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Do Management Practices Affect the Economic Performance of Firms Located in Southeast Wisconsin, USA?

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Historically, businesses in southeast Wisconsin enjoyed decades of prosperity when the region was a manufacturing center from approximately the 1880s to the early 2000s. Since the late 1980s the area's economy has been plagued with high unemployment due to the loss of many manufacturing companies. The purpose of this quantitative study was to determine whether a firm's management practices were related to its economic performance defined as increases/decreases in the number of employees. A review of the relevant peer-reviewed, scholarly and industry related literature concerning management practices and their affect on the performance of businesses was conducted. The outcome of the literature review demonstrated that management practices have a direct impact on firm performance. The literature was replete in demarcating management theory and financial measurements. However, few if any scholars have been able to demonstrate a connection between the two elements due to the inability to a reliable methodology to connect the most vital management practices to economic performance. As a consequence, economists, financial analysts and accountants have utilized the most reliable and acceptable measures available, fiscal ratios, balance sheets and etc. However, Bloom and Van Reenen (2007) provided a methodology and survey tool to illuminate the correlation between management decisions and firm economic performance. The author of this study composed a survey composed of 15 general firm identifier questions and 18 management practices defined by Bloom and Van Reenen (2007) as operations, monitoring, targets and incentives and sent it to the chief executive officers of all 682 qualified for-profit manufacturing and service firms in southeast Wisconsin. Upon analysis of the survey data, it was determined that each of the four null hypotheses in this study could not be rejected. However, an examination of the survey data based upon firm ownership type demonstrated that management practices had a significant effect on the economic performance of family owned and operated firms as well as privately owned firms in southeast Wisconsin at the .007 level of significance.

1. Introduction:

Since the Industrial Revolution took place in the United States (c., 1860 1890) economists, social scientists and their management science colleagues have attempted to explain why some firms thrive and others fail. Many explanations have been offered over the decades. Economists have opined that factors such as capital, technology and other inputs account for the differences between flourishing and failed firms (Bloom & Van Reenen, 2007). Greenwald (2007) asserted that while economists have typically attributed growth in aggregate economic activity to the introduction of technology, the decision to apply new equipment and other factors of production in a systematic way is a management function.

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Greenwald stated that “microlevel studies at firms and even plants have consistently shown that most improvements in operating efficiency are attributable to the small, steady benefits of day-to day management intervention, not to dramatic technological innovations or capital investments” (p. 3). However, a major barrier to explaining the differences between thriving and unsuccessful companies has been the absence of high-quality data that measures in a consistent way the relationship between management practices and economic performance (Bloom & Van Reenen, 2007). The paper is organized into a brief review of relevant scholarly literature, details the methodology used in the study, explains the results of the survey findings and concludes with recommendations for further study and scholarly analysis.

2. Literature Review

Since the advent of the industrial economy and its evolution into the information age, corporate leaders have searched for a succinct set of guiding principles that can both guide and measure firm performance. Prior to the Industrial Revolution (1750) the typical farmer or artisan in Europe was not much better off than their ancestors dating back to ancient Rome or Greece; however after the Industrial Revolution that situation changed dramatically (Hubbard, 2006). With the advent of factories and dramatic increases in productivity the scale of coordinating the operations of large enterprises became more difficult. With little historical precedent or academic resources to draw upon, corporate leaders groped for solutions to efficiently manage their enterprises competing in a new competitive environment.

As the American economy continued its massive growth in the later part of the twentieth century a variety of new management theories continued to emerge in popularity to systematize the efficiency and competitiveness of a firm. A variety of management theories emerged during the early period of America’s industrial development Theorists from Frederick W. Taylor, *The Principles of Scientific Management* (1911) to W. Edwards Deming, *Out of the Crisis* (1986) to Robert S. Kaplan and David P. Norton, *The Balanced Scorecard* (1996) have attempted to capture the essence of a singular method to consistently produce corporate success. Furnham (2005) studied the evolution of contemporary management trends (1950 – 2000) and catalogued 24 different management approaches ranging from Empowerment to Theory Z. However; despite the best efforts of many, the search for the managerial equivalent of the Theory of Relativity, a clear definition of corporate performance measures and an explanation of the connection between management choices and corporate results continues.

