THE RELATIONSHIP BETWEEN CORPORATE SUSTAINABILITY AND FIRM FINANCIAL PERFORMANCE

ABSTRACT

We conducted a longitudinal, quasi-experimental study in which we explored the effects of corporate sustainability on firm financial performance. We compared financial performance in 494 facilities of a large financial firm by comparing those that received third-party certification for their environmental practices (i.e., LEED certification) to those that have not. Analyses revealed three key finings: (a) environmental practices are positively related to an increase of household consumer business, (b) environmental practices had a stronger impact on consumer accounts than business accounts, and (c) utility costs were lower for green facilities. These findings are also discussed in light of their implications.

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Environmental sustainability has found its way into the national conversation in many sectors of society, including business. With respect to business, environmental sustainability refers to the incorporation of practices by a business that do not erode natural resources (Bansal, 2005; Hart, 1995). Over the course of the previous and current decade, business practitioners have considered, debated, and increasingly embraced the potential value that sustainable practices can have in the creation of business value (Haanaes et al., 2011). While a strong case can be made for the careful management of certain critical resources, particularly those dependent on non-renewable or slow to renew sources, there remain many unanswered questions regarding exactly how, and how much, the adoption of environmentally sustainable practices can benefit the business organizations that adopt them. Partly, this shortage of information and answers reflects the relative newness of the environmental sustainability theme within business and partly it reflects a shortage of formal research that addresses the business value of such practices. This paper addresses that void in part by way of a study examining the relationship between the adoption of sustainability practices and its effect on business performance.

Sustainable Practices and Business Performance

Shrivistava (1995) broke ground in the management literature by examining the connections between the conduct of business by corporations and ecological sustainability. He positioned business as both a cause and a potential solution to threats created by environmental degradation and identified a set of strategic and operational

options through which businesses might become more of the solution. In that same year, Hart (1995) proposed a natural-resource-based view of the firm that would formally recognize linkages between firm competitiveness and its interdependencies with the natural environment. Subsequently, a number of studies explicitly examined the impact of environmentally sustainable practices on firm performance. Several studies have examined the relationship between the market value of firms listed on the S&P 500 and indicators of environmental impact such as emissions or toxic releases (Gottsman and Kessler, 1998; Konar and Cohen, 2001; Matsumara, Prakash, & Vera-Muñoz, 2011) or the adoption of environmental standards that exceed legal requirements (Dowell, Hart, & Yeung, 2000). These studies suggest a positive relationship between these conscious practices and market value. Similar effects examining groups of large publically held firms, were observed by researchers utilizing other economic measures such as a firm's return on assets (Russo and Fouts, 1997) and a firm's systemic risk (Feldman, Soyka, & Ameer, 1997). Klassen and McLaughlin (1996) observed that the receipt of environmental achievement awards by NYSE and AMEX listed companies was positively related to increases in market value.

Other studies have evaluated the economic impact of environmentally sustainable practices on specific industries and, in some cases specific firms and the results of these studies are varied and complex. Christmann (2000) found that chemical companies that utilized innovative pollution prevention technologies that differed from more general industry best practices enjoyed significant net cost savings relative to those that did not. Nehrt (1995) found that pulp and paper firms that were early adopters of pollution control

technologies later realized positive profit growth that exceeded that predicted by an economic forecasting model for firms in the industry.

In a review of the relationship between the natural environment and organizations, Etzion (2007) noted that the environmental performance of organizations has been linked by research to firm-level, industry-level and environmental context attributes. At the firm level, there was evidence that environmental performance was positively related to organizational innovation and R&D, workforce perceptions, the extent to which the organization assimilated stakeholder perceptions, the knowledge and information flows within the organization, larger size, broader scope, and greater slack resources. At the industry level, the extent and nature of governmental and self-regulation, consumer demands, and certain intra-industry dynamics have all been found to affect environmental performance. Finally, the specific context of the firm, including the presence of influencing agents such as environmental advocates or advocacy groups, the media, or consumer organizations, interacts with how an organization conceptualized or constructed its environment to influence environmental performance.

