meditated and therefore negates the need for further testing. However, given the exploratory nature of this study additional analyses were run to determine if pertinent relationships could be found.

The next regression analysis was run to examine any influence that CSE had on the mediating variable socio-emotional processes. Here again, when each of the separate socio-emotional processes were placed as the criterion variable and CSE was placed as the predictor variable, no statistical influence was observed. Therefore the final relationships to be assessed involved the hypothesized mediating variables and team performance. Five separate regression analysis were run using each of the mediating variables as the predictor variable and team performance as the criterion variable.

First as depicted in hypothesis 1, a regression equation was run using team performance as the criterion variable and pride cohesion as the predictor variable. The results from this initial analysis were statistically significant ($R^2 = .576$, $F = 157.50$, $p < .001$). In the next analysis the influence of the mediating variable social cohesion on team performance was examined. Here again the results were statistically significant ($R^2 = .288$, $F = 46.88$, $p < .001$). The influence of the final dimension of cohesion was then examined. The mediating variable task cohesion demonstrated statistically significant influence on team performance as well ($R^2 = .779$, $F = 408.97$, $p < .001$). Next the influence of the observed multiple dimensions of trust was examined. First, a regression analysis was run using team performance as the criterion variable in combination with the predictor variable ABT. Results demonstrate that ABT exerts a statistically significant influence on team performance ($R^2 = .150$, $F = 20.70$, $p < .001$). Lastly, as depicted in hypothesis 5, a regression analysis was run using team performance as the criterion variable in combination with the predictor variable CBT. Results demonstrate that CBT exerts a statistically significant influence on team performance ($R^2 = .563$, $F = 150.87$, $p < .001$).

Discussion And Conclusion

The intent of this study was to begin to clarify some of the influential factors associated with virtual team performance. Based on the model proposed by Powell et al., (2004) certain inputs, socio-emotional processes and outputs were chosen for examination. The inputs chosen were the individual member's perception of competence or efficacy associated with their computer performance or their CSE. The socio-emotional processes chosen were multiple dimensions of both trust and cohesion. Lastly, the outputs were both subjective and objective measures of virtual team performance. As proposed by Powell et al., (2004) it was hypothesized that the selected input CSE would influence the socio-emotional processes of trust and cohesion and subsequently influence virtual team performance. Disappointingly, CSE was found not to directly relate to either the proposed socio-emotional processes or virtual team performance. While initially surprising, further investigation suggested that both our sample and measure may provide the reason for these results.

First our measure was a general measure of computer self-efficacy. Items from the scale included questions such as "computers would increase my productivity" and "computers would help me organize my work". Since the survey was given to college students who are for the vast majority familiar and confident with computers, very little variance was noticed in the responses. Since there was no variance, the measure of CSE provided very little predictive power. Other studies have focused on more specialized measures of CSE and perhaps a measure more representative of efficacy associated with virtual teams would have provided more substantial results.

Regardless of the current findings there were some contributions from this study that could benefit future research on virtual teams. For instance, empirical support was found for a number of the theoretical assumptions underlying group processes and virtual teams. First and foremost is the necessity of social emotional processes to develop in virtual teams. Both trust and cohesion exerted a statistically significant influence on virtual team performance. Therefore, these processes do develop and are just as essential in virtual teams as in regular face-to-face teams. The strongest relationships were observed in the relationship between CBT and task cohesion on virtual team performance. These findings lend support to our adopted theory of swift trust in temporary virtual teams. These teams were formed temporarily to accomplish a specific task in which their group performance would be evaluated. Therefore, these team members were dependent on their fellow members to receive a satisfactory evaluation. Given the short duration of the team these members focused more on the cognitive elements and task aspects of cohesion just to get the job done.

As with any research there were some limitation with this study to include its cross-sectional nature, small sample, and questions of generalizability. However, this study has provided some insight into the understanding of the workings of virtual teams and future research should continue to focus on the influence of trust and cohesion on virtual teams to include differences based on the duration of these teams. Additionally, though the results of this paper did not support a relationship between CSE and virtual team performance more specific measures of CSE should be attempted. Granted, there is still much to be learned about how virtual teams develop and perform, given the importance of these teams, these relationships warrant further observation.

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Bringing Casinos to You: Economic and Social Lessons from Mississippi

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ABSTRACT

Introducing casinos to an area is a complicated process that has profound effects on the economic and social structure of the established region. Studying and examining the effects casinos have had on regions that have welcomed the industry can be educational and informative to areas considering permitting gaming activities, as it will better prepare the areas for the upcoming changes. This article reflects on the economic and social impacts casinos have had to the state of Mississippi and provides lessons for areas considering or recently legalizing gambling. Specifically, this article states the positive and negative effects the casino industry has had on Mississippi as a learning experience for other areas.

Introduction

Mississippi's first casino was introduced in 1992, and the state has steadily evolved economically and socially ever since. Throughout the history of legalized gambling in the state, many significant changes have been experienced. These changes provide insight into the reality of gaming from the state's perspective, which can benefit parties interested in the approval of the casino industry into their region as well estimated expectations and lessons that can be learned from Mississippi's experience in this specialized industry.

Economic Impact

Will casinos have a positive impact on an economy? There is no clear answer to this question, however an analysis of data related to casino operations in Mississippi will assist in examining this issue. Select variables from the established data provide indicators that can be used to assess the positive or negative economic impact casinos will have on a particular area. The variables from the Mississippi data examined in this article include employment, casino employee wages, gross revenue, number of patrons (visitors), number of casinos in operation, tax revenues, and other casino activities that have an economic impact.

Local Employment

Casinos require labor in order to function. This commonly leads to the belief that casino operations will increase the number of local people employed in an area resulting in a reduction of unemployment. This is true given the local labor supply possesses the skills required by the casinos. If the area does not, then employees will be transferred from other areas resulting in little or no reduction to the local unemployment rate. It is imperative that the local labor supply possess the necessary skills for successful operation of the casinos in order for the desired employment change to be achieved (Garrett, 2003).

Table 1 provides data for the number of people employed by casinos in Mississippi between 2000 and 2007. The data show that the number of employees decreased each year except in 2007. The amount of wages for casino employees remained for the most part unchanged except for years 2005 and 2006, which is when casinos located on the Mississippi Gulf Coast were closed due to hurricane Katrina. One explanation for this may be that the casinos streamlined their operations and thus were able to provide the same services with fewer employees. Another explanation could be that a larger number of employees may have been cross trained thus reducing the number of employees needed to provide the same services.

Table 1
Number of Employees, Amount of Wages, and Number of Casinos in Mississippi by Year

Year	Employees	Wages	# of Casinos
2000	34,209	$1B	30
2001	32,510	$1B	30
2002	31,343	$990.1M	29
2003	30,377	$1.088B	29
2004	28,932	$1.009B	29
2005	28,800	$804M	29
2006	26,010	$771.3M	27
2007	30,572	$950.45M	29

(Mississippi Gaming Commission and Mississippi Gaming Association as cited in American Gaming Association, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007)

An average of 30,344 people was employed by casinos in Mississippi in the years 2000-2007. One must not be deceived by employment data. On the surface this would be considered a positive for Mississippi's economic development. However, it is important to examine the overall impact on the state's employment. Were there 30,344 new jobs or did other sectors of the economy lose employees to the casinos? That is, what was the net number of new jobs? Just as important is the number of non-casino jobs created by the demand of non-casino goods and services. Employees of casinos will spend money on housing, clothing, food, etc. Increases in these areas will cause organizations to increase their number of employees thus leading to an increase in the state's employment rate (Garrett, 2003). These same principles apply to casino operations in other areas.

While the data show that casinos in Mississippi employ thousands of individuals each year, it is important to understand that the casino industry is not immune to the same economic conditions that impact other industries. The first casino in the state opened in 1992 and since that time fifteen have closed (Mississippi Gaming Commission, 2004, Directory of current operators). The closings can be attributed to increased intensity of competition, growing pressures on costs and profits, or poor management (Walker, Mullins, Boyd, & Larréché, 2006). It is important that areas introducing casinos avoid the following strategic traps that unsuccessful casinos in Mississippi fell in to as their casinos moved from market growth to maturity:

1. Failure to anticipate transition from growth to maturity

2. No clear competitive advantage as growth slowed

3. Assumption that an early advantage will insulate the firm from price or service competition

4. Sacrificing market share in favor of short-run profit (Walker et al., 2006).

Patrons/Gross Revenues

Mississippi has the third largest gaming market in the United States. Currently, 29 casinos operate in the state. Until recently, casinos were required to be located on water. However, following Hurricane Katrina, the state legislature approved land based casinos on the Mississippi

Gulf Coast to encourage continued investment by the casino industry. The total amount of casino space in Mississippi as of fiscal year 2008 was 1,381,299 square feet. As Table 2 shows, the total casino space in Mississippi on average has been 1,369,567 square feet from 2000 to 2008.

