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IMAGE TRANSFER IN CORPORATE EVENT SPONSORSHIP: ASSESSING THE IMPACT OF TEAM IDENTIFICATION AND EVENT-SPONSOR FIT

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ABSTRACT

Prior research has suggested and found evidence for an event's image being transferred to a brand because of sponsorship activity. This study builds on prior work by examining how the image transfer process is impacted by spectators' level of identification and the degree to which the sponsor and event are perceived to be logically connected (event-sponsor fit). Further, the impact of image transfer on sponsorship related behavioral intentions is assessed. Using two contexts and nine different sponsors our results indicate that high levels of identification and a logical event-brand fit serve to increase image transfer perceptions. Image transfer is also found to predict intentions to purchase from event sponsors. Managerial implications and directions for future research are discussed.

KEYWORDS: Image transfer, event-sponsor fit, transfer perceptions, identification, team identification.

JEL: M31, M37

INTRODUCTION

This paper focuses on improving our understanding of the promotional effectiveness of corporate event sponsorship (i.e., firms sponsoring sporting events, concerts, festivals, etc.). Past sponsorship research has primarily focused on increasing consumer awareness of the sponsoring brand, and has virtually ignored the impact that sponsorship may have on consumers' perceptions of a brand's image (Javalgi et al., 1994). That is, the focus has been on "how many consumers will be exposed to the brand?" and not on "what type of image or message are they being exposed to?" As a result, little guidance has been available for managers seeking to use event sponsorship opportunities to aid in brand positioning.

Despite the increasing popularity of sponsorship for achieving promotional goals, the ultimate effect of sponsorship activities on important customer-related outcomes has been problematic (Clark, Cornwell and Pruitt, 2002; Harvey, 2001; Johar and Pham, 1999). Thjømøe, Olson, and Brønn, (2002) state that "there is much that remains to be learned about how sponsorship works and what makes it effective" (p. 6). Indeed, in an international review of sponsorship research, Cornwell and Maignan (1998) conclude, "research findings on sponsorship effects are ambiguous and often contradictory" (p. 17). Recent research has raised concerns over the efficacy of sponsorship investment. For example, the results of Graham's (1998) research calls into question consumers' long term recall of even title event sponsors (e.g., the *Cadillac* PGA Golf Tournament), while others have expressed concerns that sponsorship clutter (i.e., multiple sponsors being associated with a single event) lessens the effectiveness of the promotion (Pryor, 1999).

While these are valid concerns, this study will argue that positive sponsorship outcomes may be present for different *types* of consumers. Specifically, the primary objective of this study is to examine the extent to which an individual's level of identification and the degree of fit between the event and brand influences the image transfer process. While Gwinner and Eaton (1999) demonstrated the existence of an image transfer process in an experimental setting, this phenomenon has not been studied in a realistic field setting. Given the recent call for more attention to be paid to external validity (Winer, 1999); a second objective of this project is to validate the image transfer process in a field setting. Studying this phenomenon at actual events will provide a context in which multiple brands coupled with the dynamic environment of a realistic setting can be studied. Thus, a field study will provide for a more robust test of the image transfer process. The third objective of this study is to assess the influence image transfer has on purchase intentions toward the sponsoring brand. Largely sponsorship exists to influence customer behavior. However, the link between sponsorship and behaviors or intentions has not been adequately explored in the marketing literature.

The paper is organized as follows. First, we discuss the concept of the image transfer construct. Second, identification and event-brand fit are discussed and hypotheses proposed with regard to their influence on the image transfer process. We also propose relationships between image transfer and consumers' sponsorship-related behavioral intentions. Third, the methodology and analytical procedures are presented. Following a presentation of the results, strategic managerial implications, suggestions for future research and study limitations are offered.

LITERATURE REVIEW AND HYPOTHESES

Image Transfer

A brand's image is defined as the collection of "associations" one holds in memory regarding a brand. These brand associations can take the form of attributes, benefits, and attitudes (Keller 1993). In his early work on brand equity, Keller (1993) suggested that these "associations" are developed from a variety of sources including brand and product category experiences, product attributes, price information, positioning in promotional communications, packaging, user imagery (e.g., typical brand users), and usage occasion. In addition, brand associations can be influenced through celebrity endorsement and sponsorship activities (Keller, 1993). In the case of event sponsorship, "when the brand becomes linked with the event, some of the associations with the event may become indirectly associated with the brand" (Keller, 1993, p.11). This linking of event "associations" to the brand is what is meant by the term "image transfer." That is, the image of the event is being transferred to the image of the sponsoring brand when an individual connects the event's attributes, event's benefits, or attitudes about the event with the brand in his/her memory.

Keller's views are consistent with the theory of meaning transfer that McCracken (1989) uses to explain the celebrity endorsement process. This theory suggests that consumers assign "meaning" to celebrities based upon an individual's interpretation of the celebrity's public image as demonstrated in "television, movies, military, athletics, and other careers" (McCracken, 1989, p. 315). Meaning moves ***from*** the celebrity endorser ***to*** the product when the two are paired in an endorsement capacity (McCracken, 1989). Consumption of the endorsed product then transfers this meaning to the consumer, which, presumably, is a motivating force in the individual's decision to select and purchase the endorsed product.

One can logically extend this concept to a sponsorship context where the meanings (or associations in Keller's terminology) held with respect to an event are transferred to a sponsoring brand, thus providing those consumers who are favorably disposed toward those meanings a reason to purchase the sponsoring brand. Sporting events can develop meaning or associations from the type of sporting event (e.g., football versus ice-skating), the event's characteristics (e.g., professional status, venue, size, etc.), and individual consumer factors such as one's past experiences with the event (Gwinner, 1997).

While some sponsorship research has explored changes in attitudes toward the company or changes in corporate image perceptions (Javalgi et al., 1994, Stipp and Schiavone, 1996), supporting evidence for an event to brand *image transfer process* is very limited. Gwinner and Eaton (1999) who proposed and found support for an event's image being transferred to a sponsoring brand because of their pairing in a sponsorship arrangement provide the only empirical support for this transfer process to date. While their study provides some guidance to brand managers for brand positioning decisions, three limitations of that research restrict its applicability. Specifically, (1) because their research uses an experimental lab setting the external validity of the findings are unknown, (2) they do not attempt to explore how the image transfer process may change for different "types" of respondents or different types of sponsors, and (3) their research did not assess the impact of image transfer on outcomes important to brand managers, such as purchase intentions. Our study seeks to overcome these three limitations by examining the impact of the image transfer process on consumer purchase intentions in a variety of real sporting event contexts using actual spectators. Further, we examine the influence that a consumer's level of team identification and the event-brand fit may have on the image transfer process.

Team Identification

Until recently, the study of identification has primarily focused on interpersonal cohesion (interdependence or similarity). In general, theories of how individuals relate to groups were believed to fall into two camps (Turner, 1987). The first camp argues that group cohesion is dependent upon intra-group interdependence. That is, group members need one another. The second argument contends that groups are a collection of individuals who are interpersonally attracted to each other. Recently, researchers have argued that group evaluation is a distinct process from that of interpersonal interdependence or attraction (Hogg and Turner, 1985).

Sociologically, sport teams are groups to which individuals relate. Turner (1987, p. 2) describes a group as "one that is psychologically significant for the members to which they relate themselves subjectively for social comparison and the acquisition of norms and values...which influences their attitudes and behaviors." A spectator is said to be highly identified with a team when they perceive a "connectedness" to the team and feel that the team's successes and failures are also his or her successes and failures (Ashforth and Mael, 1989; Hirt et al., 1992; Wann and Branscombe, 1992; Wann et al., 1994). As such, team identification is a more specific instance of organizational identification (Mael and Ashforth, 1992). Naturally, there are large variations in the extent to which individuals identify with teams ranging from low identified fans to fans that identify highly with the team. Spectators falling on different points of the identification spectrum also act differently toward the team. Low identified fans are likely attracted to the team for the entertainment value and opportunity for social interaction. These fans have little emotional or financial commitment to the team (Sutton et al., 1997). In contrast, highly identified fans display long-term loyalty to the team and support the team through both their time and financial commitments (Sutton et al., 1997).

Identification with a particular group can serve to increase one's self-esteem (Hogg and Turner, 1985; Tajfel, 1978). In order to accomplish this self-esteem enhancement, the individual must be able to identify group members (in-group) from non-group members (out-group). "To the extent that the in-group is perceived as both different and better than the out-group, thereby achieving positive distinctiveness, one's social identity is enhanced" (Abrams and Hogg, 1990, p.3). Indeed, the distinctiveness of an organization, how clearly one group is distinguished from other groups, has been shown to be a significant predictor of organizational identification (Mael and Ashforth, 1992). Self-esteem is enhanced by individuals associating themselves with groups they perceive in a favorable way (Cialdini et al., 1976). More specifically, self-esteem enhancement is accomplished by focusing on the positive elements of the in-group and downplaying their negative aspects (Wann and Branscombe, 1995a, 1995b). Further, emphasizing negative information, and downplaying the positive, among out-groups can similarly contribute to one's self-esteem by elevating the status of the in-group relative to the out-group (Branscombe and Wann, 1994). Thus, one's sense of self is enhanced by membership in the group with positive elements and by not having membership in the group with negatively perceived elements (Wann and Branscombe, 1990). As such, self-esteem maintenance serves as a motivation for highly identified individuals to discriminate between in- and out-group members.

In a sporting context, in-group membership can extend beyond the actual athletes on a team to include a team's coaches, administrators, and even fans; whereas out-group membership may be assigned to fans and employees (players, coaches, etc) of rival teams. It is logical to conclude that in a sport sponsorship context, highly identified fans will extend in-group membership status to brands that sponsor an event or team, because the sponsor is perceived as aiding the team / event in accomplishing its goals (Madrigal, 2000; 2001). Individuals in a sporting context are likely to be especially aware of in-group and out-group membership because inter-group competition (as in sports) has been shown to heighten sensitivity to identifying group membership (Brown and Ross, 1982). Highly identified individuals are more concerned and active (than low identification individuals) in differentiating between in-group and out-group members (Abrams and Hogg, 1990; Wann and Branscombe, 1995a).

We propose that the heightened sensitivity exhibited by highly identified fans to in-group and out-group membership will make them more likely to (1) hold a strong image of the event in their mind, and (2) recognize sponsors of the event. This should aid in the image transfer process in two ways. First, a stronger image of the event will better enable it to be transferred than a weaker image (Keller, 1993). That is, there must *be* an image of the event in the consumer's mind before it can be associated with a sponsor. Highly identified fans have been shown to possess greater objective knowledge about sports and particular teams (Wann and Branscombe, 1995b) and thus are likely to have made stronger connections regarding the event's image in their memory. Second, image transfer requires not only an image of the source of the transfer (event), but also a target (sponsoring brand) to which it can be transferred. As such, an accurate recall of whom the sponsors are (and are not) will increase the success of the image transfer process. On this second point, sponsor recognition has been shown to be higher among highly identified fans (Lascu et al., 1995) and Ashforth and Mael (1989) suggest that "awareness of out-groups reinforces awareness of one's in-group" (p. 25). As such, sponsors in-group status should also aid highly identified fans in correctly recognizing event sponsors, which will have a positive influence on the image transfer process.

> H1: Image transfer in sponsorship will be significantly higher for high-identified fans compared to low identified fans.

<u>Fit Between Event and Sponsoring Brand</u>

Fit, or congruence between objects, is an often-studied phenomenon in the marketing literature. Past research has examined fit in such contexts as a brand and a proposed brand extension, celebrity endorsers and the endorsed goods, and even a brand's name and its country of production (e.g., Häubl and Elrod, 1999; Kahle and Homer, 1985; Kamins, 1990; Lynch and Schuler, 1994; Mirsa and Beatty, 1990; Park, Milberg, and Lawson, 1991; Till and Busler, 2000). The interest in this topic is justifiable because the similarity between two stimuli influences the degree to which knowledge and affect are transferred between the objects (Martin and Stewart, 2001). Given that image transfer is often a goal in sponsorship decisions, a more complete understanding of how event – sponsoring brand fit may influence the image transfer process is needed.