Practitioner-focused surveys of executives and business practices have been attentive to trends in the adoption of green practices by organizations and the rationale expressed by executives for adopting environmentally sustainable practices. It is clear that many firms take environmental sustainability seriously. An annual survey of sustainability-driven spending by firms across 13 industries revealed that 59% of the firms surveyed increased such spending in 2010 while only 3% decreased spending (Haanaes et al., 2011). The survey revealed that 66% of the firms anticipated increases in sustainability-driven spending for the forthcoming year. The survey also revealed that

larger firms were more likely than smaller firms to adopt sustainable practices. There is also some evidence from the survey, based on self-reports, that firms that have pursued sustainable practices tend also to outperform their competitors, although the causal direction of this relationship is ambiguous.

As or why firms adopt green practices, the cross-industry annual survey indicated that executive thought leaders within firms that have adopted green practices believe that they produce " intangible" competitive benefits such as increases in employee productivity and engagement as well as halo effects that positively influence talent recruitment as well as customers, investors and other stakeholders. However, the survey also indicated that most firms struggle to measure the costs and benefits of green strategies and to develop comprehensive metrics for assessing their impacts. In making the business case for spending on green initiatives, most respondents indicated that they made decisions on things they could quantify rather than trying to include intangibles such as beliefs about employee productivity or positive stakeholder responses. Only 20% indicated the use of intangibles to justify sustainability-related investment and even fewer indicated that they would use lower hurdle rates or longer payback periods in cases of "green" investments.

In some circumstances the case for building or buying green is relatively easy to make in economic terms. This is particularly true when the "green choice" directly enhances the market value of the product. For example, in commercial real estate, buildings certified as energy efficient command leasing premiums of 3% to 20% and sales price premiums of 8 to 26% depending on the market (Watson, 2011). Presumably, these premiums mainly reflect the costs associated with using and maintaining the

property in the form of savings on utilities and the economic benefits of indoor environmental quality on employee health. Even in the face of economically measurable benefits, however, the rate of diffusion of energy efficiency and sustainability technology in property markets has not consistently mirrored these advantages (Kok, McGraw, & Quigley, 2011), suggesting that markets have either not fully recognized these advantages or, perhaps, decision makers are skeptical about their persistence in the face of energy price fluctuations.

While a body of academic literature contains evidence that business tactics associated with environmental sustainability including careful compliance with environmental regulations, the adherence to environmental standards that exceed legal requirements and the development of a pro-environment reputation are related to positive economic outcomes for firms, recent surveys of executives suggest that firms continue to struggle with economic justifications for investments in environmentally sustainable practices. While executives believe that sustainable practices are beneficial, and perhaps irrespective of the academic literature that indicate real economic outcomes, they see these benefits as "intangibles" that may not be economically measurable. It appears that, for many executives, the "jury is still out" with respect to the economic value of firm investments in environmental sustainability.

THE PRESENT STUDY

This study examined the business impact of a firm's investments in sustainability. Unlike most previous research, the investment examined in this study was unrelated to local, state, or federal environmental regulations and was unrelated to any concerns about regulatory compliance. Specifically, we examined investments made by a financial

institution in building or retrofitting its facilities to be environmentally sustainable. Within this firm, we compared the economic performance of facilities that were certified according to the Leadership in Energy and Environmental Design (LEED) criteria established by the U.S. Green Building Council (US Green Building Council, 2009) with those that were not. To be LEED certified a building must earn at least 40 out of 100 possible points in a rating system that assigns points (maximum points in brackets) for the sustainability of the building site (26), water efficiency (10), energy and atmosphere (35), materials and resources used in construction (14), indoor environmental quality (15), innovation in design (6), and regional priority (4). This scale is widely used to distinguish buildings according to their performance on environmental sustainability criteria. Since 2000 when the certification program was introduced, the amount of LEED certified new construction has steadily climbed. In 2011, more than 20% of new floor space put into use in the U.S. was LEED certified (Watson, 2011).

The central question addressed in the research was: does the business performance of LEED-certified workplaces exceed that of non-LEED certified workplaces? Our first set of hypotheses, which are subdivided by two consumer types, addressed this question. The first hypothesis in the set addresses household, or non-business, consumers. These are customers who maintain personal accounts.