Table 2
Square Footage of Mississippi Casinos by Year

Year	Casino
2000	1,471,049
2001	1,473,294
2002	1,457,701
2003	1,432,697
2004	1,433,697
2005	1,454,836
2006	969,533
2007	1,251,994
2008	1,381,299

(Mississippi Gaming Commission, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, Public Information)

Casinos measure success using numerous variables, two of which are the number of patrons (visitors) and gross revenues. These variables provide casino officials with a comparison to other establishments, past years, and a basis for future goals. The patron and gross revenue data for Mississippi casinos for years 2000 to 2007 is provided in Table 3. The data show the number of patrons each year was fairly consistent from 2000 to 2004. There was a decrease in the number of patrons in the years 2005, 2006, and 2007, which can be attributed to the impact of Hurricane Katrina.

There are several additional explanations for the decreasing number of patrons visiting casinos in Mississippi. These include less disposable income in general for many patrons, overall economic conditions, and customer service issues. Of these, customer service is the one variable that casinos in all areas should address on an on-going basis. The key for success is to provide service that meets or exceeds customer expectations consistently.

The data in Table 3 show that gross revenue remained constant for each year, even those impacted by Katrina. This brings one to question why gross revenues remained constant even during the years with fewer patrons. One possible explanation may be that patrons who chose to visit decided to spend additional funds compensating for those that did not visit the casinos. Also, it is possible there was a shift in the type of patron that visited the casinos, meaning those who frequented the casinos were in higher income brackets. Perhaps the casinos' marketing efforts were more effective. Regardless, it is important that casinos learn as much as possible about their patrons in the areas of income, age, etc. so they can better provide appropriate services.

Table 3
Number of Mississippi Casino Patrons and Gross Revenues by Year

Year	Patrons	Gross Revenues
2000	56 M	$2.7 B
2001	56.8 M	$2.7 B
2002	54.8 M	$2.7 B
2003	54 M	$2.7 B
2004	55.26 M	$2.781 B
2005	44.45 M	$2.467 B
2006	35.65 M	$2.570 B
2007	36.96 M	$2.891 B

(Mississippi Gaming Commission and Mississippi Gaming Association as cited in American Gaming Association, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007)

Casino Tax Revenue

Table 4 provides general fund and local governments' tax revenue data for casinos in Mississippi for fiscal years 1993 – 2008.

Mississippi, like most states in the United States with legalized gambling establishments, taxes casino revenues to fund and support programs throughout the state. The data show that for the general fund, tax revenues increased each year except for two years, 1996 and 2006.

Tax revenues for local governments increased each year except for year 2006. Those who sup-

Table 4
Mississippi Casino Tax Revenues by Year

Year	General Fund	Local Governments
1993	$33,315,922	$11,095,706
1994	$95,033,771	$33,736,024
1995	$128,776,225	$60,513,226
1996	$110,415,641	$69,074,471
1997	$119,540,774	$75,858,651
1998	$126,872,535	$82,906,716
1999	$141,763,436	$94,015,825
2000	$158,354,244	$104,991,878
2001	$161,495,232	$106,864,321
2002	$164,721,939	$109,372,690
2003	$166,145,175	$109,508,420
2004	$167,323,270	$110,705,760
2005	$168,542,499	$111,489,811
2006	$147,710,573	$91,843,077
2007	$185,846,915	$110,438,573
2008	$194,040,324	$114,548,406

(State Tax Commission, 2008)

port casinos argue that casino tax revenues are beneficial to the state and local governments. Their position is that tax revenues can be used to support social and local programs (Garrett, 2003). On the surface the data certainly leads one to believe that Mississippi has millions of dollars to spend on social programs and that local governments have additional monies to support their communities. However, one must examine this theory closely to see if indeed it is true. Assume that Mississippi appropriates $10 million a year on a program to help people stop smoking. Additionally, the state earmarks $10 million of casino tax revenues for the program. One would expect the total spent on the smoking program to increase by $10 million. However, it is possible the government will reduce funding for the program by $10 million and use the money for other programs. The $10 million from casino revenues will be used to bring the total amount spent back to the pre-casino levels. Casino tax revenues can be used to improve social programs on the state and local level, but only if normal funding for such programs is continued (Garrett, 2003). Communities must keep these principles in mind as they relate to the use of casino tax revenue.

Non-Casino Activities

As noted, casinos have a significant economic impact on Mississippi. However, it is important to understand that casino operations are not closed systems. For example, all casinos in Mississippi have hotels included in their operations. Additionally, casino organizations invest in various activities in addition to gaming. As Table 5 shows, there are non-casino activities offered by casino organizations for all age groups. These organizations understand the importance of providing activities for everyone in order to draw patrons to the casinos. One can not gamble all the time. The additional activities will provide a break from gaming while at the same time adding to the economic impact to the community and to the bottom line of the organizations.

Table 5
Activities in Addition to Gaming
Offered by Mississippi Casinos

Restaurants	Retail Outlets
Marina	Convention Center
Showroom	Movie Theater
Fun Center/Arcades	Golf Courses
Hotels	RV Parks
Sporting Events	Charter Boats
Kids Quest	Entertainment Barge
Live Entertainment	Spa
Fishing	Tanning Beds
Travel Agency	Clay Shooting
Health Club	Pools
Blues Museum	Ballroom

(Mississippi Gaming Commission, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, Public Information)

Social Impact

The introduction of the casino industry to Mississippi has had an impact to the social structure of the state, specifically to the counties hosting the casinos. The influx of businesses to these areas has created a chain reaction to the population, quality of life, and challenges faced by the hosting counties. A large majority of the changes have positively affected the regions, although some negative effects have also been experienced. Areas seeking to welcome casinos are likely to experience similar impacts to the established social structure of the surrounding areas. Being prepared and aware of the changes will assist in easing the transition especially for the local residents.

One example of the dramatic changes that has been brought to Mississippi through the legalization of gambling is that of Tunica County in northwestern Mississippi. Prior to the casinos inhabiting this area, Tunica County "was at one time considered the poorest county in America" (Snyder, 1999, p. 2). The 1992 introduction of the casino industry to this struggling region has had profound impacts on the social aspects of Tunica County.

Residents of this county enjoy several amenities that were not available or affordable before welcoming the casinos to the area. Tunica County residents have recreation and aquatics centers available that are free for their use. An 18-hole golf course offers relaxation and entertainment, and the Tunica RiverPark offers visitors an opportunity to experience the Tunica Queen, a riverboat on the Mississippi River, explore the museum, and visit an ecopark. Other amenities offered are associated directly with the gambling establishments. The casino facilities offer theaters, restaurants, night clubs, and large outdoor areas that can host a variety of entertainment events.

With the revenue available through the taxes paid by the casinos, Tunica County has improved the aesthetics of the area, such as the roadside landscaping. The county also focused funds into improving the local schools, fire stations, law enforcement offices and other public structures. The new construction projects and sudden wealth of the area has attracted other businesses to the county and together with the casino establishments the unemployment rate for the county has significantly decreased. Increased interest in this area has led to other unexpected results. Farmland that was once thought to be of very little value has become highly sought after, causing property values to dramatically increase. Land owners that were once struggling to make ends meet experienced a windfall when their land was sold for astronomical prices. Another exciting result of the introduction of the casino industry to the county is the elimination of property taxes for all property owners.

Workforce

Additionally, the casinos bring to the region a more educated workforce through the relocation of industry professionals, training programs for the local residents, and the influx of members of the creative class. Industry professionals eager to move up the corporate ladder view the casinos located in Tunica County as an opportunity to showcase their skills and abilities. Highly educated and knowledgeable employees transfer to Mississippi where they contribute to their area of expertise in a fashion that allows the casinos to continue to impact the Mississippi economy and social structure. These specialized individuals share their knowledge with the local residents through training programs located at each of the casinos as well as specially created gaming schools, which focus on training dealers for each of the casinos games. Finally, members of the creative class are attracted to this region for its need of highly trained, educated, and dedicated individuals.

Richard Florida's creative class theory (2002) proposes that the largest group of social class is composed of members who are characterized by being educated and creative. The members of this group are usually skilled in specialized fields and use their creativity in those fields. Members of the creative class include a variety of professions including artists, lawyers, professors, and scientists, as they hold degrees in their specialized fields, have specific skills, and use their creativity in their fields.

Richard Florida (2003) proclaims, "The human capital theory establishes that creative people are the driving force in regional economic growth" (p. 7). Florida continues, "From that perspective, economic growth will occur in places that have highly educated people" (p. 7). Tunica County is an excellent representation of Florida's Creative Class theory as members of this group were not attracted to this area prior to the introduction of the casinos, hence prior to the introduction of a specialized industry that required the assistance of a highly educated, skilled, and creative workforce.

Community Involvement and Education

The casino industry also contributes to the local economy and social structure directly. They often sponsor local events, offer their facilities for the use of local charities, and encourage employee participation in charitable events that promote healthy lifestyles, giving back to the community, and environmental friendliness. Additionally, the employees of these establishments are encouraged to continue their formal education through GED programs, certifications, and seeking degrees through higher education.