Hubbard (2006) offered an intriguing insight into the mystery of why some enterprises consistently perform at very high levels and others do not. The key to unraveling the performance/productivity puzzle is assessing corporate competitiveness on a micro economic level. Hubbard cited the work of Alfred Chandler Jr. and David Landes who argued that professional management was the key factor for the United States’ rise to economic prominence compared to its European rivals. “Through the microeconomic perspective, management is, at heart, a choice made by each firm” (p. 30). A seminal study by Bloom and Van Reenen (2006) of more than 700 manufacturing firms in Great

Britain, France, Germany and the United States found that the approach taken by corporate leaders was the foremost management influence on enterprise performance. Those firms with superior management were associated with higher productivity, return on equity and market capitalization. Bloom and Van Reenen (2007) followed up their study of 700 European firms with an expanded research project encompassing more than 4,000 American, European and Asian businesses. Bloom and Van Reenen (2007) research further reinforced their 2006 findings that asserted firms with superior management were associated with higher productivity. The notion that a single set of management practices and performance indicators may have led theorists and practitioners to seek solutions using alchemy rather than using an integrated systematic approach. Both studies by Bloom and Van Reenen (2007) affirmed that certain management practices had an effect on firm growth.

Bloom and Van Reenen found that there was no single management practice that provided the key to improved firm performance. Rather, it was the average score of 18 management practices grouped into "four areas: *operations* (three practices), *monitoring* (five practices), *targets* (five practices), and *incentives* (five practices)" (p. 1361) when compared to a firm's economic success that provided the most accurate indicator of success. Bloom and Van Reenen's innovative survey tool and robust methodology demonstrated a statistically valid correlation between management practices and firm performance. The outcome of the literature review demonstrated that management practices have a direct impact on firm performance. The literature was replete in demarcating management theory and financial measurements. However, few if any scholars have been able to demonstrate a connection between the two elements. The major impediment to connecting management practices to economic performance was the inability to select which management practices should be measured and correlating them to firm results. As a consequence, economists, financial analysts and accountants utilized the most reliable and acceptable measures available, fiscal ratios, balance sheets and etc. However, the specter of management's role in selecting strategy, hiring/terminating practices, leadership, compensation systems, production techniques and etc. obscured the issue. Of all of the classic factors of production, management was among the most difficult to quantify. Management was said to matter but evaluated similar to the way electrical engineers explain the impact of electricity on various system, i.e. the outcome is known; however, the exact composition of electric current remains a mystery. Nicholas Bloom and John Van Reenen provided a methodology and survey tool to illuminate the correlation between management decisions and firm economic performance.

3. Methodology

The problem addressed in this quantitative study was investigating the poor economic performance of firms located in southeast Wisconsin compared to their peer firms in the state of Wisconsin and the United States as measured by increases and or decreases in the number of employees. Norse (1968) recommended the use of employment data as a proxy for firm economic performance because privately held firms do not have to publicly file reports about their financial condition in the United States. In this study,

employment data was obtained from respondents to the survey instrument. Below are the null and alternative hypotheses that guided this study.

H1o. There is no difference in firm economic performance based on management practices of corporations located in the metropolitan areas of southeast Wisconsin.

H1a. There is a difference in firm economic performance based on management practices of corporations located in the metropolitan areas of southeast Wisconsin.

H2o. Global firms located in the metropolitan areas of southeast Wisconsin do not outperform locally owned enterprises located in the metropolitan areas of southeast Wisconsin.