> ***Hypothesis 1A:*** *The volume of household consumer business conducted through LEED certified facilities will exceed that conducted through non-LEED Certified facilities.*

The hypothesis rested on two theoretical intuitions. First, it is possible that the real consumer experience resulting from transacting with a LEED certified facility

exceeds that of a non-certified facility, and this improved experience increases the volume of business in LEED-certified facilities relative to non-LEED facilities. The superior consumer experience might result from a higher level of service from the facilities' staff. Specifically, the staff at the LEED certified facility may provide better service as a result of improved working conditions as well as a greater employee identification with the values of the employer. Studies of corporate social responsibility (CSR) have found performance effects tied to employee identification with values associated with CSR (Carmeli et al., 2007; Jones, 2010). Second, it was possible that consumers, independently of the experience of transacting with the enterprise, were attracted to a provider of financial services that embraced environmental sustainability. Stated a bit differently, we expected congruency between the "green values" of the business and the "green values" of household consumers to account for a greater level of business activity. Based on both intuitions, we predicted that the volume of consumer business conducted through green facilities would be greater than that for non-green facilities.

The second of this set of hypotheses addressed consumers who maintained business accounts. While in this study the services provided to businesses were the same as those provided to households, we anticipated that business customers would be less responsive to LEED certification than household consumers based on two theoretical intuitions. First, businesses would be less prone to selecting a provider of financial services based on value congruency. Rather, we anticipated that considerations of cost and convenience would dominate the selection of a financial services provider. Second, we anticipated that the person or persons who actually conducted the financial

transactions for a business would have less discretion on the choice of service provider, making customer experience a less important factor for business customers than it was for household customers.

Hypothesis 1B. *The difference in business volume between LEED and non-LEED certified facilities will be larger for consumer accounts than for business accounts.*

We also anticipated a secondary economic effect of the LEED certification. In addition to the effects on business volume proposed by the first hypothesis, we anticipated a reduction in the cost of doing business by a LEED certified facility. This would be specifically evident in utility cost savings.

Hypothesis 2: *Utility costs will be lower for green facilities than non-green facilities.*

This hypothesis follows directly from the intent of environmentally sustainable building to reduce the consumption of critical resources including energy as well as the "carbon footprint" of the business.

METHODS

Sample

The sample consists of 494 facilities in a large financial institution in the United States. Because the total number of facilities was very large relative to the number of LEED certified, we employed the following criteria to create a reasonably sized sample that would facilitate valid comparisons between certified and non-certified facilities. First, in order to assure a sufficient amount of data, and to control for "newness" trends that would be present only within newly opened facilities, only facilities that were older

than three years were included. Second, to build a control group we matched the LEED facilities with other facilities based on revenue and market demographics. This step allowed us to include in our control group facilities whose business context was similar to those of the LEED certified facilities and to eliminate those that might be outliers relative to the certified group. The resulting sample consisted of 52 LEED certified and 442 facilities that are not LEED certified.

Measures

Data were collected for each year from 2008 to 2010. All of the LEED certified facilities were certified as of 2008. In 2009, the company began green marketing efforts, created a position for sustainability, and initiated a comprehensive corporate sustainability strategy that focuses on greening of facilities.

LEED certification. LEED certification served as a dichotomous dependent variable in the study (0 = non-LEED certified, 1 = LEED certified). LEED certification, which is the dominant green rating system in the US and is administered by a qualified third-party (US Green Building Council), was the central sustainability focus for the company.

Dependent measures. In order to test Hypotheses 1a and 1b, we developed two clusters of dependent measures, one capturing consumer accounts activity and the other capturing business account activity. To measure the effect of certification on consumer account activity, we used the following variables: (a) total consumer deposit accounts per facility, (b) total consumer deposit balance per facility, (c) total consumer loan accounts per facility, and (d) total consumer loan balance per facility. To measure business customer performance, we used the following variables: (a) total business deposit

accounts per facility, (b) total business loan accounts per facility, (c) total business deposit balance per facility, and (d) total business loan balance per facility. For the latter two variables, we only had data for 2010.

Hypothesis 2 predicts that there will be a negative relationship between LEED certification and utility costs per employee. In order to test Hypothesis 2 we collected total annual utility costs per facility and then divided by number of total employees. Because we did not have data on square footage, we used number of employees as a proxy for facility size.

Control variables. LEED certification is far from the only factor that might affect the economic performance of each facility. To account for and control for other effects on performance, we utilized a number of control measures that were all tracked by the financial institution at the facility level on an annual basis. These were:

- total number of employees at the facility,
- age of employees,
- tenure,
- gender,
- age of facility,
- amount spent on advertising at the facility level,
- household density (i.e., number of households in a two-mile radius from the facility),
- household net worth (i.e., net worth of consumers in a two-mile radius from the facility).