There has been much speculation and empirical assessment in examining brand-event fit in sporting contexts. Meenaghan (2001) reports that focus group participants were able to discern congruence between some event – sponsor parings, this assessment is based on there being a "logical connection between both parties to the relationship (i.e., sponsor and sponsored activity)" (p. 105). In a recent study examining fit in a sponsorship context it was found that image transfer between event and sponsoring brand was enhanced when respondents perceived either a functional (brand is used in the event) or image based (abstract perceptions) similarity to exist between the event and brand (Gwinner and Eaton, 1999). Using a more generalized measure of event-sponsor fit and a student sample, Speed and Thompson (2000) found a positive relationship between degree of fit and respondent interest in the sponsor, attitude toward the sponsor, and intention to use the sponsored product. Other research has found fit between brand and sport to be positively associated with the perceived personality match between the two (Musante, Milne and McDonald, 1999).

The rationale for Hypothesis 2 is based on the theory of associative memory. Under this framework, one's memory is represented as a series of concepts or nodes that are linked together with ties of varying strength (Anderson, 1983). As discussed earlier, Keller (1993) uses this framework to suggest that the concepts associated with an event can become linked in memory with a brand through sponsorship activities. However, the ease to which an individual processes, encodes and links these concepts is higher when there is a perceived similarity between the concepts (Meyers-Levy and Tybout, 1989). This perspective is consistent with the schema theory based argument for endorser – brand fit advanced by Misra and Beatty (1990). To explain the better recall of respondents in their "congruent" condition, they propose that inconsistent information is filtered out and not brought into memory as well as consistent information (Misra and Beatty, 1990). If the same process holds true for image transfer, then we would expect that when the event and sponsoring brand are more congruent, the task of encoding and linking their respective meanings would be easier for the individual to accomplish. The result is an increasing level of image transfer between the event and sponsoring brand.

> H2: Image transfer in sponsorship will be significantly higher among those individuals who perceive a good fit between the event and the sponsoring brand compared to those who perceive a poor fit.

<u>Sponsorship Outcomes</u>

Madrigal (2000) examined fans' purchase intentions toward sponsoring brands in relation to perceptions of group norms and team identification. His results indicate that favorable purchase intentions are associated with higher levels of team identification, and when such activity is perceived as important to others group members (norms). Our study also investigates purchase intentions, but we are interested in the impact of image transfer. As mentioned earlier, one drawback of earlier research on image transfer is that it has not examined the important linkage between a brand acquiring image components of the event and the impact on sales. We propose that when sport spectators' favorable associations of the event are transferred to the brand, it will increase the intention to purchase goods from the sponsoring firms.

> H3: Greater levels of image transfer between event and brand will be associated with greater intentions to purchase sponsored products.

METHODOLOGY

Walliser (2003) recently lamented the limitation of the large number of studies using student samples in sports marketing research. Indeed, this has been a limitation of studies found in leading marketing journals and in the more specific area of image transfer as well. As Winer (1999) notes, "Rarely does an author of an experimental study either worry about how to establish external validity for the results or actually perform additional studies that go a long way toward establishing some degree of external validity" (p. 349). As a result, this paper strives to use actual attendees at actual sporting events to add a degree of external validity that has been lacking in other studies.

More specifically, our sample consisted of ticket holders for three football games (2 NFL games and 1 NCAA division 1 school). Participants completed our battery of survey items as they tailgated before the game (college sample) or as they attended a team sponsored fan event just outside the stadium (NFL samples) in the hours before the start of the contest. The collegiate research sample was collected in 1995 from a Conference USA member university, while the NFL samples were drawn from the Eastern National Football Conference in 1996. The research samples were collected at the start of the season for each of the three teams. Additionally, as suggested by Madrigal (2001), our study used actual sponsoring brands rather than fictional ones. Three sponsoring brands in each context were assessed in terms of the degree to which the event's image had transferred to the brand.

Data Collection Methods

Adult spectators at an afternoon university football game of a major NCAA Division I conference served as the sampling frame for the college sample. Information provided by the university athletic department and verified by field observation suggested that different areas around the football stadium were likely to contain certain homogeneous groups. Surveys were distributed prior to the game in designated parking and tailgating areas surrounding the football stadium in order to obtain a more representative sample. The areas designated for the visiting team's fans were not surveyed. One-thousand-seventy subjects were approached, 922 of which agreed to participate in the study for a response rate of 86.2%. Forty-one of the surveys were found to be incomplete or had obvious acquiescence bias and were discarded resulting in 881 usable questionnaires. Respondents ranged in age from 18 to 76 years (mean = 32.7), with males making up 59.7% of the sample (n = 526). Subjects included current university students (26.4%), alumni (42.7%), and general spectators (30.9%).

On two separate game days, adult ticket holders attending a NFL team sponsored fan appreciation event just outside of the home team's stadium (prior to the start of the game) were approached and asked to participate in the survey. Six-hundred-twelve usable questionnaires were collected (n_{NFL1} = 289; n_{NFL2} = 323). Respondents ranged in age from 18 to 72 years (mean = 32.8), with males making up 69.7% of the sample. Subjects included predominately high school graduates (44%) and those with college degrees (46%).

Measures

Rather than attempt to track the flow or process involved in the image transfer, we follow the approach used by Gwinner and Eaton (1999) which examines the congruency between the image of the event and the image of the sponsoring brand. The logic of this approach is that more congruent event-brand images are indicative of an image transfer having taken place, while less congruent images indicate a lower level of image transfer (i.e., the image of the event has not transferred to the image of the brand because the two images are dissimilar). As such, the *result* of the image transfer is assessed, rather than the *process* of it taking place. Accordingly, image transfer was assessed using a measure of image congruency from Sirgy et al. (1997) that had been successfully used in the Gwinner and Eaton (1999) study. It consists of asking respondents to imagine the experiences they will encounter at the event and then to think of adjectives that describe the image of the sporting event. Following this mental exercise, a single item congruency question is asked with respect to each sponsor (e.g., "My image of __ football is consistent with my image of [name of sponsor]"), measured on a seven point Strongly Disagree (1) to Strongly Agree (7) scale. Higher values indicate greater image transfer. Following Bhattacharya, Rao, and Glynn (1995), we assessed team identification by using Mael and Ashforth's (1992) 6-item identification measure.

Fit was assessed between the event and the sponsoring brand only in the two NFL samples, using a single item from Speed and Thompson (2000), "There is a logical connection between ___ football and [name of sponsor]." This question was assessed on a seven-point Strongly Disagree (1) to Strongly Agree (7) scale, higher values indicating greater perception of fit. While some authors have discussed different dimensions of fit between events and brands in a sporting event context (e.g., Gwinner, 1997, McDonald, 1991, Musante, Milne, and McDonald, 1999), we used this non-specific measure in order to allow the respondent to determine in his or her own mind what dimensions were relevant with respect to fit.

Purchase intentions toward sponsoring brands *in general* were assessed using two items developed for this study ("When you shop for products and services, how often do you purposely look for those sold by sponsors of ____ football?" and "In general, how much does the fact that a firm is a sponsor of ___ football enter into your buying decision when you are shopping for products?"). The first purchase intention items utilized a seven point "Never" (1) to "Often" (7) scale, while the second item was assessed using the end values "Weak influence" (1) and "Strong influence" (7). As such, higher values indicate stronger purchase intentions. In addition, in the second NFL data collection, we asked questions that measured purchase intentions directed toward *specific* sponsors (e.g., "The next time you need sporting goods, how likely are you to purchase from [name of sponsor]?"), rather than the intention to purchase from sponsors in *general* described above.

RESULTS

To test hypothesis 1, that image transfer will be significantly higher for high identified fans compared to low identified fans, we used one-way ANOVAs with a between groups design. Specifically, we trichotimized the identification variable in each context such that approximately a third of the subjects fell into each identification category: high (n_{NCAA} = 280; $n_{NFL\ I}$ = 88; $n_{NFL\ II}$ = 109), medium (n_{NCAA} = 298; $n_{NFL\ I}$ = 90; $n_{NFL\ II}$ = 105), and low (n_{NCAA} = 303; $n_{NFL\ I}$ = 96; $n_{NFL\ II}$ = 109). This category assignment was used as the between groups predictor variable. The criterion variable in each test was the image transfer score for each sponsor (three sponsors were assessed for each context, resulting in nine ANOVAs). Each of the one-way ANOVAs was significant at $p < .001$ and specific between group differences were then assessed using Tukey's HSD test. The Tukey HSD test indicates that across all sponsors and contexts, image transfer is significantly stronger for high-identified fans compared to low identified fans (these results are summarized in Table 1).

Table 1: Image Transfer by Level of Team Identification

	Level of Identification					
	High		Medium		Low	
	Mean	SD	Mean	SD	Mean	SD
NCAA Football Game						
US Cellular*	5.5	1.6	4.7	1.7	4.2	1.8
Pepsi*	5.6	1.6	4.8	1.8	4.2	1.9
WITN News*	4.6	1.7	4.1	1.7	3.4	1.7
NFL Football Game 1						
Chrysler*	5.3^{a}	1.8	4.9^{a}	1.5	4.2	1.9
Dunkin Donuts*	5.8	1.4	5.0	1.6	4.1	1.8
MBNA*	5.7	1.5	5.0^{a}	1.7	4.4^{a}	1.9
NFL Football Game II						
Chrysler*	4.2^{a}	2.1	3.8^{ab}	1.8	3.2^{b}	1.9
Modell*	4.8^{a}	1.9	4.8^{a}	1.5	3.7	1.9
Penn Orthopedic*	4.6^{a}	2.1	4.1^{a}	1.8	3.3	2.0

*This table provides ANOVA results regarding the image transfer score for each sponsor by level of identification. For each level of identification (i.e., high, medium, low) the first figure is the mean and the second figure is the standard deviation for the specific sponsor noted in the row. Significance at the .001 level is denoted as *. Within a row, image transfer means sharing a superscript are not significantly different at the 5 percent level based on Tukey's HSD post-hoc test.*

To test hypothesis 2, that image transfer in sponsorship will be significantly higher among those individuals who perceive a good fit between the event and the sponsoring brand compared to those perceiving a poor fit, we again used one-way ANOVAs with a between groups design.
In this case, we created two groups for each sponsor based on the fit variable to be as close in size as possible (i.e., half the sample in the good fit group and half of the sample in the poor fit group). This

category assignment was used as the between group predictor variable: good fit (coded as 2) and poor fit (coded as 1). As in the test of hypothesis 1, the criterion variable in each test was the image transfer score for each sponsor (this test was only done for the two NFL samples, as the fit variable was not measured in the NCAA sample). Each of the one-way ANOVAs was significant at $p < .001$ and specific between group differences were then assessed using Tukey's HSD test. The Tukey HSD test indicates that across all six NFL sponsors and both contexts, image transfer is significantly stronger among those that perceive a strong fit between the sponsor and the event (these results are summarized in Table 2).