Though building relationships and cooperating with local educational establishments, the casinos are able to bring many of the educational opportunities for their employees into their workplaces. Some educational opportunities, such as the Corporate Education Program offered through Delta State University, are presented online, allowing working professionals an opportunity to seek their bachelor's and master's degrees without the challenges of traditional college programs. Delta State University's Corporate Education Program is also unique in that it does not require the employee or the employer to fund the employee's education until the end of the semester, when grades have been submitted. This allows employers to pay for the courses employees completed based on the established requirements and criteria and allows the employees to pay the remaining balances at the end of the semester. Through the continued education of the Tunica County workforce, a sustainable and desirable pool of laborers in the region is being created and encouraging the employment of residents to meet local business needs.

Social Challenges

While most of the social impacts of the casino industry have been positive, the county has experienced some negative effects. The amount of crime reported in the area has increased. "The number of court cases filed in Tunica County, Mississippi, went from 689 in 1991, the year before casinos began operating there, to 11,100 in 1996" (Sullivan, 1997, A5).

The Mississippi Gaming Commission (2008) understands the need for overseeing the crime as it relates to the casino industry and as a result has five divisions whose responsibilities are to investigate, enforce, examine, and review all paperwork, money, and actions by guests and employees of all gaming establishments in the state. Table 6 lists the divisions and duties established by the Mississippi Gaming Commission.

Another concern of the area is the increase of problem gambling. In an effort to assist the state with those who experience a compulsion to gamble, the Mississippi Gaming Commission offers an opportunity for individuals to voluntarily remove themselves from all gambling properties through the self-exclusion process. This process allows people who believe they cannot control their addiction to gambling to no longer be welcome at any of the properties in the state. Those choosing this option are allowed to determine how much time they wish to be self-excluded from the casino facilities up to and including the remainder of their life. The area also advertises through billboards, brochures, flyers, and television a toll-free number that can assist those with problems of addiction to gambling. Those with gambling problems do have opportunities to seek help in Tunica County.

The social impacts resulting from the introduction of the casino industry to Mississippi in the areas of workforce, communities, education, and challenges faced are likely to be similar to the social impacts other areas will experience upon the arrival of casinos. The social changes will also be dependant upon the economic changes discussed earlier. For example, the tax structure established with the casino organizations will impact the available funds for structural changes to the area.

Table 6 Mississippi Gaming Commission Divisions and Duties that Focus on Casino Crimes	
MGC Division	**Division Duty Statement**
Criminal Investigation Division	Charged with the responsibility of gathering information pertinent to any gaming-related criminal or improper activities as defined by the Mississippi Gaming Control Act, MGC Regulations, the Charitable Gaming Laws, and all laws on the local, state and federal levels.
Enforcement Division	Responsible for the day-to-day regulation of the casinos to ensure that each property is conducting business in compliance with the Gaming Control Act and the rules and regulations set forth by the MGC.
Investigations Division	Charged with investigating all applications for license and other Commission approvals, and reporting all material facts to the Commission.
Legal Division	Staffed by the Office of the Attorney General; represents the Commission and the Executive Director in legal proceedings to which they are a party and advises them in all administrative matters.
Compliance Division	Charged with the responsibility of routinely examining and reviewing the financial and accounting records of gaming licensees
Corporate Securities Division	Investigates all new applicants for a gaming license. Additionally, all renewals of gaming licenses are reviewed and investigated.
(Mississippi Gaming Commission, 2008, Divisions)	

Mississippi's Lessons for Other Areas

Preparing for casinos is an excellent method for understanding the likely changes that will occur to the economy and social structure of an area, however first hand experience provides a priceless education that is irreplaceable. Mississippi has experienced a wide variety of changes in the past sixteen years. Those lessons can be translated for others seeking to learn as they embark on the adventures of casinos.

- Mississippi lacked an educated workforce, especially at the level of top management, which created cultural problems. To overcome this lack of knowledge the casinos relocated professionals from other properties, but this only deepened the culture gap.
- A change in the mindset of the Mississippi casinos has led to a focus on educating the local workforce and recognizing the true value of an educated workforce.
- Mississippi did not earmark the funds the state received from the casinos to regulate where the money would be used in order to better the state as a whole.
- While Mississippi does provide assistance for those with gambling addictions, it would be beneficial for those efforts to be increased in order to recognize and educate the population about addictions to gambling.
- Mississippi established assistance for those with gambling addictions, however additional facilities would be helpful, spe-

cifically in the cities/counties where these establishments are located.

- Casinos in Mississippi are not recognized as broadly as they should be in all the contributions they make and the positive actions they are responsible for. The areas where the casinos are located should make a stronger effort to promote these accomplishments.

- Prior to the introduction of the casinos in Mississippi, state officials conducted extensive research of the laws and industry regulations of other states and areas that had legalized gaming.

- Each county in Mississippi that boarders the Mississippi River or Mississippi Gulf Coast votes to approve gaming in that area. This allows the residents to have control over the introduction of gambling to the county.

- Following Hurricane Katrina, the Mississippi legislature changed the law that required all casinos in the state to be located on water. The casinos on the Gulf Coast are the only casinos now allowed to be land-based, although distance from the water is restricted. The government's willingness to adapt has encouraged cooperation with the casinos and has allowed for the continued investment in the state's economy.

- Casino guests often bring minors with them. Casinos that offer entertainment designed for minors and in a safe environment are preferred by these customers.

- The crime rate in areas with gaming establishments often increases as a result of the attraction of the new businesses. Areas that welcome the casinos should be prepared and proactive as they plan to address this issue.

- Casinos are a business, and the education of lawmakers and the public to this fact will assist in the introduction and approval of educational programs designed to better these establishments' employees.

- Mississippi's casinos are approaching the mature stage of the product life cycle. An area first welcoming casinos will experience an influx and exodus of gaming establishments.

- "Casinos absorb existing entertainment, restaurant and hotel business, and deplete dollars available to other retail businesses. That destroys other jobs in the trade area and eliminates their sales, employment and property tax contributions" (Price, 2005, ¶ 5). Knowing this ahead of time will allow regions introducing casinos to extend efforts to offset these likely effects.

These lessons can be applied to other areas, as they offer insight and understanding into the possible changes to be experienced. It is important that officials be flexible, open to change, and fully informed when negotiating and conducting business with casinos.

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Information Security Awareness in E-commerce Activities of B-to-C Travel Industry Companies

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ABSTRACT

This study examines the security web site disclosure policies of 100 companies engaged in online business using the B-to-C modality. The focus is on disclosure and not whether or not such policies are in place. The study is part of a six-year research project that has studied over 1000 e-commerce web sites across many industry groups and reported in the literature. In this paper, the authors examined the travel industry.

Introduction

Two topics that dominate the information systems field today are e-commerce and security. Each of these terms is its own field of interest unto itself but taken together form the nexus of a critical concern of all who labor in information technology. To be successful in online commerce, especially in a B to C environment, it is essential to earn the trust of the consumer. Exactly how to achieve this trust is a judgment call that must be made by each e-commerce organization. One way to improve consumer faith in an organization is to communicate in an unambiguous manner what security steps are being taken to protect the customer in this environment. This field study explores what security steps online e-commerce firms in the travel industry are taking in this regard. The difficulty with doing a study of this type is that ,as researchers, we can only use inferences based on what companies choose to disclose on their web sites. Absence of public disclosure does not mean lack of security, only a desire not to communicate it to the customers. Therefore, we visited web sites in the travel industry and assessed what their formal disclosure policies were with respect to security.

The organization of the paper is as follows: First the relevant web site security features are described along with a literature justification of them. Next we present the methodology employed followed by our results presented in tabular form. Finally, we summarize and discuss conclusions.

Relevant Web Site Security Features

Encryption

Encryption is the coding of plain text information into unreadable/unbreakable data that will eventually be deciphered at the other end. An organization can utilize encryption in two ways. It can focus its efforts on encrypting the transmitted message so that if it is intercepted it will not be understood. It can also utilize encryption to store customers' financial information and transactions. At the very least a firm should have a mechanism in place to encrypt its transmitted data (Snyder, 2005), (Chiampa, 2004). These transmission lines can be secured by using 128 bit encryption schemes like Secure Sockets Layer (SSL). SSL gives the customer the trust that he/she is communicating with the actual company's site and not an imposter site (Thibodeau, 2002). Digital certificates are used by companies. A digital certificate is issued by a trusted third-party and is usually made up of the following: "sender's name, sender's public key, expiration date of the public key, name of certificate authority, unique serial number and the digital signature of the issuer" (Mackey, 2003). "Verisign and Thawte are two of the major third-party verifiers in use today" (Solomon and Chapple, 2005). IBM, through a relationship with Identus, is offering digital certificates to banks (Martens, 2005). Worthen discusses an ROI approach that an organization can take regarding seals (Worthen, 2003).

Firewalls

A firewall is a function that is positioned at the front-end of a data communications network. Its purpose is to screen incoming transactions for improper activities. The firewall can be implemented in either the hardware, software or both. It can be thought of as a gatekeeper that keeps the organization's intranet secure from outsiders who have malicious intent. Firewalls can be combined with intrusion detection techniques and be implemented in a layered architecture. Firewalls are so commonplace today that many home and small business networks utilize their security capability. Ghosh points out, "firewalls are artificial barriers that no longer meet the needs of ubiquitous networks. That the distinction between inside and out is quickly fading" (Ghosh, 2001).