ANALYSES AND RESULTS

Because of the hierarchical structure of the data set (i.e., years were nested within facilities), we employed hierarchical linear modeling (Raudenbush and Bryk, 2002) to test our hypotheses. The data contained two levels. The lower level (level 1) made up the repeated, yearly dependent measures and control variables. The upper level (level 2) comprised facility LEED status. Thus, the level 1 data could vary within facilities, and the level 2 data could vary between facilities.

We also used hierarchical linear modeling (HLM) because it results in more efficient parameter estimates that take into account the non-independence of within-facility observations (Raudenbush and Bryk, 2002). Specifically, in our sample, HLM allows us to partial out the effect of LEED certification after taking into consideration any non-independence of financial performance outcomes from year to year. Because we seek to predict variation in a slope, we used an intercepts- and slopes-as-outcomes model that includes a cross-level interaction term – specifically, we tested for cross-level interactions between LEED (i.e., Level 2) and time (i.e., Level 1 or individual-level variable).

The only instances in which we did not use HLM analysis was in cases where we had data for only 2010 (i.e., business deposit balance per facility, business loan balance per facility, and utilities per employee per facility). For these variables, we conducted ordinary least squares (OLS) regression.

Descriptive Statistics and Correlations

Means, standard deviations, and correlations are presented in Table 1. The bivariate correlations indicate that Group (i.e., non-LEED certified = 0, LEED certified = 1) is correlated with all control variables.

Insert Table 1 about here

Tests of Hypotheses

Hypotheses 1a predicts that LEED certification would have a positive relationship with consumer market performance. To test this Hypothesis we applied HLM to the consumer accounts and balances measures. The results of HLM testing for this hypothesis are provided in Tables 2a-b. The cross-level interaction between Time and LEED certification was significantly and positively related to the following variables: (a) total consumer deposit accounts per facility (b = 458, $p < .001$), (b) total consumer deposit balance per facility (b = 3,032,000, $p < .001$), (c) total consumer loan accounts per facility (b = 25.51, $p < .01$), and (d) total consumer loan balance per facility (b = 994,900, $p < .05$). Figures 1a-d also plot these interactions. Therefore, hypothesis 1a was supported.

Insert Tables 2a-b about here

Insert Figures 1a-d about here

Hypothesis 1b predicts that LEED certification would have no relationship with business customer performance. The results of HLM testing for this hypothesis are provided in Table 3b. The cross-level interaction between Time and LEED certification was not significantly related to (a) total business deposit accounts per facility (b = -.073,

p = .97) and was significantly and negatively related to (b) total business loan accounts per facility (b = -1.09, p < .05). However, because we only had 2010 data for (c) total business deposit balance per facility and (d) total business loan balance per facility, we conducted ordinary least squares (OLS) regression using only data from 2010 for all variables included in the models. The results of OLS regressions presented in Table 3b show that after accounting for all effects of control variables, LEED certification is significantly and negatively related to (c) business deposit balance per facility (p < .001) and (d) total business loan balance per facility (p < .001).

Insert Tables 3a-b about here

Hypothesis 2 predicts that there will be a negative relationship between LEED certification and utility costs per employee. The results of OLS regressions presented in Table 4 show that after accounting for the effect of age of facility, LEED certification is significantly and negatively related to utility costs per employee per facility (p < .01). Therefore, hypothesis 2 was supported.

Insert Table 4 about here

DISCUSSION

Our study indicates that sustainability practices are related to an increased volume of business, especially with individual consumers rather than businesses. Compared to non-LEED certified facilities, LEED certified facilities annually opened up 458 more

consumer deposit accounts and had $3,032,000 more in consumer deposit balance per facility per year. LEED certified facilities also opened up 25.5 more consumer loan accounts and had $994,900 more in loan balance per facility per year. These results were significant even after controlling for all major variables that the institution uses to track influence on revenue such as market demographics (i.e., consumer net worth, household density in the area of the facility), size of facility (i.e., number of employees), personnel demographics (i.e., age, gender, tenure), age of facility, and advertising spent annually per facility. As can be seen in Tables 2a and 2b, after controlling for the previously mentioned variables, the overall effect of LEED on our dependent variables was negative. However, as shown in Figures 1a-d, the actual financial performance of LEED certified facilities outperformed non-LEED certified. The negative result is due to controlling for other variables that influenced the difference. However, what we are most concerned with is the trend. As can be seen in the data, is that the slope and the effect of LEED certification on financial outcomes is increasing each year. These results clearly show that revenue in LEED certified facilities is greater than non-LEED facilities.