Table 2: Impact of Perception of Event-Brand Fit on Image Transfer

	NFL Football Game I						*NFL Football Game II*					
	Chrysler*		Dunkin Donuts*		MBNA*		Chrysler*		Modell*		Penn Ortho.*	
Degree of Fit	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Strong Fit	5.8	1.3	5.7	1.3	5.8	1.4	4.5	1.8	5.1	1.7	5.0	1.8
	n = 123		n = 133		n = 139		n = 159		n = 172		n = 142	
Weak Fit	4.1	1.7	4.3	1.8	4.3	1.8	3.0	1.9	3.7	1.8	3.2	1.8
	n = 166		n = 154		n = 148		n = 164		n = 151		n = 178	

*This table provides ANOVA results regarding the image transfer score for each sponsor by the perceived fit between the event and each sponsoring brand. For each degree of fit (i.e., strong, weak) the first figure is the mean and the second figure is the standard deviation for the specific sponsor noted in the column. The number of respondents classified as indicating strong- or weak-fit are provided (i.e., n =). Significance at the .001 level is denoted as *. Tukey HSD post hoc tests indicated that for all six NFL sponsors the image transfer score is significantly higher (at the 5 percent level) for respondents that perceived a strong fit between the sponsor and the event.*

Finally, hypothesis 3, which examines the impact of image transfer on respondents sponsorship related behavioral intentions, was examined with regression analysis. Following the wording of our sponsorship outcome measures, this hypothesis was tested using both general sponsor and specific sponsor outcome measurements.

For the *general* sponsor assessment, in each context we summed the image transfer scores of the three sponsors and then used this summed score as an independent variable in a regression equation to predict the general outcome measure. The general outcome measure was operationalized by summing the two items: "When you shop for products and services, how often do you purposely look for those sold by sponsors of ____ football?" and "In general, how much does the fact that a firm is a sponsor of ____ football enter into your buying decision when you are shopping for products?." The results indicate a significant, positive influence of general image transfer on general sponsorship outcomes for all three regressions (one for each context): NCAA context ($F_{1,857} = 171.8$, p<.0001, standardized beta = .41, $R^2 = .17$); NFL 1 Context ($F_{1,285} = 69.5$, p<.0001, standardized beta = .44, R2 = .20); NFL 2 context ($F_{1,316} = 71.6$, p<.0001, standardized beta = .43, $R^2 = .18$).

For the *specific* sponsorship outcomes, we also regressed image transfer on an outcome measure, but in this case, we examined the image transfer of a specific brand relative to the purchase intentions of that same brand. This data was collected for each of the three sponsors in the NFL 2 context. Similar to the general outcome results, we find a significant, positive influence of image transfer on specific sponsorship purchase intentions for all three regressions (one for each sponsor): Chrysler ($F_{1,322} = 103.3$, p<.0001, standardized beta = .49, $R^2 = .24$); Modell's ($F_{1,321} = 65.4$, p<.0001, standardized beta = .41, $R^2 = .17$); Penn Orthopedics ($F_{1,320} = 113.1$, p<.0001, standardized beta = .51, $R^2 = .26$).

The primary purpose of this study was to examine the extent to which team identification and degree of fit between event and brand influences the image transfer process outside an experimental setting. Our results indicate that, consistent with our hypotheses, those having a higher level of team identification and those perceiving a stronger fit between brand and event reported a higher level of image transfer between the event and the brand.

In addition, our results support the hypothesis that higher perceptions of image transfer are associated with higher levels of purchase intentions for sponsoring brands. One reason these results are important is that they extend Gwinner and Eaton's (1999) earlier experimental lab research by finding these relationships in a field setting using real sponsors, real events, and actual attendees. As Winer (1999) has previously pointed out, "it is incumbent on us to be concerned about the generalizability of research results beyond the lab into other contexts," (p. 349).

In addition to establishing robustness of the relationship, there are two primary contributions from this study. First, we have identified boundary conditions (identification and fit) where the level of image transfer is impacted. As we discuss subsequently, this has substantial consequences for both event and brand managers making sponsorship-related decisions. The second major contribution of this study is empirically linking image transfer with consumer buying intentions. Understanding the impact of sponsorship on consumer buying behavior is a long neglected area in sponsorship research.

Implications for Management

Several implications can be drawn from the results of this study that have relevance to brand managers' sponsorship decisions or to the managers of events that seek sponsorship. One of the most important implications is that *image matters*. That is, brand managers cannot be concerned only with exposure issues (i.e., number of attendees in the target market, size of the television audience, etc.); they must also be cognizant of the image that the event projects because this image will be transferred to the sponsoring brand. As such, in considering events for potential sponsorship, firms should make an effort to understand event image through the eyes of those market segments the brand is trying to reach. Indeed, it may actually be counterproductive to gain a high degree of customer exposure through event sponsorship if the event's image is inconsistent with the brand's positioning goals.

A second managerial implication from this study deals with the notion of market segmentation. Because highly identified fans were found to be more receptive to image transfer, it would be beneficial to segment the market into high and low identified fans. If this can be done (and it is likely to be more efficient to do this at an aggregate level rather than an individual level), then sponsoring brands could strategically customize the type of message aimed at each segment. For example, highly identified fans might be exposed to messages emphasizing the in-group status of the sponsor. Relatedly, from a brand's sponsorship selection standpoint, the number of highly identified fans that view or attend the event could be used as part of the selection criteria. Presumably, if a brand manager were deciding between sponsoring one of two events, all else equal, our results suggest that the event having a larger highly identified participant base would be the better choice.

If image transfer is a goal of the sponsorship, the results of our study point to the importance of there being a logical connection between the event and the sponsoring brand (in the mind of the consumer). As with identification, event-brand fit could be used as part of a brand's sponsorship selection criteria. All else equal, an event having a better fit with the brand would be considered a better choice between two competing sponsorships. The fit results also suggest that the level of image transfer can be increased if the brand takes steps to actively encourage fans to "see the fit" between the event and the sponsoring brand. Obviously, some event-brand pairings have an obvious basis for a logical connection (e.g., Valvoline sponsoring NASCAR racing or Gatorade sponsoring the Ironman Triathlon). However, for those events where the association is not as clear, the sponsoring brand may need to take steps to activate its sponsorship. One way to do this is to create promotional materials that help consumers to understand the connection. For example, Timex sponsoring the Kentucky Derby may not have a logical connection for many consumers, but a connection can be explained by promoting the watch brand as the official timer for the event.

This study also holds implications for managers of events. Event manager's seeking to retain current sponsors or acquire new ones could emphasize how the image of the event supports the current or potential sponsor. This implies that events must not only manage, but also be able to articulate the image they are capable of transferring, which would suggest an empirical study of what the event's image is among its various constituents. Additionally, the notion of a logical connection or fit can be used to develop prospect lists when an event is attempting to solicit new business. Perhaps most importantly from a sponsorship selling perspective, the current study allows an event to point to empirical evidence of how sponsorship positively shapes consumer's purchase intentions. Even more convincing would be for an event to develop this information relative to its own particular participants and then use that information when soliciting new sponsorship arrangements.

Limitations and Implications for Future Research

As with all studies, there are limitations that should be considered when interpreting these results. First, this research utilized multiple sport context samples. Although sports are a natural area of sponsorship, this focus may restrict the generalizability of the findings reported. Understanding how this study translates into events outside of a sporting context should be investigated in future research. Are the same relationships present as the sponsorship moves to an arts or music event context? Another limitation is that our study does not consider longitudinal issues. As such, also of interest for future research is the extent to which the longevity of the sponsorship influences the image transfer process. While it may sound logical to assume that long term associations will increase image transfer, this should be explored. Is there a point where the transfer is complete? That is, from an image transfer perspective, is there some level of saturation where no additional image transfer will take place?

While this study addresses many questions and fills some gaps from prior studies, it also raises many questions. One question relates to event-brand fit. So far, fit has been defined in the literature as a logical connection. This definition could be made more specific. Interesting questions to consider include the following. Are there different types of fit (e.g., image based, usage based, etc.)? Do some types of fit influence image transfer more than other types of fit? Can fit be taught to consumers if the fit is not obvious? Is fit conveyed equally well by the sponsor as by the event marketer? Additionally, some recent research has explored sport identification's influence on perceptions of event-sponsor fit (Gwinner and Bennett 2008). Future studies could explore this relationship as it relates to image transfer.

Event sponsorship has moved from primarily philanthropic activities to mutually advantageous business arrangements between sponsors and the sponsored. The objectives being sought by sponsoring organizations are focusing more and more on exploitable commercial potential and bottom-line results, and less on altruism or a sense of social responsibility without expectation of return. With this recognition comes an increased importance on identifying how to use event sponsorship opportunities to aid in brand positioning and creating tangible behavioral outcomes. Additional research such as that presented here is needed to improve our understanding of the promotional effectiveness of corporate event sponsorship.

APPENDIX

Sample Questions

Image Transfer (Gwinner and Eaton, 1999)
Take a moment to think about __________________ football. Think about the various images and experiences you would encounter when you attend or watch a ________________ football game. Imagine this sporting event in your mind and think about words you would use to describe the event such as, exciting, tradition, young, conservative, rugged, or whatever words you think describe the image of this sporting event.
Once you have done this, indicate your agreement or disagreement with the following statements by circling the appropriate number:
My image of ______________ football is consistent with my image of [insert name of sponsor here].[1]

Team Identification (Mael and Ashforth, 1992)
When someone criticizes _____________ football, it feels like a personal insult[1]
I am very interested in what others think about ______________ football[1]
When I talk about the ________________, I usually say "we" rather than "they" [1]
The ____________ successes are my successes[1]
When someone praises the ____________, it feels like a personal complement[1]
If a media story criticized the __________, I would feel embarrassed [1]

Fit (Speed and Thompson, 2000)
There is a logical connection between ____________ football and [insert name of sponsor here]. [1]

General Purchase Intentions
When you shop for products and services, how often do you purposely look for those sold by _____________ football sponsors? [2]
In general, how much does the fact that a firm is a sponsor of ___________ football enter into your buying decision when you are shopping for products? [3]

Specific Purchase Intentions
The next time you need [insert product/service associated with sponsor], how likely are you to purchase from [insert name of sponsor here].[4]

Demographics
Gender? □ Female □ Male
Age in Years? ____
How would you best classify yourself? □ University Student □ Alumni □ General Spectator (used with NCAA questionnaire)
Highest level of education completed? ____ (used with NFL questionnaires)

[1]7-point Strongly Disagree (1) to Strongly Agree (7) response scale. [2]7-point Never (1) to Often (7) response scale. [3]7-point Weak Influence (1) to Strong Influence (7) response scale. [4]7-point Very Unlikely (1) to Very Likely (7) response scale. Sponsors (NCAA = US Cellular, Pepsi, WITN News; NFL I = Chrysler, Dunkin Donuts, MBNA; NFL II = Chrysler, Modell, Penn Orthopedic) were all measured in regards to image transfer, fit was assessed between the event and the sponsoring brand for the two NFL samples, and purchase intentions directed toward specific sponsors were measured only in the second NFL questionnaire. Each sponsor name was provided for the image transfer, fit, and specific purchase intentions questions in the area noted as [insert name of sponsor here] in the above table.

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MARKETING MIX AND BRANDING: COMPETITIVE HYPERMARKET STRATEGIES

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ABSTRACT

Super-centers and hypermarkets are increasing in the retail markets. To determine customer-based brand equity (CBBE), a proportionate market share and a gender-balance hypermarket shopper sample was collected. Using t-Tests for gender to the marketing mix and CBBE, female shoppers consistently have higher mean scores. However, only distribution intensity, brand association and total brand equity were significantly higher than males. But men feel that their hypermarkets were higher priced than women were. Retail marketing mix elements and CBBE dimensions were further analyzed for similarities between genders. As well, each hypermarket results are presented. This study concludes with the marketing implications, study limitations and future research opportunities.