H2a. Global firms located in the metropolitan areas of southeast Wisconsin outperform locally owned enterprises located in the metropolitan areas of southeast Wisconsin.

H3o. Publicly owned firms located in the metropolitan areas of southeast, Wisconsin do not outperform locally owned businesses located in the metropolitan areas of southeast Wisconsin.

H3a. Publicly owned firms located in the metropolitan areas of southeast Wisconsin outperform locally owned businesses located in the metropolitan areas of southeast Wisconsin

H4o. Family managed firms located in the metropolitan areas of southeast, WI do not outperform professionally managed companies located in the metropolitan areas of southeast Wisconsin

H4a. Family managed firms located in the metropolitan areas of southeast Wisconsin outperform professionally managed companies located in the metropolitan areas of southeast Wisconsin.

The type of data collected was quantitative (interval and ratio scale) derived by a survey instrument that was closely patterned after one used and extensively validated by Bloom and Van Reenen (2006, 2007). The author received permission from Bloom to utilize his methodology and he commented favorably about modifications made by the author to apply Bloom's telephonic survey to a mailed survey format. On October 23, 2008 a survey instrument was sent to the CEOs of 682 qualified firms in the metropolitan areas of southeast, Wisconsin. The qualified companies (682) included firms with 49 or more employees derived from the Unemployment Compensation data bases for Racine and Kenosha Counties dated September 2, 2008. The survey instrument was used to sample 100% of the eligible population of 682 firms. In this study a number of Student T-Ratios and a series of ANOVA tests were conducted to test the four null hypotheses. Null hypothesis 1 was analyzed using the ANOVA test. Furthermore, the data analyzed by ownership type using the ANOVA test (Tables 1-4). Furthermore hypotheses 2 through 4 were analyzed using a Linear Regression Analysis. The correlations resulting from these analyses for null hypotheses 2 through 4 were further analyzed using the Student T-Ratio (Tables 5-7). A .05 level of significance was used to determine the significance for each of the four null hypotheses.

4. Findings/Discussion

The data indicates that the survey was completed by a high level of senior level firm leaders. Of those responding to the survey, 47% identified themselves as the President/CEO of the firm, 10% identified themselves as a Vice President, 6% identified themselves as the CFO/Controller and 16% identified themselves as a manager.
The researcher used an ANOVA One-Way test to determine whether to accept or reject Hypothesis 1. The results for Hypothesis 1 are shown in Table 1. The data collected and analyzed for Hypothesis 1 was not sufficient at the .05 level to reject the null hypothesis.

Table 1
ANOVA one-way test for H1o

Source	*df*	*F*	Significance *F*
Regression	1	0.69	0.40
Residual	52		
Total	53		

The ANOVA One-Way Test for Hypothesis 1 indicated that for all ownership types (*N* = 53) the null hypothesis is accepted. A more thorough analysis of the data revealed that several significant correlations exist at the .05 level between economic performance and specific ownership type management practices. The results of this in-depth analysis and n involved in each specific ownership type are provided in Tables 2 – 4.

The management practices of all firm types (*N* = 53) were further
analyzed using an ANOVA one-way test to determine if there was a significant difference in firm economic performance based on management practices. The categories of firms were family owned (*n* = 35), publically owned (*n* = 4) and privately owned (*n* = 48). These results are presented in Tables 2 -4.

Table 2
ANOVA one-way test for family owned firms

Source	*df*	*F*	Significance F
Regression	1	7.97	0.007
Residual	34		
Total	35		

The analysis indicates that there is a significant difference (*p*=.007) in the management practices used in family owned firms and the economic performance of these firms.

The management practices for the four publically owned firms were further analyzed using an ANOVA one-way test to determine if firm economic performance was based on management practices. These results are presented in Table 3.