On the other hand, there was no significant effect of LEED certification on business deposit accounts while a negative and very small effect on business loan accounts with 1.09 accounts less per year being opened. Although we predicted that the effect of LEED would be greater on consumer than business accounts, we did not foresee that LEED would have no effect on business accounts. This result highlights the differential effect of certification between household and business customers.

Our study also shows that sustainability practices – specifically green building – are associated with lower costs. Specifically, the annual utilities cost per employee in green facilities was $675.26 lower than in non-green facilities.

Therefore, our study augments previous research in several important ways. First, we are looking at very specific physical investments. The firm's environmental sustainability tactic is very specific because the building physical plan is certified to be sustainable by accepted independent standards (i.e., LEED). This operationalization of environmental sustainability is not based on legal compliance or general firm reputation. It is a specific standardized tactic that is also proactive in nature. Therefore our study contributes to the following gaps in the literature as identified in a review of the literature (Aguinis & Glavas, 2011): (a) previous studies have primarily focused on reactive sustainability tactics (e.g., response to stakeholder pressure, regulation, industry standards); (b) also, previous studies have primarily explored external effects of sustainability (e.g., reputation, reduced risk) without exploring the internal impact of sustainability; and (c) prior research has often aggregated CSR measures without exploring the differences between internal offices and employees.

Also, our study utilized data from a single firm with a relatively large number of geographically distinct marketplaces. This adds a significant level of control on the possible effects of organizational-level differences such as reputation, board-level influence, research and development, firm size, industry effects, and slack resources. For example, the effects of firm reputation could be seen if we compared the organization to others in its industry. Therefore, this multi-facility, single firm study was able to avoid differences between firms that might arise in a multi-firm study.

Third, we explored revenue and costs – and separated them. Prior research has primarily focused on market-based and accounting measures such as share price, return on assets, and return on equity (e.g., Hillman & Keim; McWilliams & Siegel, 2000; Waddock & Graves, 1997). To our knowledge, our study is the first to explore the impact of sustainability practices on the broad range of accounting measures of firm performance. In this study we were able to track the effects of LEED certification on consumer responses in the form of opening accounts and depositing funds (i.e., checking, savings). These measures explicitly look at revenue effects independently of reduction in costs. Previous research on sustainability has primarily focused on cost reduction without studying how sustainability adds value to a business.

Fourth, we found that sustainability practices have an effect on individual consumers while no effect on business customers. We believe this is due to discretion. Often business customers have less discretion. For example, as the results of the annual executive survey of green practices suggests (Haanaes et al., 2011), business executives are likely to make decisions based purely on cost and not factor in intangibles such as sustainability, while consumers might. The findings suggest that when individuals have control over their choices where to do business, environmental sustainability tactics may make a difference in those choices.

Future Research

We propose a few directions for future research. First, because this study was conducted within an individual-firm setting, the study could be replicated in other firms. Also, the study should be replicated in other industries than financial. Second, we propose looking at electronic transactions versus those that are conducted in the facility.

Doing so might offer further insights into the effect of the facility and especially the effect of the employees on consumers that conduct business in the facility. Finally, future research should explore the underlying mechanisms of why sustainability practices influence performance. Mediating mechanisms, especially at the employee and consumer level, should be explored in order to understand why sustainability impacts financial outcomes.

CONCLUSION

Our study contributes the following insights. Because certification in our study does not directly affect the product, the effects we found were intangible in nature. Yet, certification makes a significant difference on revenue generating aspects of the business. We also found significant effects on cost reduction, but our study contributes by going above and beyond cost measures. We also found effects of certification on individual consumer accounts but not with business accounts. It seems that when consumers have discretion, sustainability practices can make a positive difference.