Logging, Auditing and Monitoring

Since firewalls are meant to block out malicious activity and improper transactions in an organization's network, it is imperative that there be procedures in place to be able to audit transaction activity on a periodic basis. "Recently adopted (US) federal rules require companies to employ strict safeguards and conduct routine security audits" (McWilliams, 2005). E-commerce companies should log all transactions in a network application noting time, place, authorization and nature of all transactions. These logs can also be employed in recovery operations as well as in traditional bank application audits. "The audit information records the information as it occurs. Auditing tools allow the administrator to find out who broke in and how, and help track down the culprit. The audit logs are often used in the prosecution of the culprit" (Pipkin, 2000). Companies can also have system software in place that monitors all activity going on in the network. This software operates in the background and provides an additional layer of security protection to an organization.

Pixel Tags

Pixel tags are called by a variety of names. Other names are as follows: web bugs, web beacons , clear GIFs, invisible GIFs and "1 by 1" GIFs. According to the Prudential Corporation web-site disclosure section, a pixel tag "is an invisible tag placed on certain pages of our web-site but not on your computer. When you access these pages, pixel tags generate a generic notice of that visit. They usually work in conjunction with cookies, registering when a particular computer visits a particular page. If you turn off cookies the pixel tag will simply detect an anonymous website visit" (Prudential, 2007). Current concern is when these pixel tags are embedded in e-mail correspondence. Recent correspondence on the Electronic Frontier web-site raises some very important questions on the privacy ramifications of using pixel tags on web-sites. "Clearly Web-site privacy policies need to disclose the use of Web Bugs as a minimum. Also the general practice of online profiling by third-party ad networks should be talked about in privacy policies. However, this important topic is rarely mentioned" (Smith, 1999).

Cookies

A cookie is a small piece of information that a website can send to your browser and may then be stored on your computer's hard drive. It acts as an anonymous tag that identifies your computer, but not you personally.

Cookies have the ability to store information about web pages viewed and the advertisements viewed or clicked. For registered customers, cookies can also save user information and screen preferences (Prudential, 2007). Companies would argue that the use of cookies contributes to better customer service in that the organization can learn from a customer's navigation patterns as they use a particular web-site. Once this information is analyzed, the firm can redesign its web-site to facilitate the customer's experiences on the organization's web-site. A legitimate question to pose is that "Is this a true win-win situation or does it simply enhance the company's marketing efficiency and effectiveness?"

Glossary of Terms

The proliferation of jargon surrounding the area of security has created a true dilemma for designers of web pages for companies. On the one hand, a company wants to provide a designed level of security for its customers so that its objectives are achieved. Total security might not be either economically feasible or desirable from a customer friendly point of view. Yet, there is a very real desire on the part of some knowledgeable customers to know what security policies are being used by the organization that is the caretaker of their finances (Wood, et. al., 2004). By simply listing security policies in place, an e-commerce site risks overwhelming a part of the customer base that is confused by the jargon. For this reason, firms have begun to include both a glossary of security terms as well as "hot links" to additional web sites that further discuss some of the security practices.

Identity Theft

If e-commerce by institutions is to ever achieve its lofty predictions for success, it must find a way to earn the trust of the consumer regarding the potential for identity theft. Consumers want to believe that their transactions are safe in transmission and that once the data is resident on the organization's system their personal data will not be compromised. The literature is replete with harrowing stories of people that had their identity stolen and had a very difficult time returning to normalcy (Roth and Mehta, 2005). "Pharming and evil twins aren't yet widespread and certainly haven't become the huge problems phishing and spyware are. But they are insidious because they are harder to detect" (Delaney, 2005). For example, companies are increasingly making explicit statements on their web pages regarding the steps that they are taking to protect against identity theft. David Myron, editor-in-chief of Customer Relationship Management, in referencing online banking applications asserts that "identity theft victims' assurance of security reflects comfort levels with online banking, and not their loyalty to a particular bank" (Myron, 2005).

Timeout Feature

It is common practice to protect against a customer transaction that might not have been terminated properly. This might occur if a customer walks away from a transaction activity without "signing off" or if they take too long to process a transaction. The default condition by the company's application system is to assume that there is a problem and to end the transaction session. It is a trade-off between irritating a customer (in the case of a long pause in the activity) versus protecting the network from a stranger encountering an "open" session left by the previous customer. The fear is that the stranger will attempt to "piggyback" into the company's system. Each organization sets its own timeout protocol based on the factors just discussed. Often 10 minutes is a typical timeout limit set by many organizations.

Statement on Useful Security Hints

Several enlightened companies have recognized that it is in their best interest to have an educated consumer so they take extra effort in providing recommendations on how their customers might improve overall security. Suggestions on password selection, handling of transactions and reporting potential compromises are but a few of these. The obvious trade-off is that some consumers might become unduly alarmed at a multi-page discourse on security procedures. This is not an easy choice to make for any organization concerned about security.

Methodology

This research is part of a continuing study conducted by the authors over a period of six years on web site security and privacy policies of companies engaged in e-commerce activities. During the ongoing study, over one thousand web sites were visited and reviewed.

In the summer of 2008, one hundred web sites engaged in the travel industry were reviewed via a questionnaire and the results were tabulated and analyzed.. Care was taken to select only the major organizations in each sub-group. The sub-groups consisted of airlines (40 companies), hotel chains (20 companies), car rental sites (20 companies) and travel agencies (20 companies).(Turban,et al.,2008) One of the authors was responsible for completing the data collection phase of the study. The focus was on which security policies were explicitly mentioned and/or discussed on the sites. All of the one hundred web sites supported the e-commerce initiatives of the representative organizations.

Results

Tables 1 through 13 reports the aggregate results for each of the 12 security features discussed earlier in the paper as well as one table on the ease of understanding of the web site policies in general.

Table 1 illustrates that 68% of the companies included a statement on cookies on their web sites. The strongest sector in this regard came from the airline and travel agency groups.

TABLE 1
Is there a Statement on Cookies?

Statement on Cookies?	Number	Percentage
Yes	68	68%
No	32	32%

Table 2 depicts that almost 80% of the companies made no mention of the use of firewalls on their web sites. The travel agency group had the highest percentage of site reporting the existence of a firewall at 50%.

TABLE 2
Is There a Statement on Firewalls in Network Security?

Firewall Statement?	Number	Percentage
Yes	21	21%
No	79	79%

Table 3 demonstrates that more than 80% of the web sites do not mention the use of pixel tags on their web sites. Once again, the travel agency group had the highest percentage of the use of pixel tags at 30%.

TABLE 3
Is there a Statement on Pixel Tags?

Pixel Tags?	Number	Percentage
Yes	18	18%
No	82	82%

Table 4 shows that almost two thirds of the web sites do not have a stated effective date for their security policies. The airlines group had the best disclosure policy in this area.

TABLE 4
Is There An Effective Date Stated on the Web Site?

Effective Date of Policy	Number	Percentage
Yes	34	34%
No	66	66%

Tables 5 and 6 can be taken together. They illustrate the degree that encryption policies are reported on the web sites. In Table 5, more than half of the companies reported the use of encryption in the transmission of customer data and the reverse was true for the use of encryption of data for storage of customer data. In the latter, the percentage was almost 90%. The travel agency group had the most open disclosure policy with respect to encryption in storage at 35%.

TABLE 5
Policy Statement on Encryption of Data During Transmission

Transmission Encryption of Data?	Number	Percentage
Yes	55	55%
No	45	45%

TABLE 6
Policy Statement on Encryption of Data During Storage

Storage Encryption of Data?	Number	Percentage
Yes	12	12
No	88	88%

Table 7 clearly shows that over 90% of the companies reviewed did not discuss their policies on either logging or monitoring. Interestingly, travel agencies once again had the highest percentage of disclosure at 25%.

TABLE 7
Is There a Statement on Logging, Auditing or Monitoring?

Logging, Auditing, Monitoring?	Number	Percentage
Yes	11	11%
No	89	89%

Table 8 illustrates a clear reluctance on the part of companies to include an explanatory glossary of terms as part of their web sites. Over 90% of the sites did not have one with the travel agency group being the highest percentage at 25 %.

TABLE 8
Is There a Glossary of Terms on the Web Site?

Is There a Glossary of Terms?	Number	Percentage
Yes	7	7%
No	93	93%

Table 9 depicts the lack of the presence of useful security hints as part of the security section of the companies' web sites. 80% of the sites did not include a statement. Car rental companies were the most informative group with 40% of the companies including a statement on their sites.

TABLE 9
Is There a Statement on Useful Security Tips on the Web Site?

Statement on Security Tips?	Number	Percentage
Yes	20	20%
No	80	80%

Table 10 illustrates the presence of a stated timeout feature being employed on the web sites 99% of the companies did not have any statement about a timeout feature on their web sites of this very important capability.

TABLE 10
Is There a Timeout Feature Stated on the Web Site?