KEYWORDS: Customer-based brand equity, marketing mix, market share

JEL: M31

INTRODUCTION

Retailers, as well as consumer product manufacturers, have continued to be confronted with increasing competitive markets. As a result, these manufacturers are adding product categories, e.g., Procter & Gamble acquiring Gillette, and retailers expanding, e.g., Wal-Mart acquiring ASDA (in the United Kingdom). At the same time, other manufacturers are refocusing and narrowing product categories, e.g., Unilever reducing more than 1,600 brands to about 500, and retailers consolidating, e.g., K-Mart and Sears, Roebuck and Company merger. These are major strategy changes for some of the largest global companies and best-known products. Regardless of the approach, these companies and products will be successful if they stay true to being differentiators, low cost leaders or nichers (Porter, 1980) in serving markets.

Strategies that are successful identify and achieve an unserved or underserved position in the marketplace. Positioning or repositioning may occur with products or retail stores (Kerin, Hartley, Berkowitz and Rudelius, 2006). Branding, also, plays a major role in positioning. Position strength includes well developed value propositions, e.g., identifying a broad yet specific value proposition, and well developed brand, e.g., brand name, strong brand associations and promises, and managing customers' brand contacts (Kotler, 1999). Specific to marketing, strategies are based on segmenting, targeting and positioning (Kotler and Keller, 2006).

For decades, segmentation has been a marketing tool. Marketing activities require "precise utilization of both product differentiation and market segmentation as components of marketing strategy" (Smith, 1956, p. 7) in which the segment must be large enough to be profitable. Furthermore, markets may be segmented on the bases of geographic, demographic, psychographic and behavioral methods (Kotler and Armstrong, 2008). Targeting is merely the selection of specific segment(s), e.g., gender or age, or males or females in a demographic segment. Consumer product manufacturers and retailers "must decide on a value proposition – on how it will create differentiated value for targeted segments and what position it wants to occupy in those segments" (Kotler and Armstrong, 2008, p. 203). Jack Trout reminds marketers of Walter Landor's statement that "(p)roducts are created in the factory, but brands are created in the mind" (2005, p. 28). Brands, therefore, are created by having the appropriate marketing mix – product, price, place, promotions (McCarthy, 1960) – to support (connected with) the positioning strategy in the minds of the target market in comparison to competing brands (Kotler and Armstrong, 2008).

Since Smith's (1956) market segmentation and McCarthy's (1960) marketing mix concepts appeared, consumer markets have changed significantly for product manufacturers and retailers. Consumer trends and their expectations have included the (1) acceleration of socio-economic change, (2) increase of mass distribution, and (3) rise in their influence on retail change (McNair and May, 1978). For example, during this timeframe Wal-Mart has evolved from a small variety store in Rogers, Arkansas in 1962 to the world largest retailer with revenues of $344 billion, with 6,500 stores and 1.9 million employees in 15 international countries by 2007. Much of Wal-Mart's success is the strategy of "understanding of what consumers want from a retailer" (Wal-Mart, 2008), which is reflective by Wal-Mart's growth and success. Wal-Mart, as a general merchandise retailer, clearly offers convenience or one-stop shopping (mass distribution) and competitive pricing or everyday low prices (consumer influence), adapting to a changing consumer market.

Moreover, socio-economic factors influence consumers shopping and preference. For such changes and its impact on consumer marketing, Penn identifies microtrends as "an intense identity group, that is growing, which has needs and wants unmet by the current crop of companies, markets, policymakers, and others who would influence society's behavior" (2007, p. xx). Consumer drivers influencing these microtrends have been a result of: (1) Both spouses work and have their own careers, some even geographically apart from the other; (2) Husbands shop for food and clothing while wives purchase durable goods, automobiles and other major (high priced) products; (3) Single parenting has greatly increased; (4) Households have more non-married couples with shared living arrangements with the opposite or same gender; and (5) Men and women are waiting longer to marry, or not marrying at all. Furthermore, people have many interests that are more varied and activities in addition to work that lead to busy, hectic schedules that has created a dynamic consumer market. Socio-economic factors continue to influence who and where consumers shop and what consumers purchase.

The purpose of this research is to determine the marketing mix and branding relationship as perceived by each gender. The objective is to identify and analyze the comparative links between gender (male, female), the marketing mix (product, price, place, promotions) and retail brand equity (brand loyalty, brand awareness, perceived quality, brand association). This study is to determine: Are there significant differences between genders' perceptions of retail stores' marketing mix that contributes to greater brand equity? This article reviews the marketing mix and branding theoretical and empirical literature, data and methodology, and the study's findings, implications and conclusion.

REVIEW OF THE LITERATURE

Prior to the marketing mix model, marketing managers were confronted with many different marketing activities to manage independently and separately (Alderson, 1957). Actually Neil Border may have been the first (in the late 1940s) to advance the marketing mix concept in his teaching and business consulting. Not until the mid-1960s did Borden publish his model in which he identified the marketing mix elements and the market forces. First, the elements included product planning, pricing, branding, channels of distribution, personal selling, advertising, promotions, packaging, displays, servicing, physical handling, and fact-finding and analysis. Second, the market forces were consumers' buying behavior, the trade behavior, competitors' position and behavior, and government behavior – controls over marketing (Borden, 1965). However, McCarthy (1960) gets the credit for the marketing mix model – product, price, place (channels of distribution), promotion – that remains widely used by practitioners and scholars today.

Brand equity is “a set of brand assets and liabilities linked to a brand, its name and symbol, that add to or subtract from the value provided by a product or service to a firm and/or to that firm’s customers” (Aaker, 1991, p. 15). Five dimensions of brand equity are brand loyalty, brand awareness, perceived quality, brand association and other propriety brand assets (Aaker, 1991). The importance of brand equity is (1) for financial value for merger, acquisition or divestment and (2) to improve marketing strategy and productivity (Keller, 1993). Brand equity theory (Aaker, 1991) was further developed to include a consumer’s perspective (Keller, 1993). Keller defines customer-based brand equity “as the differential effect of brand knowledge on consumer response to the marketing of the brand” (1993, p. 2). This brand knowledge includes brand awareness (brand recall and recognition) and brand image (types, favorability, strength and uniqueness of brand associations). Keller concludes, “consumer-based brand equity occurs when the customer is aware of the brand and holds some favorable, strong, and unique brand associations in memory” (1993, p. 17). Furthermore, branding and brand management are applicable to retail brands, e.g., retail and store image, perceived retail brand association, as well as to retail brand equity measurement (Ailawadi and Keller, 2004).

Lassar, Mittal and Sharma (1995) in an early study of customer-based brand equity (CBBE) measurement identified five constructs. These include performance, social image, value, trustworthiness and attachment. Yoo, Donthu and Lee (2000) consolidated these five, and used three measures to test CBBE. The researchers measured perceived quality, brand loyalty and brand awareness/association (as one construct) in a three product (athletic shoes, camera film and television sets) study. Yoo et al. (2000) did recognize the marketing mix elements (marketing efforts) as antecedents of brand equity, and operationalized the marketing mix as (1) price, (2) advertising spending, (3) price deals, (4) store image and (5) distribution intensity.

Pappu, Quester and Cooksey (2005) challenged, and tested the combining of brand awareness and brand association. First, Pappu et al. (2005) used two products (cars and television sets), and then for retailer CBBE (Pappu and Cooksey, 2006). Both studies successfully tested CBBE. This retailer CBBE study will use the four construct measures of: (1) brand loyalty, (2) brand awareness, (3) perceived quality and (4) brand association (Pappu et al., 2006). However, unlike Yoo, Donthu, and Lee (2000), neither (Pappu et al., 2005; Pappu et al., 2006) study tested the marketing mix and CBBE relationship. For this study, the customer is either a male or female retail shopper that has been exposed to the marketing mix and the influence, if any, contributing to customer-based brand equity.

Keller purposes that “customer-based brand equity involves consumers’ reactions to an element of the marketing mix for the brand comparison with their reactions to the same marketing mix element attributed to a fictitiously named or unnamed version of the product or service” (1993, p. 2). Research has shown the relationship of gender and the marketing mix (price, advertising spending, price deals, store image and distribution intensity). Additional research has shown the influence of gender on brand equity (brand loyalty, brand awareness, perceived quality, brand association). The following are some select studies that indicate these relationships.

<u>Marketing Mix</u>

Price may be defined simple as the monetary cost of a product (good or service). However, other measures can be associated with price, e.g., premiums (Sethuraman and Cole, 1999), quality (Peterson, 1970), fee method (Munnukka, 2006), loyalty (McConnell, 1968), branding (Anselmsson, Johansson, and Persson, 2007). In a grocery products study, women were more willing to pay higher price premiums than men were (Sethuraman and Cole, 1999). However, such willingness to pay higher prices is based on perceived quality that is nonlinear in which prices have high and low thresholds (Peterson, 1970). In a recent study of pricing methods, males were willing to pay on a usage fee based method while females on a fixed fee based method (Munnukka, 2006). Furthermore, price serves as a cue of product quality and the brand loyalty strength (McConnell, 1968). A recent study identified specific criteria based on price premiums that contribute to brand equity. The brand equity dimensions (with some findings) were loyalty (purchase frequency, first choice in category), awareness (first mentioned in category, knows brand, logo and name), perceived quality (taste, performance, durability), and association (health and environmental factors, organizational innovativeness and success, social image) (Anselmsson, Johansson, and Persson, 2007).

Advertising is "any paid form of nonpersonal communication about an organization, product, service or idea by an identified sponsor" (Belch and Belch, 2007, p. 17). Advertising spending contributes positively to brand equity (Cobb-Walgren, Ruble, and Donthu, 1995) that provides important extrinsic cues for consumers (Milgrom and Roberts, 1986). Messages have been successful, not only in the level of spending, but also when targeting an audience's gender group in which the exposure links to the viewer's social identity (Maldonado, Tansuhaj, and Muehling, 2003). This gender group may, or may not be the traditional male-female classification but rather advertising effectiveness may be better targeted as nontraditional masculine-feminine grouping for greater congruence (Morrison and Shaffer, 2003). In addition, self-image congruity is a predictor of consumers' brand preference (Jamal and Goode, 2001). Congruency between the advertisements and the audience has self-identified masculinity and femininity results in positive attitudes toward the advertisements (Chang, 2006). Furthermore, when advertised brands were evaluated, masculinity individuals relied more on product function beliefs (Chang, 2006), which supports the Selectivity Model (Meyers-Levy, 1989).

Price deals are "coupons, cents-off, rebates, premiums, 'two-for-one', and other price incentives" (Mittal, 1994, p. 533). Over 35 years ago, females/housewives were more prone to use price deals (Montgomery, 1971). With an indication of the changing traditional gender shopping roles, men now have similar shopping responsibilities as women for purchasing a wide variety of products (Harmon and Hill, 2003). In a gender-price deal study, women were more likely than men to "usually/always" use coupons for department stores, fast food restaurants, food delivery, and dry cleaning purchases. However, males, rather than females, would more likely use coupons for groceries and electronics/computers (Harmon and Hill, 2003). However, price deals have a negative effect on brand equity, e.g., perceived quality (Villarejo-Ramos and Sanchez-Franco, 2005), brand and store loyalty (Bawa and Shoemaker, 1987).

Store image is "the way in which the store is defined in the shopper's mind, partly by its functional qualities and partly by an aura of psychological attributes" (Martineau, 1958, p. 47). Functional qualities may include product assortment, price levels, store layout or retail format; psychological attributes would be the sense of belonging, feelings, excitement/atmosphere (Lindquist, 1974-1975), even the personality of the store (Martineau, 1958). Emotional (pleasantness/unpleasantness, arousal/non-arousal, dominance/submissiveness) and cognitive (quality and variety of merchandise, value of money, price spending) factors were studied for female shoppers (Donovan, Rossiter, Marcoolyn, and Nesdale, 1994). Donovan, Rossiter, Marcoolyn, and Nesdale found that female "shoppers' emotional states within the store predict actual purchase behavior – not just attitudes or intentions …. (and) …. emotional variables to store behavior is independent of cognitive variables" (1994, p. 291). Furthermore, compared to females, males rate service encounters higher (Snipes, Thomson, and Oswald, 2006). In a study of information cues, brand recognition and retail store image, Porter and Claycomb concluded that the "(u)ltimate success of a brand and a retailer is determined by how close the image of the selling organization and the product meet the expectations of the consumer" (1997, p. 385).