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TABLES

Table 1. Descriptive Statistics and Correlations[a]

Variable	Mean	Mean LEED	Mean non-LEED	1	2	3	4	5	6	7	
1. Age of Facility	24.49 (26.37)	18.9 (28.6)	25.4 (26.7)								
2. Advertising	581.23 (1,088.1)	1,202 (1,647)	508 (878)	.00							
3. Total Employees	6.71 (3.02)	8.4 (2.1)	6.5 (3.1)	.12**	.14**						
4. Age of Employees	36.76 (6.75)	34.7 (5.4)	37.0 (6.8)	.08**	.06*	-.02					
5. Tenure	5.89 (4.00)	4.5 (2.8)	6.0 (2.8)	.17**	.08**	.08**	.68**				
6. Female Percent	78.68 (19.49)	71.7 (15.6)	79.5 (19.7)	.13**	.00	.02	.28**	.34**			
7. Household Net Worth	359,027(130,869)	395,366 (112,949)	354,896 (132,167)	-.13**	.01	-.08**	-.03	-.22**	-.22**		
8. Household Density[b]	1,456 (1,973)	1,145 (1,386)	1,493 (2,028)	.11**	-.03	.04	-.22**	-.12**	-.16**	-.34**	
9. Group	0.10 (0.31)			-.07**	.21**	.19**	-.11**	-.12**	-.13**	.10**	-

[a] Standard deviations are in parentheses. Variable 9 is a between-facility (level 2) variable. Variables 1 through 8 are within-facility (level 1) variables. Variables 3 through 6 are related to employees in the facilities while variables 7 and 8 are related to consumer demographics of the facility. $n = 1386$

[b] Number of households in a two mile radius from facilities.

[c] "LEED Certified" = 1, "Non-LEED certified" = 0.

* $p < .05$

** $p < .01$

Table 2a. Results for HLM Analysis of Total Consumer Deposit Accounts and Balance per Facility

	Total Consumer Deposit Accounts				Total Consumer Deposit Balance			
	Model 1a		Model 1b		Model 2a		Model 2b	
Independent Variables	***b***	***s.e.***	***b***	***s.e.***	***b***	***s.e.***	***b***	***s.e.***
Intercept	448.90	722.80	588.00	721.40	-25,380,000**	8,583,000	-23,160,000**	8,504,000
Time	397.00***	24.15	351.70***	24.61	2,626,00***	277,600	2,345,000***	290,000
Age of Facility	4.72	3.07	4.35	3.06	164,200***	36,410	156,300***	36,070
Advertising	.0049	.028	.0016	.028	246.70	327.70	269.10	325.70
Total Employees	621.10***	26.76	631.50***	27.31	5,493,000***	317,100	5,714,00***	321,200
Age of Employees	7.70	16.52	6.79	16.46	201,000	196,100	179,600	193,900
Tenure	56.6*	28.90	53.52	28.81	1,127,000**	342,800	1,061,000**	339,200
Female Percent	-2.93	4.50	-3.74	4.50	-114,900*	53,510	-130,600*	53,100
Household Net Worth	-.0019*	-.0007	-.0018*	.0007	63.46***	8.323	64.38***	8.231
Household Density[a]	.065	.048	.058	.049	781.70	569.80	640.40	564.70
Group			-986.90***	265.00			-11,800,000***	3,062,000
Group x Time			458.00***	76.00			3,032,000***	901,500

[a] Number of households in a two mile radius from facilities.

n = 1483 observations, 483 facilities

LR (χ^2 = 39.54, df = 16, p < .001)

n = 1380 observations, 483 facilities

LR (χ^2 = 23.73, df = 16, p < .001)

* p < .05; ** p < .01; *** p < .001

Table 2b. Results for HLM Analysis of Total Consumer Loan Accounts and Balance per Facility

	Total Consumer Loan Accounts				Total Consumer Loan Balance			
	Model 1a		Model 1b		Model 2a		Model 2b	
Independent Variables	***b***	***s.e.***	***b***	***s.e.***	***b***	***s.e.***	***b***	***s.e.***
Intercept	-14.10	85.59	1.86	85.45	-3,669,000	3,509,000	-3,375,000	3,519,000
Time	4.80	3.00	2.34	3.14	250,600*	120,900	153,000	126,500
Age of Facility	1.03**	.34	.97**	.36	8,168	14,890	7,564	14,940
Advertising	-.0012	.0034	-.001	.0034	219.90	147.60	210.60	147.80
Total Employees	67.63***	3.18	69.11***	3.24	2,391,000***	130,400	2,412,000***	133,700
Age of Employees	1.22	1.96	1.09	1.95	80,020	80,170	78,360	80,220
Tenure	7.97*	3.42	7.54*	3.41	104,500	140,300	99,090	140.500
Female Percent	-.81	.53	-.91	.53	-37,740	21,830	-38,980	21,920
Household Net Worth	.000037	.000083	.000045	.000083	15.22***	3.40	15.29***	3.40
Household Density[a]	-.024***	.0057	-.025***	.0057	-812.30***	232.20	-823.30***	232.90
Group			-.98**	32.70			-2,244,000	1,365,000
Group x Time			25.51**	9.83			994,900*	398,700