Is There a Timeout Feature?	Number	Percentage
Yes	1	1%
No	1	99%

Table 11 shows that 50% of the included web sites had a security statement that was considered easy to read and understand. The most consistent industry group in this regard was the travel agencies that scored 85% in the ease of reading and understanding the security policy.

TABLE 11
Is the Bank's Security Policy Statement Easy to Read and Understand?

Easy to Read & Understand?	Number	Percentage
Yes	50	50%
No	50	50%

Table 12 illustrates the results of web sites that have an explicit statement on the existence of a secure order process. It was an even split between those organizations that do (49%) and those that do not (51%), The travel agency group did very well in this area with 80% of the web sites having this statement.

TABLE 12 Discuss a Secure Order Process?		
Secure Order Process?	Number	Percentage
Yes	49	49%
No	51	51%

Table 13 reports that 90% of the companies do not have an explicit statement on identity theft included as an integral part of their web site security policies. Car rental companies and the travel agency group both had 25% of their web sites having an explicit discussion of identity theft. Some Internet shopping vendors make a concerted effort to include an online tutorial on how to protect yourself from becoming a victim of identity theft. Unfortunately, these firms are in the minority.

TABLE 13 Is There a Statement on Identity Theft?		
Statement on Identity Theft?	Number	Percentage
Yes	10	10%
No	90	90%

Summary and Conclusions

This field study of over one hundred companies focused on the nature and extent of how explicit web site security policies are for organizations in the travel industry and were also engaged in e-commerce activities. Securing the consumer's trust is essential in order to have a successful e-commerce business component of overall revenue generation. Companies will differ in the existence and extent of articulating their security policies on their web sites.

The results from the major companies in each industry component that was reviewed (airlines, hotels, car rental companies and travel agencies) indicate a marked propensity not to be very open and descriptive of what types of security policies were in place on their web sites to support e-commerce activities. One might justifiably hypothesize as to why this is the case?

On the one hand, organizations do not want to unduly alarm their customers to the hazards inherent in online commerce. The key word is "unduly". This concern could occur if a web site had extensive information on the dangers of doing business transactions online. Perhaps, these firms assume that the existence of a third-party security seal on the homepage of the web site is sufficient for achieving the trust of the consumer. However, there is the counter-argument that a consumer has a right to more detailed security information of the policies in place for any given organization. This approach can be used to build consumer trust that a company is concerned about a high level of security for e-commerce transactions.

In general, this study confirms earlier results by Moscato that there does not seem to be a concern to disclose what security policies are in place on the web sites. Even with the widespread publicity of identity theft incidences exposing millions of consumers' private information, organizations choose not to disclose security policies in place. One might posit that as consumers become more aware of the risks companies will have to take a more proactive approach to disclosure. It should be noted that this study only analyzed what the disclosure policies were and that should not be construed in any way, that these companies do not have these security features in place. Only that they choose not to disclose them to the consumer.

The literature is replete with research on the need for consumers to feel a sense of overall security and trust when they engage in e-commerce. However, from the evidence of this field study, it does not appear that vendors are doing enough to gain consumer confidence by disclosing security policies on their web sites.

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Research on Audit Committee Effectiveness: The Need for Theory Development

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ABSTRACT

Audit committees have been the subject of empirical research and other business publications for decades (Donaldson, 1995, Wolnizer, 1995). This body of research is vast and has established several methodologies to investigate the effectiveness of the audit committee. However, subsequent to the highly publicized corporate failure of companies such as Enron and Worldcom, additional regulation was enacted by the U.S. Congress, in the form of the Sarbanes Oxley Act (SOX) (2002), and by all major U.S. stock exchanges. Much of this regulation targets the composition of the audit committee and the qualifications of its members.

This paper reviews the audit committee literature that has been published since SOX. The purpose of the review is twofold. The first is to discuss new directions in research since 2002. The second and more important purpose is that this paper will organize the review based on two different research approaches, often identified as theory-testing research and theory-building research. This review will support the call for new areas of audit committee research. Finally, the paper will conclude by looking forward to additional pending changes in the financial reporting environment, e.g., IFRS convergence, and it will discuss research opportunities that will become increasingly important as that time approaches.

Audit committees have been the subject of empirical research and other business publications for decades (Donaldson, 1995, Wolnizer, 1995). This body of research is vast and has established several methodologies to investigate the effectiveness of the audit committee. However, subsequent to the highly publicized corporate failure of companies such as Enron and Worldcom, additional regulation was enacted by the U.S. Congress, in the form of the *Sarbanes Oxley Act* (SOX) (2002), and by all major U.S. stock exchanges. Much of this regulation targets the composition of the audit committee and the qualifications of its members.

The scandals and subsequent regulation raise many questions about the effectiveness of an audit committee. For example, since the characteristics of audit committee members (e.g., independence and expertise) have been specifically targeted by these regulations, it is worth asking what characteristics of audit committee members predict an effective committee. Audit committee research conducted prior to SOX or conducted using pre-SOX data may give insights into the answers to this question, but due to the changes in the regulatory environment this research really cannot provide complete answers.

Other questions involve the relationships between the board of directors, audit committee and the external auditors, and the changes in those relationships since the passage of SOX. In the past, audit committee research has relied predominantly on archival data. However, these last two questions may require audit committee researchers to develop new theories and hypotheses, and to consider exploratory research using interviews and surveys. This paper suggests that with the passage of SOX, researchers may want to engage in new theory development. SOX is the most radical change to the Securities Act and business is now operating in a new environment.

This paper reviews the audit committee literature that has been published since SOX. The purpose of the review is twofold. The first is to discuss new directions in research since 2002. The second and more important purpose is that this paper will organize the review based on two different research approaches, often identified as theory-testing research and theory-building research. This review will support the call for new areas of audit committee research. Finally, the paper will conclude by looking forward to additional pending changes in the financial reporting environment, e.g., IFRS convergence, and it will discuss research opportunities that will become increasingly important as that time approaches.

Background

The audit committee is the one component of corporate governance most directly related to the quality of the corporation's financial reporting. Jenfang, Duh and Shiue (2008) demonstrated the value of audit committees when they found that the earnings-return ratios of foreign firms that do not have audit committees do not compare favorably to U.S. companies. Wolnizer (1995) argued that the audit committee alone could not meet the goal of quality financial reporting, citing lack of independence between the auditors and the audit committee. The critical question implied is, will the board or the audit committee act when an accounting or auditing problem occurs? Donaldson (1995) suggested that the question of the board or audit committee action in the face of irregularities is in the heart of all investors. He concludes his detailed discussion by pointing out that after extended periods of sustained positive operations even the most disciplined board can "fall asleep at the controls" (1995, 106).

Boards and their audit committees are "like fire departments: they aren't needed every day, but they have to perform effectively when they are called upon" (Conger et.al. 1998, p. 148). By implementing a disciplined approach to corporate governance that focuses on the culture of the organization, companies can move away from a box-checking mentality to which highly regulated entities may succumb (Bostrom, 2004).

It is ultimately management, not the audit committee, who are responsible for the quality of the financial statements (Bostrom, 2004). Management entrenchment can interfere with the audit committee's ability to effectively fulfill its monitoring role. Existing literature indicates that levels of management ownership of a company between 24 and 50% may negate many of the governance mechanisms in recent legislative and stock exchange regulations (Pergola, 2005). However, companies such as Tyco and Enron had boards and audit committees that met the current regulatory requirements but were unable to control or influence management in a manner that was in the best interest of the shareholders.

An effective audit committee has been defined as one that, "has qualified members with the authority and resources to protect stakeholder interests by ensuring reliable financial reporting, internal controls, and risk management through diligent oversight efforts." The four determinants of the committee's effectiveness are composition, authority, resources and diligence (DeZoort et al 2002a). This paper will use this same framework to organize its discussion of research on audit committee effectiveness published since SOX. That research is summarized in Tables 1 and 2 at the end of this paper.

There was a series of financial reporting scandals involving such companies as Enron and Worldcom in 2001 and 2002. Regulatory responses to these events included the Sarbanes-Oxley Act (2002) and new regulations issued by the SEC. This new regulatory environment has significantly modified the composition and operations of audit committees, and the qualifications audit committee members. This new body of regulations has also markedly changed the landscape within which audit committee research is being conducted.

Theory-Testing

Summary of Research Approaches

Much of existing research on audit committee effectiveness has been of the type normally identified as "theory-testing." The purpose of theory-testing research is, as the name implies, to gather data that examines whether or not predictions based on existing theory correspond to observed outcomes, with the goal of either confirming the validity of that existing theory or demonstrating the need to modify and improve that theory.

Much of the previous research has following one of three theoretical approaches. The first could be characterized as "Good results/Bad results." The premise is that a company whose audit committee is functioning effectively will not engage in financial reporting practices that result it "low-quality" financial statements. Researchers using the approach have selected a wide variety of variables as proxies for low-quality reporting, including discretionary accruals, small earnings increases and loss avoidance, earnings management, fraud, accusations of fraud, and financial restatements. Other researchers looked instead for indicators of a higher-quality audit, as a proxy for higher-quality reporting, and they inferred audit committee effectiveness when these were present. The second theoretical approach is looked at firm value, based on the assumption and a more effective audit committee will increase firm value. And the third approach focused on evidence of perceived risk, e.g., the company's bond rating, as an indicator of audit committee effectiveness.