Table 3
ANOVA one-way test for publically owned firms

Source	*df*	*F*	Significance *F*
Regression	1	1.83	0.26
Residual	3		
Total	4		

The null hypothesis was accepted in regard to the relationship of the management practices of publically owned firms and their economic performance. The *F* value attained was not significant with a *p* value of .268; meaning there is a 26.8% chance of a type 1 error if the null hypothesis was rejected.

Table 4
ANOVA one-way test for privately owned firms

Source	*df*	*F*	Significance *F*
Regression	1	6.44	0.01
Residual	47		
Total	48		

The null hypothesis was rejected and the research hypothesis was accepted that there is a difference between the management practices and economic performance of privately owned firms because of the *F* value attained of 6.44 which represents a *p* value of .014. It should be noted that both family and privately owned firms were combined in this analysis because both types of firms are defined as privately owned firms. The key variable which distinguishes them from one another is who owns the firm as noted in the Definition of Terms, chapter 2.

An ANOVA test was not conducted to determine the difference between the management practices and economic outcomes of global firms due to the small response (1) from global firms to the study's survey. While each individual ownership type indicated a strong difference between management practices and economic performance, the aggregate ANOVA One-Way Test (See Table 1) did not support the conclusion that the study's *H1o* research hypothesis should be rejected. One of the

main reasons for this was due to the small number of responses from both publically owned and globally owned firms.

A *t* test was used to analyze the *H2o* null hypothesis.

H2o. Global firms located in the metropolitan areas of southeast

Wisconsin do not out perform locally owned enterprises located in the metropolitan areas of southeast Wisconsin.

H2a. Global firms located in the metropolitan areas of southeast

Wisconsin outperform locally owned enterprises located in the metropolitan areas of southeast Wisconsin.

The results of the *t* test are shown in Table 5. As noted previously, only one global firm responded to the survey. Due to this very low response rate, the chance of error was too great and therefore any conclusions drawn would be of dubious value. However, a t test analysis was conducted and it was found that the *t* value of 0.811 was not significant. The chance of a type one error was .21 or 21% which meant the null hypothesis can not be rejected at the .05 level.

Table 5

T test for H2o: *Two-Sample Assuming Equal Variances*

	Locally Owned Firms	*Globally Owned Firm*
Mean	3.349537	4.05
Variance	0.7299656	#DIV/0!
Observations	48	1
Pooled Variance	0.7299656	
Hypothesized Mean Difference	0	
df	47	
t Stat	-0.81144	
P(*T*<=*t*) one-tail	0.2106017	
t Critical one-tail	1.6779267	
P(*T*<=*t*) two-tail	0.4212034	
t Critical two-tail	2.0117405	

A t test procedure was used to test the *H3o* null hypothesis.

H3o. Publicly owned firms located in the metropolitan areas of southeast, Wisconsin do not outperform locally owned businesses located in the metropolitan areas of southeast Wisconsin.

H3a. Publicly owned firms located in the metropolitan areas of southeast Wisconsin outperform locally owned businesses located in the metropolitan areas of southeast Wisconsin

The results of the t test are shown in Table 6. It was found that the t value of 0.767 was not significant at the .05 level. The *p* value of .22 attained exceeded the .05 level and therefore the null hypothesis is accepted.

Table 6

T test for H3o : *t* test*: Two-Sample Assuming Equal Variances*

	Publically Owned Firms	*Privately Owned Firms*
Mean	3.666667	3.361678
Variance	0.591049	0.727382
Observations	5	49
Pooled Variance	0.716895	
Hypothesized Mean Difference	0	
df	52	
t Stat	0.767259	
P(*T*<=*t*) one-tail	0.223199	
t Critical one-tail	1.674689	
P(T<=*t*) two-tail	0.446397	
t Critical two-tail	2.006647	

A *t* test use used to test the *H4o* null hypothesis.

H4o. Family managed firms located in the metropolitan areas of southeast, WI do not outperform professionally managed companies located in the metropolitan areas of southeast Wisconsin

H4a. Family managed firms located in the metropolitan areas of southeast Wisconsin outperform professionally managed companies located in the metropolitan areas of southeast Wisconsin.