Distribution intensity is the breadth and depth of products offered (Kotler and Keller, 2006) with greater availability, convenience for consumers (Yoo et al., 2000). Size of assortment reduces the chance of consumers considering shopping at competing retailers. There is a direct, proportionate relationship between (increased) assortment composition and size and (increased) purchases (Koelemeijer and Oppewal, 1999). In a study of super-store shoppers, females were significantly different from males in 14 of the 22 store attributes (Williams, Absher, and Hoffman, 1997). Females rated the stores' attributes higher, "more appealing," than men for 20 of the 22 survey items did. The highest rankings by women were associated with product selections and convenience, e.g., having large, more product assortments.

The marketing mix of price, advertising spending, price deals, store image, and distribution intensity (Yoo, Donthu, and Lee, 2000) provides measures to target a retail market segment (Smith, 1956), e.g., males, females, and to position brands in the consumers' mind as compared to competitors (Kotler and Armstrong, 2008). Successful brands increase value to firms and its' customers – brand equity (Aaker, 1991) – in the consumer market (Pappu and Cooksey, 2006).

<u>Brand Equity</u>

Loyalty is "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior" (Oliver, 1999, p. 34). In a United Kingdom consumer product market study, product performance, customer satisfaction, price, and level of risk and involvement of the customer (Datta, 2003) influence brand loyalty. Males have been found to be more brand loyal when purchasing automobiles (Moutinho and Goode, 1995). This brand loyalty, however, may depend on product performance or the sales process. In a survey of German car manufacturer customers, males had stronger repurchase intentions based on product satisfaction (product performance). Female intentions, on the other hand, were based on personal interaction experience (service performance) (Homburg and Giering, 2001). Temporal factors may also influence brand loyalty. In a longitudinal study, men had a higher consistency over time with their satisfaction responses, an indicator of loyalty. But, women experienced higher dissatisfaction responses (Bendall-Lyon and Powers, 2002). Therefore, men may maintain consistent brand loyalty over a period, while women may in shorter time periods.

Brand awareness is the "customers' ability to recall and recognize the brand, as reflected by their ability to identify the brand under different conditions linking the brand – the brand name, logo, symbol, and so forth – to certain associations in memory" (Keller, 2003, p. 76). Recall is important to retailers when consumers are out of the retail store and relying on (internal) memory to generate information. Recognition is important to retailers when consumers are in the store with thousands of stock keeping units (SKUs) and other in-store information to remind shoppers (external memory) (Solomon, 2007). In terms of brand awareness, recognition and recall relies on information processing and retention. According to the Selectivity Model, males and females process information, e.g., brand messages, differently (Meyers-Levy, 1989). Males use selective information processing that is heuristic, schematic. On the other hand, females use more comprehensive processing that is effortful, detailed elaboration. Furthermore, Meyers-Levy and Maheswaran (1991) confirmed that females used greater detailed elaboration of information than males, but this difference disappeared when recognition versus recall tasks (condition, situation factors) and/or cue incongruity (information factors) stimulated both genders. The Selectivity Model continues to be supported in consumer research (Darley and Smith, 1995; Walsh and Mitchell, 2005).

Perceived quality is the "customer's judgment about a product's overall excellence or superiority (that) is (1) different from objective or actual quality, (2) a higher level abstraction rather than a specific attribute of a product, (3) a global assessment that in some cases resembles attitude, and (4) a judgment usually made within a consumer's evoked set" (Zeithaml, 1988, pp. 3 and 4). Therefore, a consumer has perceived quality, and the resulting purchase decision may be influenced by "personal product (service) experiences, unique needs, and consumption situations" (Yoo et al., 2000, p. 197). Consumers use cues to determine perceived (customers' subjective judgment about) quality. Cues may be a brand name, price (Rao and Monroe, 1989), advertising (Kirmani and Wright, 1989), and more specifically extrinsic cues for perceptions of store brand quality (Richardson, Dick, and Jain, 1994). Furthermore, cues may have greater influence, impact for females. Meyers-Levy and Sternthal found that "women often have a lower threshold for elaborating on message cues, and hence at times may have greater access to the implications of those cues at judgment" (1991, p. 93).

Brand association "consists of all brand-related thoughts, feelings, perceptions, images, experiences, beliefs, attitudes," (Kotler and Keller, 2006, p. 188) and "is anything 'linked' in memory to a brand" (Aaker, 1991, p. 109). Such associations may include (brand) personality (Aaker, 1997) and relationships (Fournier, 1998) with inference to gender. Brand personality influences consumers' brand association, preference (Aaker, 1997), performance (Moss, 2007), and extensions (Diamantopoulos, Smith, and Grime, 2005). In developing the Brand Personality Scale, Aaker (1997) findings indicate that brand personality information uses heuristic cues and may need systematic processing. Based on the Selectivity Model (Meyers-Levy, 1989), males (having heuristic, schematic information processing) will have greater brand association. However, brand relationships find differently. Relationships, as applicable to branding, is not a product or marketing transaction but rather an active, contributing dyad based on quality, depth and strength of the consumer-brand relationship. Fournier observes, "(s)ince women in relationships feel empowered, they emerge as key agents of social change through their dealings in the ordinary world of brand consumption" (1998, p. 367).

The brand equity dimensions of brand loyalty, brand awareness, perceived quality, and brand association has been related to and shown to be increased by males or females. Generally, males appear to have higher brand loyalty. However, females appear to may have greater brand awareness, perceived quality, and brand association. From the marketing mix and brand equity literature, particular findings are more apparent, while other aspects remain unclear.

DATA AND METHODOLOGY

Retail markets are highly competitive that range from small, specialty boutique stores to large, mass appeal supper-centers/hypermarkets. These large stores have a broad target market that may not have uniqueness (product offering depth, or specialty) but do offer utility. Hypermarket stores have more than 225,000 square feet of floor space and over 45,000 stockkeeping units (SKUs) (Price and Ferrell, 2007). Therefore, a successful hypermarket position strength may included well developed retail value propositions, e.g., identifying a broad yet specific value proposition, and well developed retail brand, e.g., brand name, strong brand associations and promises, and managing customers' brand contacts (Kotler, 1999). Specific to retail marketing and this study, these strategies are measured by segmenting (demographics), targeting (male and female hypermarket shoppers), positioning (marketing mix) (Kotler and Keller, 2006), and value (customer-based brand equity) (Aaker, 1991; Keller, 1993).

The four major hypermarkets in Kaohsiung, Taiwan, the second largest city in the country, were the study setting. The sampling frame was an estimated proportion to the respective market share (35% for Carrefour, 30% for R-T Mart, 25% for Costco, 10% for Géant) of weekday and weekend shoppers who were at least 18 years old. The questionnaire included the researcher-developed 9-question shopper demographic profile and shopping characteristics section. Second, a 15-item retail marketing mix instrument developed by Yoo, Donthu and Lee (2000) that was used in their product branding study. The retail marketing mix elements (price, advertising spending, price deals, store image, and distribution intensity) were measured by a 5-point Likert-type scale (1 = Strongly Disagree to 5 = Strongly Agree). Third, a 23-item instrument developed by Pappu and Quester (2006) that was used in their customer-based brand equity (CBBE) study of specialty and department stores. The CBBE section items were measured by a 7-point Likert-type scale (1 = Strongly Disagree to 7 = Strongly Agree). Based on this criterion, the sample includes 435 participants having the proportional respondents. Table 1 presents the participant profiles and shopping characteristics.

Table 1: Hypermarket Shopper Profile by Gender

Shopper Characteristics	Male Shopper No.	Male Shopper %	Female Shopper No.	Female Shopper %	Total No.	Total %
Total	219	50.3	216	49.7	435	100.0
Age						
18-24	25	11.4	19	8.8	44	10.1
25-34	73	33.4	101	46.7	174	40.1
35-44	69	31.5	63	29.2	132	30.3
45-54	30	13.7	21	9.7	51	11.7
55 and Older	22	10.0	12	5.6	34	7.8
Marital Status						
Not Married	87	39.7	85	39.4	172	39.5
Married	132	60.3	131	60.6	263	60.5
Educational Level						
College Graduate Degree	10	4.6	16	7.4	26	6.0
College Undergraduate Degree	72	32.9	92	42.6	164	37.7
Attended College (No Degree)	22	10.0	15	6.9	37	8.5
High School Graduate	91	41.6	75	34.7	166	38.1
Less Than High School Graduate	24	10.9	18	8.4	42	9.7
Occupation						
Corporate Executive & Manager	10	4.6	22	10.2	32	7.4
Administrative Personnel	19	8.7	11	5.1	30	6.9
Sales, Technician, Clerical	124	56.5	82	38.0	206	47.3
Skilled Labor	17	7.8	70	32.3	87	20.0
Unskilled Labor	49	22.4	31	14.4	80	18.4
Income (Monthly)*						
US$640 or Less	53	24.2	19	8.8	72	16.6
US$641-$1,120	83	37.9	40	18.5	123	28.3
US$1,121-$1,600	38	17.4	103	47.6	141	32.4
US$1,601-$2,080	13	5.9	32	14.8	45	10.3
US$2,081-$2,560	17	7.8	12	5.6	29	6.7
US$2,561 or More	15	6.8	10	4.7	25	5.7
Avg. Purchase Amount (Per Visit)*						
US$16.00 or Less	31	14.2	25	11.6	56	12.9
US$16.01-$48.00	76	34.6	80	37.0	156	35.8
US$48.01-$80.00	60	27.4	48	22.2	108	24.8
US$80.01-$112.00	24	11.0	28	13.0	52	12.0
US$112.01-$144.00	17	7.8	22	10.2	39	9.0
US$144.01 or More	11	5.0	13	6.0	24	5.5
Purchase Experience						
Not Purchased at This Hypermarket	22	10.0	18	8.3	40	9.2
Purchased at This Hypermarket	197	90.0	198	91.7	395	90.8
Hypermarket Shopping Frequency						
Less Than Once Per Week	138	63.0	159	73.6	297	68.3
1 to 3 Times Per Week	67	30.6	43	19.9	110	25.3
4 or More Times Per week	14	6.4	14	6.5	28	6.4
Shopper By Hypermarket						
Carrefour	80	36.5	75	34.8	155	35.6
RT-Mart	57	26.0	69	31.9	126	29.0
Costco	56	25.6	53	24.5	109	25.1
Géant	26	11.9	19	8.8	45	10.3

*This table shows the study's participants profile in terms of demographic and shopping characteristics. * indicates 1 NT (Taiwan Dollar) is equal to US$.032 at time of survey.*

Males (n=219) and females (n=216) are equally represented with 60% being married and about 70% between 25 and 44 years old. Of the participants, more females (n=92) than males (n=72) were college graduates while more men (n=91) than women (n=75) were high school graduates. Almost 50% of the shoppers were sales, technicians, and clerical workers with many more males (n=124) than females (n=82) in these occupations. However, 60% of the participants earned between US$641 and US$1,600 monthly with females having higher income, e.g., 103 women and only 38 men earning between US$1,121 and US$1,600. Shopping purchases were generally balanced among men and women with 65% spending between US$16.00 and US$80.00 per visit. The vast majority (over 90%) had previously shopped at the hypermarket. But females (n=159) as compared to males (n=138) shopped less often than once a week.