Summary of Recent Research Results

Composition

The first of the four determinants of audit committee effectiveness was composition, which refers primarily to the characteristics of the members of the board and of the audit committee. Composition includes such variables as independence and expertise, both of which were, and continue to be, important research topics.

Independence. Effective in 2003, the New York Stock Exchange and the NASDAQ required a majority of the members of the board of directors to be independent, and they also required the audit committee to have at least three independent members. Once these regulations took effect it was no longer possible to obtain data samples of US firms with and without independent audit committees, and US-based research on this topic effectively ceased. The only US papers published since that time has relied on pre-SOX data samples. The results of that research, however, continues to affirm earlier findings that audit committee independence is associated with improved financial reporting outcomes. Audit committee independence was found to be positively related to audit fee (Abbott et. al. 2003a) and negatively associated with non-audit service (NAS) fee (Abbott et. al. 2003b), both of which were considered proxies for audit quality. Additionally, Abbott et. al. (2004) showed that independence was negatively associated with fraud. Carcello and Neal (2000) found that the proportion of affiliated directors was positively associated with failure to disclose financial distress in the Management Discussion and Analysis. Uzun et. al. (2004) reported that independence was negatively related both to fraud and also to accusations of fraud. Vafeas (2005) found that small earnings increases and loss avoidance were both negatively associated with independence. Most recently, Chan and Li (2008) reported enhanced firm value among Fortune 200 firms with expert independent directors on the board of directors and on the audit committee.

However, the results have not been entirely consistent in supporting the positive effects of independence. Agrawal and Chadha (2005) did not find any association between financial misstatement and independence, and Bushman (2004) did not find significant variation in earnings between firms whose committees were made up primarily of independent or primarily dependent members.

Overseas, where there are no regulations regarding board or audit committee independence, researchers continue this stream of research using more current data. Once again, the results strongly support the assertion that independence is associated with positive financial reporting outcomes. Audit committee independence was shown to be negatively related to earnings management among firms in the UK (Peasnell et.al. 2005) and in Australia, (Benkel et.al. 2006). Also in Australia, audit committee independence was found to be positively related to the use of an industry-specialist audit firm, a proxy for a higher audit quality (Chen et.al., 2005). However independence it was not found to be related to increased firm value (Cotter and Silvester, 2003).

Expertise. The listing requirements adopted by New York Stock Exchange and the NASDAQ in 2003 require that all of the members of the audit committee must be financially literate and at least one member must be financially sophisticated. Beginning in 2004, SOX imposed the additional requirement that companies must identify at least one audit committee financial expert (ACFE) or explain why they do not have one. According to SOX, an ACFE is someone who has,

"...through education and experience as a public accountant or auditor or a principal financial officer, comptroller, or principal accounting officer of an issuer, or from a position involving the performance of similar functions—1) an understanding of generally accepted accounting principles and financial statements, 2) experience in the preparation or auditing of financial statements...,3) experience with internal controls; and 4) an understanding of audit committee functions," (Sarbanes Oxley, 2002, Sec. 407).

This definition is substantially more demanding than the definitions of either "financially literate" or "financially sophisticated" contained in the NYSE and NASDAQ listing requirements prior to SOX.

Audit committee expertise has been a rapidly-growing research area since the passage of SOX. Coates et. al. (2007) developed an "expert-literate" score that quantified the composition of audit committees in terms of the financial expertise possessed the committee members. They reported that companies whose expert-literate scores improved over the period 1996 to 2005 (pre-SOX to post-SOX) experienced significant abnormal excess returns. Agrawal and Chada (2005) looked at the SOX requirement for an ACFE and found that the presence of an ACFE was associated with a lower incidence of financial statement restatements. However, Anderson et.al. (2003) found that, while debt cost was negatively related to audit committee independence, there was no relationship between debt cost and the presence of an ACFE.

The SOX definition of ACFE contains several different varieties of expertise that can qualify an individual to be the ACFE. There has been much discussion regarding the relative merits of each of these types of expertise for improving financial reporting, and there has been a significant amount of research conducted, but much of it is still in working paper form. To date, very little has been published on this question and, interestingly, most recent research (published and unpublished) relating to the ACFE has used data for periods preceding the implementation of SOX. Qin (2007) reported that firms with an accounting-literate financial professional serving on the audit committee were more likely to report higher-quality earnings than firms without one. However, the presence of an ACFE under the broad SEC definition showed no relationship to earnings quality. Krishnan and Visvanathan (2009) used the audit risk model (Audit Risk = Inherent Risk x Control Risk x Detection Risk) to propose than an effective audit committee could reduce audit fees by taking actions that reduce audit risk by minimizing control risk. They showed that, in the presence of a strong corporate governance structure, the presence of an ACFE with accounting expertise did reduce audit fees, while ACFE's with other types of expertise did not. However, in the absence of a strong corporate governance structure the ACFE with accounting expertise did not have any effect on audit fees.

The number of unpublished working papers on the effectiveness of an ACFE demonstrates the growing interest in this topic among researchers. Here are a few examples. Dhaliwal et.al. (2006) reported that an audit committee accounting expertise was positively associated with accruals quality, and the presence of strong corporate governance practices (e.g., audit committee independence) increases the strength of the relationship between accounting expertise and accruals quality. By contrast, they found no relationship between accruals quality and financial or supervisory expertise. Carcello, et al. (2006) confirmed that an ACFE with accounting expertise was negatively related to earnings management. However, when they partitioned the non-accounting financial experts into two groups, senior executives and other non-accounting financial experts, they found senior executives to be unrelated to earnings management, and other non-accounting experts were positively related to earnings management. However, after controlling for other corporate governance practices (e.g., audit committee independence), they determined that an ACFE did not provide any incremental reduction in earnings management. Their conclusion was that good governance practices and the presence of an ACFE would each be sufficient to improve the quality of financial reporting. Krishnan and Visvanathan (2007) found that accounting expertise was the only type of financial expertise associated with conservative financial reporting (their proxy for higher-quality earnings), but that result was conditional upon good corporate governance practices. In the absence of those practices, accounting expertise alone was not shown to be effective in promoting accounting conservatism.

Two generalities are starting to emerge from the ACFE research. First, studies tend to classify the experience of the ACFE as one of three types: accounting, finance or senior management, and other based on the experience of the committee member. Second, studies have shown that other corporate governance mechanisms work together with expertise.

In a laboratory experiment, expert financial statement users (financial analysts) were found to be much less willing to trust financial reports if the source of the ACFE's expertise was internal (e.g. as a member of corporate management) rather than external (e.g. as an auditor) (Dickins, Hillison and Platau 2009). Users' confidence increased when the ACFE had accounting-based expertise rather than supervisory-based expertise. The categorization scheme used in this research was derived empirically from a factor analysis of the results and does not align with the SEC's categories for the ACFE, a finding that questions not only the SEC's categorization of types of expertise but also the categorization used in most research studies.

Farber (2005) looked at the relationships between a large number of variables related to the audit committee (expertise, independence and frequency of meeting) and the incidence of fraud. Reduced levels of expertise, independence and frequency of meeting were all positively associated with fraud. Farber also examined the firm's ability to restore investor confidence by correcting these problems. Positive changes were associated with positive abnormal market returns, though analyst following and institutional investment were not restored.

DeZoort and Salterio (2001) performed an experiment on audit committee support for the external auditor in an auditor-managment dispute. They reported that experience as independent director and auditing knowledge were both positively related to support for auditor, concurrent experience on the board and in management was negatively related to support for the external auditor, and financial reporting knowledge was unrelated to support for the external auditor. They concluded that audit knowledge is very different than financial knowledge, literacy or expertise, and a lack of audit knowledge may still impair audit committee effectiveness.

Audit Committee Authority

The authority of the audit committee derives from the powers delegated to it by the board of directors. New regulations have greatly expanded the responsibilities of the audit committee, and they have also made the delegation of authority from the full board to the audit committee more formal and more public. Under current NYSE and NASDAQ listing requirements, the board must give the audit committee a charter that specifies the audit committee's duties, and that charter must be published in the proxy statement. However, Keinath and Walo (2008) studied published audit committee charters and found that they frequently failed to cite all of the responsibilities required of the audit committee by current regulations.

Audit Committee Diligence

Raghunandan and Dasaratha (2007) investigated the association between specific firm characteristics and meeting frequency, a proxy for diligence. Larger firms, shareholders with large blocks of shares and litigious industries were all positively associated with frequency of meetings. Abbott et.al. (2003a) reported that audit committees comprised solely of independent directors and meeting at least 4 times per year are significantly and negatively associated with the NAS fee ratio, a proxy for audit quality.