The results of the t test are shown in Table 7. It was determined that the *t* test value of -0.245399 was not significant at the .05 level. Therefore there was a 40% chance of a type 1 error and the null hypothesis is accepted.

Table 7

T test for H4o: t test*: Two-Sample Assuming Equal Variances*

	Family Managed Firms	*Professionally Managed Firms*
Mean	3.3719136	3.432099
Variance	0.7620493	0.638909
Observations	36	18
Pooled Variance	0.7217919	
Hypothesized Mean Difference	0	
df	52	
t Stat	-0.2454	
P(*T*<=*t*) one-tail	0.4035564	
t Critical one-tail	1.6746892	
P(*T*<=*t*) two-tail	0.8071128	
t Critical two-tail	2.0066468	

5. Conclusion/Recommendations

While each null hypothesis that guided this study could not be rejected, a careful analysis of the data by ownership group demonstrated the opposite; i.e. that management practices had an effect on the economic performance of family owned firms, privately held firms and publically traded firms. This conclusion was derived from the responses to Question 15 of the General Firm Information portion asking respondents to rank five options (capital, employees, management practices, materials and technology) as the most vital factor to the firm's success.

The most striking finding from this research study involved the relationship between the management practices of privately owned firms, in particular family owned firms and positive economic performance. The data analysis indicated that the researcher could reject the null hypothesis that there was no correlation between family owned firms and management practices and in accepting the research hypothesis in regard to the management practices of family owned firms and their economic performance. The high significance of the F-test (significant at the .007 level) indicated a high statistically significant association between these two variables.

5.1 Recommendations

This study was based on conditions that existed before the current economic downturn. One explanation for why publically traded firms showed no growth or a decline in employee numbers may be due to the initial signs of economic deterioration in late 2007 to early 2008. It may be a short time before the faster growing family owned firms face the same slowdown. Additionally, access to capital may be severely limited at the present time compared to 2006 -'07 particularly for publically owned firms. The survey instrument was used to sample 100% of the eligible population of 682 firms. The response rate to the mailing of the survey was 54 surveys or a response rate of 7.92%. This rate was considered acceptable for a blind direct mail survey with no built in system for follow-up except for a letter of reminder for the entire population of 682. The funding source for this survey was solely the investigator. The financial resources to conduct a number of follow-up mailings or telephone follow-ups were not available. It is recommended that if the survey was to be duplicated a secure coding system to identify non-responders be provided as an economical method to target non-responders for follow-up reminders.

In a future survey it is highly recommended that a telephonic follow-up be conducted to secure a larger response rate from both global and publically owned firms in southeast Wisconsin. Finally, the efficacy of the respondents' claims regarding the critical role that managerial practices and decisions have on firm economic performance may be affirmed by a double blind approach. Another limitation was the response rate to the survey. A number of factors caused this. One of them was the economic environment in the United States and globally during the time frame that the survey was distributed. In the fall of 2008, the United States and global economies were in disarray due to the international banking crisis. Many firm leaders in southeast Wisconsin were concerned with the impact that the deterioration of the economic and financial environment would have on their firms' existence. This factor is particularly significant due to the high proportion of family and privately owned firms in southeast Wisconsin. Thus, firm leaders may have been diverted from responding to the survey because they were more concerned with their firms' survival than completing the survey.

It was the author's goal to determine factors that may contribute to the resurgence of southeast Wisconsin's economy and promote a discussion on how superior management practices and not simply capital investments can upgrade the performance and long-term competitiveness of the area's firms. Improving management practices does not require millions of dollars of capital but rather small, continuous investments in a firm's leaders and their willingness to change from outmoded methods to the best academia and their industry can offer. A commitment to continuously improving the management practices of a firm will transform not only a single company but southeast Wisconsin as well.

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