Varimax rotations with Kaiser-Meyer-Olkin criterion (eigenvalue greater than 1.0) were used to examine construct validity and to extract items for the retail marketing mix and customer-based brand equity instruments. Of the 15-item marketing mix instrument, there were 3 items for each of the 5 retail elements (Yoo, Donthu and Lee, 2000). Only one item was regrouped – from distribution intensity to advertising spending. Hence, price includes 3 items, advertising spending 4 items, price deals 3 items, store image 3 items, and distribution intensity 2 items. The 23-item brand equity instrument included 4 brand loyalty items, 4 brand awareness, 5 perceived quality, and 10 brand association (Pappu and Quester, 2006). Two brand awareness items were regrouped to brand loyalty. One brand awareness item became brand association. Lastly, three brand association items were regrouped as brand awareness. Therefore, brand loyalty includes 6 items, brand awareness 4 items, brand association 8 items, and the 5 original perceived quality items remain unchanged. These constructs were tested for reliability using Cronbach's alpha scores and all easily exceeded the minimum of 0.70 (Hair, Anderson, Tatham, and Black, 1998) with a range for retail marketing mix elements from 0.751 to 0.912 and for customer-based brand equity dimensions from 0.843 to 0.942.

FINDINGS

In this male-female comparative study of perceived hypermarket marketing mix and customer-based brand equity (CBBE), several revealing results were found. The study design was for three purposes. First was to determine overall as to which gender, if either one, was influenced more by the marketing mix and thus, contributed to (resulted in) more brand equity. Second was to determine according to market share by gender perception of each hypermarket's marketing mix elements that may be linked to its level of brand equity. The sampling frame has proportionate respondents to each hypermarket's estimated market share – Carrefour (35%), R-T Mart (30%), Costco (25%), Géant (10%). Third was by gender to determine item significances for each marketing mix element and consumer-based brand equity dimension.

To test these three purposes, t-Tests were performed for gender (males, females) and compared to the marketing mix (price, advertising spending, price deals, store image, and distribution intensity) as well as total marketing mix (all five elements) and to customer-based brand equity (brand loyalty, brand awareness, perceived quality, brand association) as well as total brand equity (all four dimensions). In addition, given the nature of the super-store and hypermarket characteristics, e.g., mass appeal (both genders), we use significantly different ($p < 0.05$) and similarity ($p > 0.70$) criterion.

For the sample (n=435), females shoppers (n=216) have higher mean scores for four of the five marketing mix elements and for total marketing mix. Women feel that their hypermarket has higher advertising spending, more price deals, better store image, and offer significantly ($p < 0.05$) more products than males. However, advertising spending was very similar ($p > 0.70$) between genders. On the other hand, male shoppers (n=219) think that their hypermarket has significantly ($p < 0.05$) higher prices than females. The CBBE mean scores for females are higher than males for all four dimensions and total brand equity. Women have significantly ($p < 0.01$) more brand association and significantly ($p < 0.05$) higher total brand equity for their hypermarket than men do. The complete results are reported in Table 2.

The male and female shopper representation is balanced for each hypermarket – Carrefour (men = 80, women = 75), R-T Mart (men = 57, women = 69), Costco (men = 56, women = 53), Géant (men = 26, women = 19). Carrefour, the market leader, has several male and female similarities ($p > 0.70$) for its marketing mix – price, store image, and total marketing mix. Although not significant (differences or similarities), men perceive higher advertising spending and more price deals than women do.

Table 2 : Marketing Mix and Customer-Based Brand Equity Results

Elements/Dimensions	Mean For Male Shopper	Mean For Female Shopper	Mean Differences
Marketing Mix Elements[1]			
Price	2.92	2.79	0.13*
Advertising Spending	2.94	2.97	0.03***
Price Deal	3.22	3.30	0.08
Store Image	3.17	3.23	0.06
Distribution Intensity	3.21	3.35	0.14*
Total Marketing Mix	2.99	3.04	0.05
Brand Equity Dimensions[2]			
Brand Loyalty	3.94	4.10	0.16
Brand Awareness	4.92	5.09	0.17
Perceived Quality	4.23	4.34	0.11
Brand Association	4.52	4.82	0.30**
Total Brand Equity	4.37	4.58	0.21*

*This table presents the t-Test results of male and female comparative mean scores by each marketing mix element and brand equity dimension. [1] and [2] indicate marketing mix elements measured by a 5-point Likert-type scale and brand equity dimensions measured by a 7-point Likert-type scale respectively. *, **, and *** indicate significances of < 0.05, < 0.01 (differences), and > 0.70 (similarities) levels respectively.*

Women perceive the store having more product offerings than men do. On the other hand, CBBE results also show similarities ($p > 0.70$) for brand loyalty, perceived quality, and total brand equity. While men have slightly higher brand awareness, women have greater brand association.

R-T Mart, the second market share leader, consistently has higher female perceived marketing mix and customer-based brand equity ratings. For the marketing mix, only male shoppers had a higher mean score for price. No marketing mix results were significant (differences or similarities). Women shoppers had higher results for all CBBE dimensions and the total but brand loyalty and perceived quality were similar ($p > 0.70$) to men.

Costco has no significance (differences or similarities) for its marketing mix or customer-based brand equity results. Male shoppers perceive higher prices and more advertising spending than females. For the remaining marketing mix elements and all of the CBBE dimensions, female shoppers' mean scores were higher than males. Finally, Géant, the last of the four market share leaders, also has female shoppers with higher mean scores for the majority of its marketing mix and customer-based brand equity. The only exception (marketing mix) is that males perceive higher price than females. Advertising spending was viewed similarly ($p > 0.70$) between men and women. However, female shoppers had significantly higher brand association ($p < 0.05$) than males. The detailed results by hypermarket are shown in Table 3.

To further analyze the comparative relationships between gender to the marketing mix and customer-based brand equity, each item was evaluated by t-Tests. The findings are reported in the Appendix. For the marketing mix, male shoppers feel that their hypermarket had significantly higher price ($p < 0.05$) than females (Table 2). Of the three price items, one was significantly higher ($p < 0.05$) for males and the other two means were split between male and female shoppers having higher means but not significant (no differences or similarities) (Appendix). Advertising spending was found similar ($p > 0.70$) between genders (Table 2). Of the four advertising spending items, one was similar ($p > 0.70$). The other three items were split, one with higher male mean score and two with higher female means, but none at significant levels (no differences or similarities) (Appendix).

All of the remaining price deal, store image, and distribution intensity items had higher female means. One of the three price deal and one of the three store image items had similarities ($p > 0.70$) (Appendix). Neither marketing mix element showed any significance (differences or similarities) (Table 2).

Table 3 : Marketing Mix and Customer-Based Brand Equity Results for Hypermarkets

Elements/Dimensions	Mean For Male Shopper	Mean For Female Shopper	Mean Differences
Carrefour			
Marketing Mix Elements[1]			
Price	2.80	2.80	0.00**
Advertising Spending	3.75	3.69	0.06
Price Deal	3.40	3.30	0.10
Store Image	3.13	3.13	0.00**
Distribution Intensity	3.44	3.59	0.15
Total Marketing Mix	3.10	3.10	0.00**
Brand Equity Dimensions[2]			
Brand Loyalty	4.04	4.09	0.05**
Brand Awareness	5.28	5.16	0.12
Perceived Quality	4.10	4.10	0.00**
Brand Association	4.76	4.85	0.09
Total Brand Equity	4.52	4.54	0.02**
R-T Mart			
Marketing Mix Elements[1]			
Price	2.78	2.70	0.08
Advertising Spending	2.62	2.86	0.24
Price Deal	3.23	3.30	0.07
Store Image	3.01	3.07	0.06
Distribution Intensity	3.11	3.20	0.09
Total Marketing Mix	2.95	3.04	0.09
Brand Equity Dimensions[2]			
Brand Loyalty	3.87	3.95	0.08**
Brand Awareness	4.79	5.03	0.24
Perceived Quality	4.13	4.18	0.05**
Brand Association	4.38	4.73	0.35
Total Brand Equity	4.26	4.46	0.20
Costco			
Marketing Mix Elements[1]			
Price	3.16	2.91	0.25
Advertising Spending	2.24	2.19	0.05
Price Deal	3.13	3.28	0.15
Store Image	3.57	3.64	0.07
Distribution Intensity	3.22	3.41	0.19
Total Marketing Mix	2.96	3.00	0.04
Brand Equity Dimensions[2]			
Brand Loyalty	4.21	4.47	0.26
Brand Awareness	4.97	5.27	0.30
Perceived Quality	4.71	4.98	0.27
Brand Association	4.66	5.02	0.36
Total Brand Equity	4.61	4.91	0.30
Géant			
Marketing Mix Elements[1]			
Price	3.04	2.68	0.36
Advertising Spending	2.63	2.66	0.03**
Price Deal	2.83	3.33	0.50
Store Image	2.76	3.05	0.29
Distribution Intensity	2.67	2.76	0.09
Total Marketing Mix	2.78	2.94	0.16
Brand Equity Dimensions[2]			
Brand Loyalty	3.18	3.68	0.50
Brand Awareness	3.95	4.50	0.55
Perceived Quality	3.81	4.09	0.28
Brand Association	3.79	4.51	0.72*
Total Brand Equity	3.66	4.20	0.54

*This table shows the t-Test results of male and female comparative mean scores by each hypermarket's marketing mix element and brand equity dimension. [1] and [2] indicate marketing mix elements measured by a 5-point Likert-type scale and brand equity dimensions measured by a 7-point Likert-type scale respectively. * and ** indicate significances of < 0.05 (differences) and > 0.70 (similarities) levels respectively.*

Also, neither distribution intensity items showed any significance (Appendix) but the element showed significantly higher distribution intensity ($p < 0.05$) by females (Table 2).

For customer-based brand equity, the mean scores for every item are higher for female shoppers than males. Brand association results revealed significant differences for four of the eight items. Females were more likely ($p < 0.001$) than males to recognize that hypermarket from all others. Furthermore, females more likely believed than males that hypermarket offered (1) more value for money spent ($p < 0.01$), (2) very good variety of products ($p < 0.01$), and (3) very good after sale service ($p < 0.05$). While not significant, females did rate that hypermarket higher than males for the other brand association items, e.g., conveniently located, good store atmosphere, convenient facilities, in-store customer service (Appendix). As a result, female shoppers have a significantly ($p < 0.05$) higher brand association (Table 2). No other item for the remaining three brand equity dimensions shows a significant difference. However, perceived quality findings are of interest to this study. The perceived consistent products quality is very similar ($p > 0.70$) between male and female shoppers. Yet none of the other items, e.g., good quality products, products durability, products reliability and products features, shows any significance (differences or similarities) (Appendix) or for the perceived quality dimension (Table 2). As well, brand loyalty and brand awareness were not significant. However, female shoppers' total brand equity was significantly ($p < 0.05$) higher than males (Table 2).

IMPLICATIONS

Several findings have revealed specific relationships between the marketing mix and customer-based brand equity (CBBE) between male and female hypermarket shoppers. First, women do not believe their hypermarket is expensive (price $p < 0.05$) (Table 2). From the female perspective, their stores offer better value, e.g., product assortment (distribution intensity $p < 0.05$) as well as greater communications (advertising spending), more price deals, better store image (all with higher mean scores), lower prices as compared to male shoppers. An increased assortment does increase purchases (Koelemeijer and Oppewal, 1999) which is important to female shoppers (Williams, Absher, and Hoffman, 1997). Furthermore, women are more willing to pay higher price premiums (Sethuraman and Cole, 1999) within certain price points (Peterson, 1970).