Srinivasan (2005) examined diligence at the individual level rather than looking at the actions of the entire board. They found that severe market costs were imposed on board members who lost board positions, including loss of reputation, inability to obtain seats on other boards, and a resulting decrease in income. These findings imply that market pressures provide strong incentives for board members to perform their duties diligently, and they apply to all board members including, by implication, members of the audit committee.

Audit Committee Resources

There have been no new studies of the audit committee resources since 2002. SOX placed additional responsibilities on the audit committee and essentially mandated that companies provide the resources necessary for the audit committee to meet the responsibilities set out by Congress. Few of the recent studies that investigate the composition, diligence or authority address the key issue in audit committee effectiveness: high quality financial reporting.

Discussion–Theory Testing

The results tend to support some of the regulatory mandates of SOX, specifically the requirement that a majority of the audit committee members be independent. However, there is far less clear support for the ACFE requirement as it has been implemented. There seems to be growing research indicating that not all of the types of expertise allowed by the SEC to qualify as the ACFE are equally effective in promoting quality financial reporting. Furthermore, there is mounting evidence that the effectiveness of the ACFE is greatly reduced, if not completely eliminated, in the absence of a strong overall corporate governance structure.

Some of these studies also point to a need for additional theory upon which to build theory-testing research such as the papers discussed above. Although some of the research is built on sound theoretical foundations, other studies appear to have been constructed less rigorously, with the result that some of the results are bewildering. For example, Abbott et. al. (2003a) posited that a higher audit fee indicated a higher-quality audit. Consequently, they interpreted a positive association between certain audit committee characteristics and audit fees as indicating greater effectiveness. By contrast, Krishnan and Visnanathan (2009) proposed that an effective audit committee should be able to reduce audit fees by minimizing components of audit risk, so they interpreted a negative association between some of those same characteristics and audit fees as indicating effectiveness. Clearly, both cannot be correct.

The need for additional theory-building research to develop adequate theoretical underpinnings for future theory-testing research is discussed in the next section of the paper.

Theory-Building Studies on Audit Committee Effectiveness

A second general type of research, often characterized as "theory-building," begins by gathering data that describes current practice. The purpose is to document are key practices and to provide a basis for developing explanatory theories that can be used as a basis for generating testable hypotheses for future study (Carlile and Christensen, 2005). Theory-building research has not previously been discussed and summarized separately from theory-testing research, but there have been a number of papers of this type that have provided insights into audit committee effectiveness.

Much theory-building research relies either on surveys or on interviews as a means of observing behavior. For example, Cohen et. al. (2002) surveyed auditors from Big 4 firms and found that auditors have not historically relied on audit committees to resolve disputes with the board because of a perceived lack of authority of the audit committee. Ng and Han (2003) surveyed audit partners of Big 4 accounting firms, and they also identified the existence of accounting guidance as an important factor that affected the negotiations between audit committee members, auditors and management. DeZoort et. al. (2002b) surveyed 300 audit committee members from small firms and found that the committee members had minimal familiarity with the materiality provisions of SAB No. 99 (SEC, 1999). Furthermore, committee members reported that external auditors discussed materiality with the audit committee only about 62 percent of the time, with the frequency being inversely related to the size of the firm.

These findings suggest a need for a better understanding of the interactions between the audit committee and the external auditor, as well as the roles that experience, types of knowledge, and the existence of explicit external accounting standards play in audit committee support for external auditors. That last factor, the existence of explicit standards, may become increasingly important as the U.S. moves towards IFRS convergence and a financial reporting environment that is bounded more by professional judgment and less by explicit standards.

The new requirement that companies publish the audit committee charter has allowed researchers to examine new aspects of audit committee diligence. HassanElnaby et.al. (2007) surveyed audit committee members and found that many were not able to recognize all of the committee's responsibilities. Their surveys also determined that audit committees regularly failed to fulfill all of those assigned responsibilities. Keinath and Walo (2008) confirmed that audit committee members were often not aware of all of the responsibilities listed in their charters, and (as noted earlier) they also found that the charters frequently failed to cite all of the responsibilities required by current regulations. Findings like these suggest a need to explore whether individual committee members' awareness of the audit committee's reponsibilities and/or the committee's performance of those duties might be related to measures of financial reporting quality, such as discretionary accruals or the incidence of fraud.

It has been virtually impossible to examine directly the operations of audit committees because confidentiality concerns prevent researchers from attending audit committee meetings and publishing what they observe (Spira 1998). Gendron et. al. (2004) were able to conduct a field study with audit committee members of three different Canadian firms in which they studied key matters that audit committee members emphasize during commttee meetings. The audit committee is an ill-structured organization and examining the actual operation of the committee requires researchers to consider inter-related factors and group dynamics (Peecher, 2002). Additional research like Gendron et. al. may increase understanding of some of those factors and provide a basis for developing testable theories about how an effective audit committee operates.

Questions also continue regarding relative usefulness of each of the various types of expertise that SOX allows the ACFE to possess. McDaniel et.al. (2002) conducted an experiment using audit managers as proxies for financial experts and executive MBAs as proxies for financial literates. The results suggested that these two groups bring very different frames of reference to an audit committee: Experts are more concerned with the qualitative characteristics of financial reporting, while literates were more concerned with highly visible practices or recurring issues. Although the sample may not have been representative of the population of financial experts and literates, the experiment raised some questions about the necessity and/or desirability of industry knowledge as a component of the ACFE definition. At the very least, findings like these provide a strong motivation for future studies (based on data for years after implementation of these requirements) that examine the effectiveness of various types of audit committee financial expertise, the effects of increased levels of independence, etc.

Finally, there are unanswered questions about the stock exchange listing requirements adopted in 2003. Read and Raghunandan (2001) surveyed 123 U.S. public companies and found that 69 percent already the met the recommendations of the BRC, which the exchanges largely adopted in their new listing requirements in 2003. If those requirements were already largely being met voluntarily, why would mandatory compliance be expected to improve audit committee effectiveness or financial reporting practices beyond where they were in 2001? Those questions have not been addressed by subsequent research.

Emerging Areas for Future Research

Currently an important area of committee composition research is the ACFE. The ACFE is a relatively new governance mechanism relative to the body of research in corporate governance and audit. The definition of an ACFE remains controversial and results are mixed as to the effectiveness of varied backgrounds on the ability of the ACFE to monitor complex financial reporting issues. Additional research to investigate how the financial experts with varied backgrounds are able to identify problems and gain management explanations to questions would be valuable. An extension of the qualification debate is the value of industry knowledge.

One final area of emerging research is audit committee practice. As noted earlier, additional theory-building research into the operations of effective audit committees would be useful in itself, and it could have the additional benefit of providing a basis for developing testable theories to guide new theory-testing research projects. New contextual variables such as objective accounting guidance and financial condition of the firm have been identified and need to be further tested through archival studies.

Interest in audit committee effectiveness, and particularly in the qualifications of the ACFE, should intensify in the future as the US approaches convergence between US GAAP and international GAAP (iGAAP). Far from being just a "different set of rules," iGAAP represents a new financial reporting philosophy, a system that contains much less specific implementation guidance and requires more judgment than does current US GAAP. The debate over the nature of the expertise required to deal with this new reporting environment will be much farther-reaching than just a topic for academic journals, but this new environment should add a large measure to both the urgency of and the opportunities for ongoing research into audit committee effectiveness.

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Table 1
Theory-testing Studies of Audit Committee Effectiveness

Study	Method	Determinant	Independent Variable(s)	Dependent Variable(s)	Sample	Results and comments
Agrawal and Chadha (2005)	Archival	Composition	Independence, expertise, non-audit services.	Earnings restatement	318 US public firms	ACFE negatively associated to restatement; presence of CEO who was member of the founding family positively related. Independence of board, independence of audit committee and non-audit services all unrelated to restatement.
Anderson et.al. (2003)	Archival	Composition	Board size, Independence, ACFE	Cost of Debt	252 firms	Large, independent boards with large independent audit committees associated with lower debt cost. Debt cost was unaffected by audit committee financial expert.
Benkel et.al. (2006)	Archival	Composition	Independence	Earnings management	300 firms (Australia)	Independent board members and independent audit committee members both negatively associated with earnings management.
Bushman, et al. (2004)	Archival	Composition	Independence	Earnings	784	Not all findings consistent. Did not find significant variation in earnings between committees with primarily independent or dependent members.
Carcello and Neal (2000)	Archival	Composition	Board independence	Disclosure of going-concern issues in MD&A	138 companies facing going concern opinions	Positive relationship between affiliated directors and lack of disclosure of financial distress in MD&A.
Carcello et.al. (2006)	Archival	Composition	ACFE Types of expertise Other governance variables	Earnings management		ACFE with accounting expertise negatively associated with earnings management, but after controlling for other governance variables (e.g., independence), association is no longer significant.
Chan and Li (2008)	Archival	Composition	Expertise and independence of board and of audit committee	Market value	Fortune (200	Enhanced firm value found when company has expert-independent directors on the board and on audit committee.
Chen et.al. (2005)	Archival	Composition	Audit committee independence, expertise, frequency of meetings	Use of industry specialist audit firm (proxy for audit quality)	458 public firms (Australia)	Use of an industry specialist audit firm positively associated with non-executive directors on the audit committee, negatively associated with meeting frequency and presence of financial expertise.