[a] Number of households in a two mile radius from facilities.

n = 1380 observations, 483 facilities

LR (χ^2 = 11.38, df = 16, p < .01)

n = 1379 observations, 483 facilities

LR (χ^2 = 6.65, df = 16, p < .05)

* p < .05; ** p < .01; *** p < .001

Table 3a. Results for HLM Analysis of Total Business Deposit and Loan Accounts per Facility

	Total Business Deposit Accounts				Total Business Loan Accounts			
	Model 1a		Model 1b		Model 2a		Model 2b	
Independent Variables	***b***	***s.e.***	***b***	***s.e.***	***b***	***s.e.***	***b***	***s.e.***
Intercept	-1.24	11.55	-2.09	11.57	-.045	1.60	-.0021	1.60
Time	-1.60**	.58	-1.61**	.61	-1.41***	.14	-1.30***	.15
Age of Facility	.014	.049	.018	.049	.0052	.0067	.0042	.0067
Advertising	-.0006	.00067	-.00069	.00068	.000064	.00014	.00012	.00014
Total Employees	7.47***	.43	7.36***	.44	.83***	.059	.85***	.06
Age of Employees	-.41	.26	-.41	.26	.00012	.036	-.0025	.036
Tenure	.069	.46	.096	.46	.13*	.064	.12	.063
Female Percent	.012	.072	.019	.072	.011	.0099	.0097	.0099
Household Net Worth	.000066***	.000011	.000065***	.000011	.0000019	.0000015	.000002	.0000015
Household Density[a]	.0048***	.00077	.0048***	.00077	-.00027**	.00011	-.00029**	.00011
Group			4.54	4.78			.85	1.00
Group x Time			-.073	1.91			-1.09*	.47

[a] Number of households in a two mile radius from facilities.

n = 1378 observations, 484 facilities

LR (χ^2 = 1.15, *df* = 16, *p* = .56)

n = 1386 observations, 483 facilities

LR (χ^2 = 8.81, *df* = 16, *p* < .05)

* p < .05; ** p < .01; *** p < .001

Table 3b. Results of Regression Analysis for Total Business Deposit Balance per Facility

	Total Business Deposit Accounts				Total Business Loan Accounts			
	Model 1a		Model 1b		Model 2a		Model 2b	
Independent Variables	***b***	***s.e.***	***b***	***s.e.***	***b***	***s.e.***	***b***	***s.e.***
Intercept	-10,890,000*	4,245,000	-9,801,000*	4,220,000	-2,456,000**	705,004	-2,325,000**	706
Age of Facility	49,505**	18,097	45,845*	17,969	-4,333	2,848	-4,658	2
Advertising	-410.41	474.42	16.10	489.15	-46.24	74.76	-4.65	7
Total Employees	2,140,000***	158,891	2,243,000***	160,800	388,926***	25,571	398,101***	25
Age of Employees	33,678	96,858	18,380	96,093	36,618*	15,658	35,286*	15
Tenure	210,360	170,368	169,992	169,292	53,120	27,621	48,637	27
Female Percent	-22,885	26,482	-29,394	26,320	1,618	4,367	799.88	4
Household Net Worth	12.45**	4.11	12.67**	4.08	0.71	0.66	0.71	
Household Density[a]	337.83	281.81	266.25	280.14	9.95	44.74	2.37	4
Group			-4,709,000**	1,494,000			-456,500.00	239
ΔR^2				.014				.005
Overall R^2		.309***		.323***		.356***		.360**
Overall model F		26.90***		25.46***		33.137***		30.031*

[a] Number of households in a two mile radius from facilities.