Second, women in this study have higher mean scores for all CBBE dimensions. Specific to price, female shoppers had higher perceived quality opinions of their store than males. Therefore, a value proposition (Kotler and Armstrong, 2008) appear to have been established by the hypermarket (the marketing mix) and accepted by its female shoppers (CBBE). The (brand) relationship (brand association) was effective with "brand consumption" (Fournier, 1998). As well, the selectivity model (Meyer-Levy, 1989) assists in explaining the implications of higher female CBBE findings. Female shoppers were more "aware" (brand awareness) and were able to benefit from more comprehensive (effortful, detailed elaboration) information processing of cues from the marketing mix, e.g., advertising spending (Kirmani and Wright, 1989), brand name and price (Rao and Monroe, 1989), store (brand) image (Richardson, Dick, and Jain, 1994). Female shoppers "often have a lower threshold for elaborating on message cues, and hence at times may have greater access to the implications of those cues at judgment" (Meyers-Levy and Sternthal, 1991, p. 93). The hypermarkets were effective in targeting female shoppers (higher female total marketing mix mean scores) that resulted in significantly ($p < 0.05$) higher female total customer-based brand equity than males.

Third, the hypermarket results (Table 3) provide insight as to effective and ineffective marketing strategies. Only Carrefour, the market leader, shows any total marketing mix significance ($p > 0.70$) with similarities between male and female shoppers. The total marketing mix score was lower for Costco (0.04), at third market share position, than R-T Mart (0.09), second market position, but neither at significant levels (differences or similarities). If this is a criterion for market share, then R-T Mart should focus on maintaining the female target and increase efforts toward male shoppers. Géant has the highest mean score difference. However, the total marketing mix scores for both male and female shoppers were more consistent with market share – Carrefour, R-T Mart, Costco, Géant.

Fourth, the total customer-based brand equity results are somewhat more consistent with market share. Carrefour has similar ($p > 0.70$) CBBE between male and female shoppers. This is followed, but not significant (differences or similarities), by R-T Mart (0.20), Costco (0.30), and Géant (0.54). However, based on average mean scores for both male and female shoppers the findings are greatly different. Costco has the highest (male and female) average total CBBE score (4.76), followed by Carrefour (4.53), R-T Mart (4.03), and Géant (4.05). Therefore, Costco has market opportunities. For example, if Costco, with 25% market share, increases its marketing mix strategies effectiveness, it would, based on current CBBE scores, be a driver to further increase CBBE and to become the market leader, e.g., gaining 6% share – 5% from Carrefour and 1% from R-T Mart. Another opportunity alternative is retailer consolidation, e.g., K-Mart and Sears, Roebuck and Company merger, with Géant, the fourth market share retailer. This would be an effective strategy to gain market size (Porter, 1980) and to have three, e.g., Rule of Three (Sheth and Sisodia, 2002), primary hypermarkets.

CONCLUSION, LIMITATIONS, AND FURTURE RESEARCH

Consumer product manufacturers and retailers face greater competition in the 21st century than at any other time in history. These challenges are not only from other local, national, and global businesses but also from consumers. Consumers' expectations and demands have heightened with more access to information, greater financial ability and willingness to purchase, and evolving demographic trends, e.g., gender shopping roles and responsibilities. This study has linked some relationships between gender (males, females), retailers' marketing mix (price, store image, distribution intensity, price deals, advertising spending), and customer-based brand equity (brand loyalty, brand awareness, perceived quality, brand association). Having similar perceptions of the marketing mix and for customer-based brand equity between male and female shoppers is a contributing factor to market share. Environmental factors have been (McNair and May, 1978), and are (Penn, 2007) changing as to who and where consumers shop and what consumers purchase. CBBE provides a measure of success for these challenges.

This study has limitations. For example, while the study was conducted in the second largest city in Taiwan, Kaohsiung city, the findings cannot be generalized to other Asian or international markets. Hypermarkets are just one classification, general merchandise stores, of "big box" stores. Findings, therefore, are limited to this retail format.

The study findings lead to further identified research areas. Is Carrefour market leadership the result of customer-based brand equity? Or, is customer-based brand equity the result of market share? Would the same results be found for hypermarkets in different Asian markets? Or in the North American (or European) market? Would the results be similar with other mega-retailers and "category killers," e.g., Staples, Office Depot, Office Max? What has caused Costco to have high mean scores from both male and female shoppers but not significantly contributing to customer-based brand equity or market position?

If in fact Penn is correct, and we feel that he is, that microtrends, "an intense identity group, that is growing, which has needs and wants unmet by the current crop of companies, markets, policymakers, and others who would influence society's behavior" (2007, p. xx), is occurring, then branding approaches must be adjusted accordingly, further brand strategy changes, e.g., marketing mix, cues, media outlets. Specifically, branding strategies must be more accurately, appropriately targeted (Kotler and Keller, 2006) to increase brand equity (Keller, 1993; Kotler, 1999). Gender shopping and purchasing roles have, and are quickly changing.

APPENDIX

Appendix: Marketing Mix and Customer-Based Brand Equity Question Results

Elements/Dimensions	Mean For Male Shopper	Mean For Female Shopper	Mean Differences
Marketing Mix Elements[1]			
Price			
Price in (hypermarket) is high	2.93	2.78	0.15*
Price of (hypermarket) is low	3.06	3.18	0.12
(Hypermarket) is expensive	2.88	2.75	0.13
Advertising Spending			
(Hypermarket) intensively advertised	2.97	2.94	0.03****
The ad campaigns for (hypermarket) seem expensive	2.87	2.96	0.09
The ad campaigns for (hypermarket) seen frequently	2.93	2.83	0.10
(Hypermarket) has more locations than competing stores	3.00	3.14	0.14
Price Deal			
Price deals for (hypermarket) are frequently offered	3.41	3.50	0.09
Too many price deals for (hypermarket) are presented	3.33	3.46	0.13
Price deals by (hypermarket) emphasized more than reasonable	2.92	2.94	0.02****
Store Image			
(Hypermarket) carries products of high quality	3.07	3.10	0.03****
(Hypermarket) high quality	3.11	3.23	0.12
(Hypermarket) has known brands	3.31	3.35	0.04
Distribution Intensity			
(Hypermarket) sells more goods than competing stores	3.20	3.33	0.13
(Hypermarket) provides more goods than competing stores	3.22	3.36	0.14
Total Marketing Mix	44.81	45.61	0.80
Brand Equity Dimensions[2]			
Brand Loyalty			
Preferred choice	4.10	4.29	0.19
Loyal to (hypermarket) stores	3.98	4.05	0.07
Will not buy products from other	3.67	3.86	0.19
My first choice	3.73	3.87	0.14
Character. come to mind quickly	4.13	4.31	0.18
Aware of (hypermarket) stores	4.00	4.23	0.23
Brand Awareness			
Have shopped at (hypermarket)	5.51	5.66	0.15
Like (hypermarket) stores	4.75	4.92	0.17
Feel proud to shop at stores	4.72	4.93	0.21
Trust (hypermarket) for products	4.70	4.83	0.13
Perceived Quality			
Offer very good quality	4.40	4.52	0.12
Offer consistent quality products	4.35	4.39	0.04****
Offer very durable products	4.11	4.28	0.17
Offer very reliable products	4.26	4.33	0.07
Offer prod with excellent features	4.03	4.19	0.16
Brand Association			
Stores are conveniently located	4.53	4.76	0.23
Offers value for money	4.28	4.61	0.33**
Offers very good atmosphere	4.53	4.75	0.22
Offer very convenient facilities	4.57	4.76	0.19
Offer very good customer service	4.52	4.74	0.22
Offer very good variety of prods.	4.61	4.93	0.32**
Offer very good after sales service	4.46	4.77	0.31*
Recognize among other stores	4.67	5.26	0.59***
Total Brand Equity	100.60	105.25	4.65*

This table shows the t-Test results of male and female comparative mean scores by each marketing mix element item and brand equity dimension item. [1] and [2] indicate marketing mix elements measured by a 5-point Likert-type scale and brand equity dimensions measured by a 7-point Likert-type scale respectively. *, **, ***, and **** indicate significances of < 0.05, < 0.01, < 0.001 (differences), and > 0.70 (similarities) levels respectively.

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REVISITING CONSUMER ENVIRONMENTAL RESPONSIBILITY: A FIVE NATION CROSS-CULTURAL ANALYSIS AND COMPARISON OF CONSUMER ECOLOGICAL OPINIONS AND BEHAVIORS

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ABSTRACT

Cross-cultural marketing of consumer products and services has become an integral part of the mainstream strategic thinking of multinational consumer products firms. These firms must increasingly address ecological concerns of the individuals comprising the various global market segments where these products will be marketed. Green Marketing has thus become a hot topic for both producers and consumers across cultures. This study investigates how consumers across cultures feel about the environment, whether it makes sense to stress green marketing to consumers in other cultures if they are not environmentally sensitive, and whether there are rudimentary differences in ecological attitudes based on cultural origins. The paper compares consumer attitudes toward the environment to determine whether major differences do exist among cultures. Sample data of 459 consumers was gathered from five countries (Azerbaijan, Italy, Spain, the United States and Venezuela) and was analyzed. Factor analysis was performed to indicate dimensions of environmental responsibility. ANOVA was used to see if differences exist between cultures with regard to the various dimensions. Environmental responsibility is characterized by awareness of environmental problems, knowledge of remedial alternatives best suited to alleviate those problems, skills needed to pursue those actions, and a possession of a genuine desire to act.

KEYWORDS: Environmental responsibility, cross-cultural marketing, green marketing.

JEL: M31

INTRODUCTION

Much has happened since the early days of the environmental movement when environmentalism was primarily confined to a relatively small number of environmental activists, many of whom had emerged from the alternate-lifestyles-movements most people think of when they reflect on the social upheaval occurring in the U.S. and Western Europe during the latter half of the 1960's. From its somewhat outside the mainstream beginnings, the "green movement" may finally be trending toward majority status in many economically privileged and predominately Westernized societies, with environmentalism perhaps on the verge of becoming a major consumer orientation even among the elite living in those societies (Webb, Mohr, & Harris 2008; Rosenthal & Revkin 2007; Holusha 2000; Shabekoff 1983). While ecological activist groups appear successful in targeting their message to consumers in Western cultures on the dangers facing the planet's fragile eco-systems, the message does not appear to be gaining traction in less economically developed regions of the world. The earth's rain forests and remaining wildlife habitat are still disappearing at an alarming rate, and rapidly developing economies such as Indonesia, China and India are now successfully competing with the West for vital energy resources, apparently without regard to their own worsening air quality (World Wildlife Fund 2008; Stanford University 2006).

Whether a shift in societal consumer attitudes toward environmental issues is real or imagined, the environmental movement itself has certainly had its fair share of enthusiastic Western political, media, and celebrity cheerleaders---adding their voice in support of a "less is more" consumer mentality. The surprise at this point is that anyone would have the temerity to disagree with a conventional wisdom that so highly associates consumption with ecological crisis. Manmade greenhouse emissions, for example, are thought to be the cause of global warming. Since the root cause of most ecological issues apparently begins with man's insatiable demand for the earth's resources, it would follow that the growing awareness of environmental problems would be linked to the recognition that human activities play a significant role in the degradation of the environment (Fernandez-Manzanal, Rodriguez-Barreiro, & Carrasquer 2007).

Critics of the "man is responsible" position indicate that opposing arguments are routinely ignored by the media and other influential supporters in both science and government. As a result, much of the other side of the argument legitimate scientific debate being blacklisted in favor of ideologically based opinion. Because there is less openness of debate, needlessly alarming the public and promoting marginal public policy decisions (Fund 2008; Johnson 2008). Despite opponents' claims regarding the apparent lack of support from media and government, scientific contrarians have managed to get their message out to a growing group of skeptics and financial supporters (PBS/Lomborg 2007).