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Theory-testing Studies of Audit Committee Effectiveness

Study	Method	Determinant	Independent Variable(s)	Dependent Variable(s)	Sample	Results and comments
Coates et.al. (2007)	Archival	Composition	Literacy score	Abnormal excess market returns	300 public companies (1996, (2000, and (2004)	Developed and tested a scoring method to quantify financial literacy and financial expertise on the audit committee. Companies that improved their scores over the period experienced positive excess abnormal returns.
Cotter and Silvester (2003)	Archival	Composition	Board independence and audit committee independence	Firm value	109 public firms (Australia)	Boards with more independent members also have more independent members on audit committee and compensation committee. Increase in independence not associated with increased firm value.
DeZoort and Salterio (2001)	Experiment	Composition	Experience, audit knowledge	Support for auditor in management-auditor dispute	Audit partners, professors, M.B.A. students	Experience as independent director and auditing knowledge both positively related to support for auditor; concurrent management/board experience negatively related; financial reporting knowledge unrelated.
Dhaliwal et.al. (2006)	Archival	Composition	ACFE; types of expertise Other governance variables	Accruals quality		ACFE with accounting expertise (only) positively related to accruals quality; presence of strong corporate governance practices increases strength of relationship.
Dickins et. al. (2009)	Survey	Composition	Expertise, Size, complexity	Confidence in reporting	33 analysts at investment banking firms	Analysts have more confidence in financial reporting when the audit committee financial expert has an accounting background and when the source of the background is external such as accounting professor or CPA.
Krishnan & Visvanathan (2009)	Archival	Composition	Expertise	Audit fees	801 firms	Audit pricing is negatively associated with accounting expertise. Explores perceived risk
Krishnan and Visvanathan (2007)	Archival	Composition	Expertise Independence	Accounting conservatism (quality of earnings)		Accounting expertise the only type of financial expertise associated with conservative financial reporting; that result was conditional upon good corporate governance practices.
Owens-Jackson et. al. (2009)	Archival	Composition	Independence, meetings, ownership, firm size	Fraudulent financial reporting	50 firms	Given a totally independent audit committee, fraudulent financial reporting is inversely related to management ownership and frequency of meetings.

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Theory-testing Studies of Audit Committee Effectiveness

Study	Method	Determinant	Independent Variable(s)	Dependent Variable(s)	Sample	Results and comments
Peasnell et.al. (2005)	Archival	Composition	Board independence, presence of audit committee	Earnings management	1,271 listed firms (UK)	Presence of outside directors on board was negatively associated with earnings management. No association was found between presence of an audit committee and earnings management. However, most companies in sample had audit committees, so results may not be indicative of the effectiveness of audit committees.
Qin (2007)	Archival	Composition				Accounting-literate financial professional on the audit committee assocated with higher-quality earnings; ACFE under the SEC definition showed no relationship to earnings quality.
Uzun et.al. (2004)	Archival	Composition Diligence	Various characte-ristics of board and of audit committee	Fraud and accu-sations of fraud	266 public companies	Fraud companies had larger boards and higher percen-tages of inside and gray directors on the board. Existence of a compensation committee was positively associated with likelihood of fraud. No-fraud companies had significantly higher percentages of outside directors on audit, compensation and nominating committees. Meeting frequency was not significant.
Vafeas (2005)	Archival	Composition		Quality of Earnings	252 firms (pre-SOX)	Audit committee independence and frequency of meetings both negatively related to low earnings quality (small earnings increases and loss avoidance). Author also documents changes in audit committees – increased independence and increased activity – over the period 1994 to 2000.
Abbott et. al. (2003a)	Archival	Composition, Diligence	Independence Expertise Diligence	Audit fee	492 Big 5-audited firms	Audit committee expertise and independence positively related to audit fee; meeting frequency unrelated
Abbott et. al. (2003b)	Archival	Composition, Diligence	Independence Diligence	NAS fee ratio	538 Big 5-audited firms	Independence and meeting at least four times per year both negatively related to NAS fee ratio

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Theory-testing Studies of Audit Committee Effectiveness

Study	Method	Determinant	Independent Variable(s)	Dependent Variable(s)	Sample	Results and comments
Abbott et. al. (2004)	Archival	Composition, Diligence	Independence Expertise Diligence	Restatement	88 matched pairs	Independence, frequency of meeting and financial expertise all negatively associated with restatement;
Farber (2005)	Archival	Composition, Diligence	Expertise Independence Diligence Governance changes after discovery of fraud	Likelihood of fraud Abnormal returns, analyst following and institutional investors	87 matched pairs of fraud/ no-fraud firms	Absence of good governance practices (e.g., lack of expertise, lack of independence, low frequency of meetings) positively associated with fraud. Corrections of governance problems associated with positive abnormal returns; analyst following and institutional investors did not improve.
Raghunandan and Dasaratha (2007)	Archival	Diligence	Firm size, large blockholders, litigious industry	Frequency of meetings (diligence)	319 firms	Larger firms, large blockholders and litigious industries positively associated with more frequent meetings.
Srinivasan (2005)	Archival	Diligence	Loss of position on board of directors	Positions on other boards, income, reputation	409	There is a market cost to directors who lose board positions, and that may provide an incentive for audit committee members to fulfill their responsibilities.
Jenfang et.al. (2008)	Archival		Expertise	Earnings	Foreign registrants	Earnings-return associations for foreign registrants that do not have audit committees do not compare favorably to U.S. companies

Table 2
Theory-building Studies of Audit Committee Effectiveness

Study	Method	Subject	Sample	Results and comments
Cohen et. al. (2002)	Survey	Audit committee authority	Big 4 audit partners	Auditors do not rely on audit committees to resolve disputes with the board because of a perceived lack of authority of the audit committee
DeZoort et. al (2008)	Experiment	Expertise Support for audit adjustments	241 post-SOX and 131 pre-SOX audit committee members	Audit committee support for audit adjustments is higher post-SOX. CPA and non-CPA support is different.
DeZoort et.al. (2002b)	Survey	Topics discussed by audit committees	300 audit committee members	Small company audit committees less likely to discuss materiality. Members have only moderate exposure to SAB 99 and definition of materiality. Greater than the recommended membership have financial expertise background. Sample is self selected by survey response.
Gendron et.al. (2004)	Interview/ Field Study	Topics discussed by audit committees	Audit committee members of three Canadian companies	Documented issues emphasized during audit committee meetings, e.g., accuracy of financial statements, appropriateness of wording of reports, effectiveness of internal controls, and quality of work performed by external auditors.
HassanElnaby et.al. (2007)	Survey	Audit committee diligence		Audit committees do not meet all assigned responsibilities.
Keinath and Walo (2008)	Survey	Audit committee diligence	94 NASDAQ 100 companies	Audit committee charters failed to cite all responsibilities required by regulations. Audit committee members not aware of all responsibilities.
McDaniel et.al. (2002)	Experiment	Differences in perspective based on differences in expertise	M.B.A. students and audit partners	Financial literates and financial experts bring very different frames of reference to addressing financial reporting issues.

Table 2
Theory-building Studies of Audit Committee Effectiveness

Study	Method	Subject	Sample	Results and comments
Cohen et. al. (2002)	Survey	Audit committee authority	Big 4 audit partners	Auditors do not rely on audit committees to resolve disputes with the board because of a perceived lack of authority of the audit committee
Ng and Han (2003)	Experiment	Negotiation between audit committee and auditors	101 audit managers, Big 4 firms	Identifies contextual variables that affect negotiation between audit committee and auditor: authoritative accounting standards, committee effectiveness.
Read and Raghunandan (2001)	Survey	Voluntary compliance with BRC recommendations	123 Public company Internal audit managers	Reports percentages of companies that were already in compliance with BRC recommendations as of 2001.
Rose & Rose (2008)	Experiment	Judgment, knowledge, trust	40 experienced audit committee members	Members with lower financial knowledge are more likely to accept insufficient explanations and more likely to reject sufficient explanations. Inherent trust affects members' acceptance.

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We encourage the submission of manuscripts pertaining to pedagogical topics. We believe that much of the learning process is not discipline specific and that we can all benefit from looking at research and practices outside our own discipline. The ideal submission would take a general focus on learning rather than a discipline-specific perspective. For example, instead of focusing on "Motivating Students in Group Projects in Marketing Management", you might broaden the perspective to "Motivating Students in Group Projects in Upper Division Courses" or simply "Motivating Students in Group Projects" The objective here is to share your work with the larger audience.

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We encourage the submission of manuscripts pertaining to the administration of academic units in colleges and universities. We believe that many of the challenges facing academic departments are not discipline specific and that learning how different departments address these challenges will be beneficial. The ideal paper would provide information that many administrators would find useful, regardless of their own disciplines

Conferences

Prior to this year, Learning and Administration was a primary track of the annual Academic Business World International Conference. Because of increased interest, we have promoted Learning and Administration from a Track to Conference in its own right. For the full call for papers and more information go to http://ICLAHE.org and http://ABWIC.org.