* p < .05; ** p < .01; *** p < .001

Table 4. Results of Regression Analysis for Utilities / Employee per Facility

	Model 1		Model 2	
Variables	***b***	***s.e.***	***b***	***s.e.***
Intercept	2211.05	107.76	2339.43	114.46
Age of Facility	4.58	2.87	3.45	2.86
Group			-675.26	218.30
ΔR^2				.022
Overall R^2		.006		.029**
Overall model *F*		2.56		6.09**

* p < .05; ** p < .01; *** p < .001

FIGURES

Figure 1a. Effect of Interaction between LEED and Time on Total Consumer Deposit Accounts per Branch

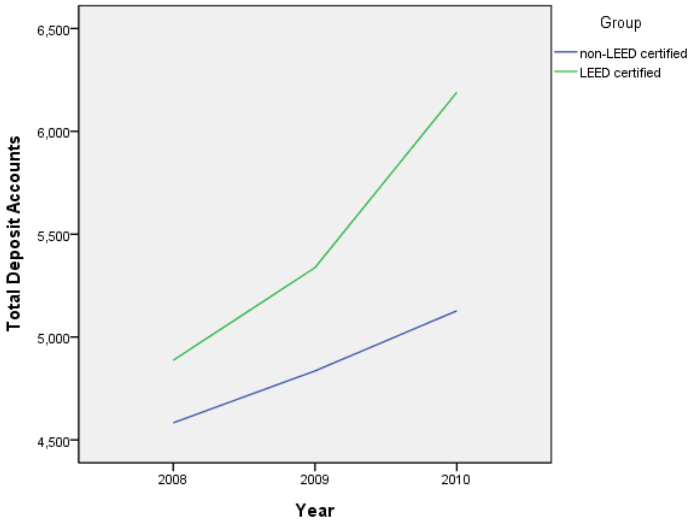

Figure 1b. Effect of Interaction between LEED and Time on Total Consumer Deposit Balance per Branch

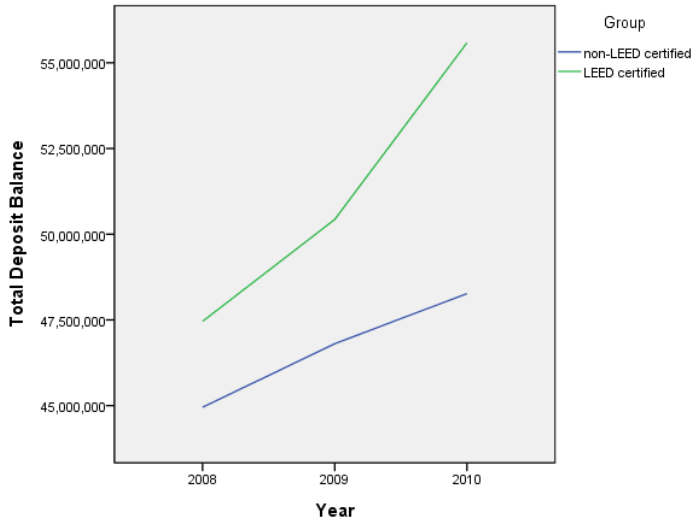

Figure 1c. Effect of Interaction between LEED and Time on Total Consumer Loan Accounts per Branch

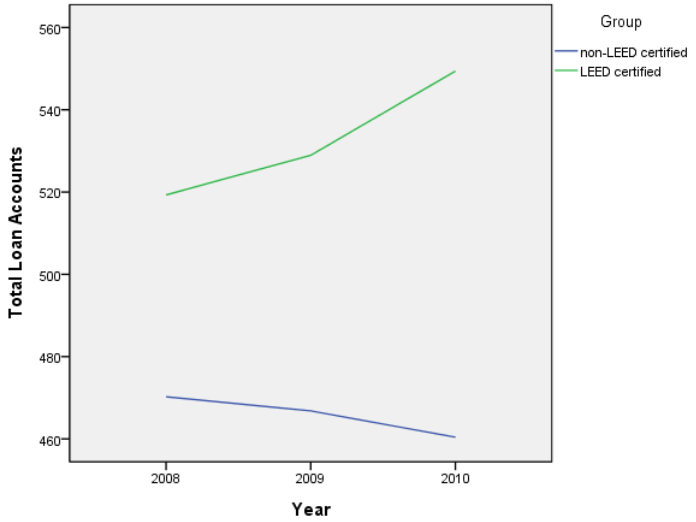

Figure 1d. Effect of Interaction between LEED and Time on Total Consumer Loan Balance per Branch