No matter which direction the science leads, the U.S. public already appears more engaged in environment issues than at any time in recent memory. Based on the number of European nations signing on to international ecological treaties, political leaders there appear even more engaged than politicians in the U.S. (Revkin 2005; National Center for Policy Analysis 2002). Further, at a time when citizens across the globe could justifiably be focusing their attention on global terrorism, uncertainty in the energy markets, or rising inflation and the possibility a global economic meltdown, environmental issues apparently remain high on the list of concerns to the average citizen (Butler 2006). Whether that ecological concern has the same broad appeal in rapidly expanding and/or less developed national economies, however, needs more investigation. Based on reports of the air quality in India and China, emphasis in those cultures appears to be on economic expansion, not clean air and greenhouse emissions. Recent evidence also indicates that the Amazon rain forest is being cleared at a more rapid rate than previously assumed, primarily by cattle ranchers and corn and soybean farmers eager to capitalize on the growing demand for beef, and, ironically, increased ethanol production (Platt 2007; Butler 2008).

PURPOSE OF THE STUDY

The purpose of the current study is to investigate consumer related ecological attitudes across various national cultures to determine if a new ecologically based consumption mentality is emerging, not just in traditional Western societies, but across a spectrum of cultures. The study should be of interest and have practical value to both national and global marketers since knowledge of emerging consumer attitudes is considered essential in developing marketing campaigns designed around products that have appeal to local consumers. Additionally, since the consumer's ecological attitude is considered part of an overall framework of consumer orientations that ultimately affect buyer decision making, any evidence of a shift toward more ecologically responsible consumption should be documented and verified.

From a theoretical standpoint, any information that provides additional knowledge on the formation of consumer attitudes helps advance marketers' overall understanding of the factors affecting the consumer buying decision process. Since ecological social responsibility and the consumer's ecological attitude are both considered part of the rubric of concerns previously mentioned as belonging to the marketing discipline, it is important to understand how these attitudes are formed. For example, are they predominately rooted in cultural and national identity factors, or, do they result from other external artifacts such as global environmental marketing and educational campaigns? Finally, since consumer environmental attitudes appear more fluid than stable, descriptive information on the current state of consumer ecological orientation might assist in the development of more robust theoretical models explaining the presence of ecologically responsible consumers across cultures.

LITERATURE REVIEW

Signs of an intellectual, if not ideologically driven divide appear to be growing in the scientific community vis-à-vis public policy decisions affecting the world's ecology. One of the more contentious debates involves global warming, not so much whether it exists, but why it exists. Those who ascribe to a position implicating man as the cause of global warming have long advocated energy conservation and the use of alternative energy sources as a way to reduce greenhouse emissions. Under this scenario, man's dependence on fossil fuels results in the release of excessive amounts of CO_2 which then envelops the earth's atmosphere and raises surface temperatures. In addition to contributing to the rise in sea levels and global temperatures, these emissions are also said to disrupt the earth's weather patterns (i.e., more severe hurricanes, etc.). Under the manmade global warming paradigm, solutions tend to include reductions in fossil fuel based energy usage and conservation of natural resources. Since much of the world's economy is based on energy derived either from coal or petroleum, reductions in either of these fossil fuels would imply a correspondent reduction in lifestyle activities and product usage that accompanies lifestyle (Webb, et. al. 2008).

The big question is whether consumers are willing to make such a sacrifice, especially in the U.S. where consumption is expected and encouraged. Measurement of ecological attitudes, even among true believers, poses something of a dilemma since respondents often overstate both their intentions and their behaviors. Nonetheless, individuals who profess to live an eco-oriented lifestyle are expected to demonstrate their respective attitudes and behaviors by actively participating in eco-oriented activities such as recycling and actually using less energy. Theoretically, at least, the truly eco-oriented consumer should both talk the talk and walk the walk.

Individuals who reject man's influence on the earth's ecology would be expected to fall at the other end of the eco-orientation continuum. Rather than conservation and cutbacks, the admittedly less-than-concerned individual would likely support naturally occurring phenomenon such as increased solar activity to explain the change in global temperatures in recent years---perhaps gleefully noting the current winter as being one of the coldest on record (Johnson 2008). Since a majority of the world's consumption takes place in the West, the populations most likely to exhibit reluctance to change would also be members of advanced Western economies. Not only do western consumers have the most to sacrifice, but they have readier access to published information contradicting arguments urging conservation.

Ironically, while the respondents from advanced Western economies, particularly in the U.S. should demonstrate the largest percentage of eco-oriented citizens, it is quite possible that the same cultural dynamics inherent in one group would encourage anti-environmentalism in the other. Based on its more pro-development, market based history of reliance on technological solutions, Western and particularly U.S. based respondents could just as easily reject conservation and cutbacks as a solution to the world's environmental problems. Even more ironic, the latter might even categorize themselves as environmentalists but would no doubt score low on traditional eco-attitude and behavioral scales.

Using a sort of eco-based cognitive vigilance, consumers at the other end of the eco-orientation spectrum may be as motivated toward awareness and knowledge of environmental issues as their more conventional environmentalist counterparts. Rather than supporting draconian cutbacks in lifestyle, however, the second type individual would look first to free market and technology based solutions to solve environmental problems. Hence, some portion of the sample is likely to be both aware and knowledgeable, but unwilling to act based on traditional behavioral measures such as recycling and energy conservation (Stone, et. al. 1995).

The final individual may be the type who is either ignorant of the issues, or is too impoverished to be concerned with anything but survival. While members of advanced economic societies appear quite concerned over deforestation and loss of wildlife habitat---the areas most in need of conservation practices are often the ones least able (or willing) to implement the sort of conservation practices that would insure long term economic and environmental stability (Johnson 2008; Butler 2007). Because the sample is composed of a variety of national cultures with varying degrees of economic stability and access to ecological information, what constitutes eco-oriented consumption and ecological concern is likely to vary significantly. Individuals with no sense of control over their external situation would thus believe personal efforts to save the environment to be rather fruitless. Prior to testing of hypotheses, it is believed that the respondents from less developed economies (two of the five national cultures included the sample) will demonstrate less eco-oriented attitudes and behaviors simply because they live under poorer economic conditions.

In closing, the authors have noted the contentious nature of the ecological debate for the purpose of placing the various issues into a global framework. While studies have indicated that most Western societies rank ecological issues high on their list of concerns, there is less evidence to suggest the same levels exist outside Western society. Hence, is “eco-mania’ primarily a Western phenomenon confined to economically advanced populations, or, have consumers across cultures truly begun to engage in ecologically friendly consumer patterns of behavior?

ENVIRONMENTAL RESPONSIBILITY, THE CONSTRUCT

Environmental Responsibility has previously been defined as a “state in which a person expresses an intention to take action directed toward remediation of environmental problems, acting not as an individual concerned with her/her own economic interests, but through a citizen consumer concept of societal-environmental well being” (Stone, Barnes & Montgomery 1995). The authors hypothesized that environmental responsibility would consist of five dimensions including: 1) an attitude expressing concern for the environment; 2) awareness and knowledge of environmental issues; 3) behaviors that ecologically responsible consumers might engage in; 4) a willingness to act; and 5) a positive locus of control with an inherent ability and skill level necessary to act upon environmental problems. The findings of their study substantiated these hypotheses.

Previous research indicates that attitude toward the environment is a part of environmental concern (Dunlap, Van Liere, Mertig, & Jones 2000; Kaiser, Woelfing & Fuhrer 1999; Thomson & Barton 1994; Newhouse 1990) with many environmentalists holding the view that man should live in harmony with nature and that limits should be placed on economic growth. It is generally thought that ecological problems are the result of societal values, attitudes and beliefs advocating and encouraging growth, irrespective of environmental costs (Schultz 2001; Thomson & Barton 1994). Thus, attitude toward ecological issues should be considered a vital part of environmental concern.

The level of environmental knowledge a citizen possesses is an important part of environmental responsibility. Although some research is in disagreement with the relationship between environmental knowledge and environmental behaviors (Shean & Shei 1995), most research indicates knowledge of environmental issues to be an important part of environmental responsibility (Smith-Sebasto 1995; Schann & Holzer 1990; Roth & Perez 1989; Hines, Hungerford, & Tomera 1986). Indeed, some research indicates that increased knowledge of the environment produces a more positive attitude toward the environment or can change behavior directly (Hungerford & Yolk, 1990, Arcury, 1990). It is commonly thought that environmental responsibility implies a behavioral component. Hence, the adoption of eco-friendly behaviors such as recycling, consumerism (e.g., avoidance of certain products, change in purchase behaviors, etc.), political actions (e.g., writing letters to elected officials and voting for candidates based on their environmental records), and educational programs (e.g., becoming more learned in hopes of solving problems (Dunlap & Scarce 1991) are demonstrable acts indicating environmental responsibility. A growing minority of citizens now considers themselves to be environmental activists. Thus, one's ecological behavior should be considered an important component of environmental responsibility.

Another important component of environmental responsibility is willingness to act. A willingness to act has been identified as closely related to locus of control (Hungerford & Yolk 1990; Hines, et. al., 1986). Individuals with a high internal locus of control feel more strongly and are more willing to act to do something to save the environment (Hwang, Kim & Jeng 2000). There is a positive relationship between environmental concern and environmentally responsible intentions to act (McGuire 1992). Some consumers, however, may be willing to act, but not willing to make personal sacrifices (Krause 1993).

Lastly, consumers must have the ability to act. Placed in a practical perspective, eco-oriented consumers should possess the skills necessary to help solve environmental problems, whether that entails the ability to make others aware of the health or esthetic issues related to pollution, the ability to organize consumer boycotts, engage in eco-oriented litigation, or simply understanding the importance of joining conservation groups and other ecologically based organizations such as Greenpeace. Thus, consumers who have the ability to act must be able to logically reason and engage in decision processes to solve environmental problems (Tonn, English & Travis 2000).

A BRIEF PROFILE OF THE COUNTRIES INVESTIGATED

Azerbaijan

The Republic of Azerbaijan was part of the Soviet Union until it won its independence in 1991 (Aliprandini 2006). Azerbaijan is considered one of the most important spots in the world for oil exploration and development. Industry is dominated by the energy sector, contributing almost 70% of the total value of all the country's industrial production (Shelton 2003). The country is rich in oil and natural gas reserves and in September 1994, a 30 year contract was signed between the State Oil Company of Azerbaijan and 13 large national and multinational oil companies, among them Amoco, BP, and Exxon (Horton 1997). Western oil companies have since been able to tap into deepwater oilfields untouched by the Soviet exploitation. While the country is obviously rich in terms of its natural resources, the wealth generated from its oil reserves has not trickled down to the average citizen (O'Lear 2001). Unemployment, for example, ranges from 15% to 20% and per capita income is quite low (e.g., estimated at \$3,862 to \$6,476 annually) (Aliprandini 2006). 50% of the population lives in poverty even though the country exports nearly \$4 billion worth of oil, gas, and chemicals annually.

From an environmental standpoint, Azerbaijan faces serious ecological challenges and diverse threats such as air, water and soil pollution, accumulation of human, industrial and radioactive wastes, deforestation, coastal erosion, and increased incidence of environmentally related diseases (Shelton 2003; Robinson 2008). Soil pollution has occurred throughout the region due to contamination by DDT and other toxic defoliants used in the production of cotton during the Soviet era. The Caspian petroleum and petrochemicals industry has traditionally contributed to the air and water pollution problems experienced by the population in that area. The average Azeri lives in overcrowded, dirty, polluted conditions (Oyster 2000). Years of Soviet oil exploration have left the once beautiful capital of Baku in a dire state of ecological deterioration. Although several environmental organizations exist in Azerbaijan, few funds have been allocated to begin the critical cleanup and prevention programs needed to alleviate some of the severe pollution issues there. Over-fishing, primarily by poachers, is threatening the survival of Caspian sturgeon stocks, the source of most of the world's supply of caviar. The Convention on International Trade in Endangered Species (CITES) has listed as threatened all sturgeon species, including all commercial Caspian varieties. CITES imposed a ban on most Caspian caviar in January 2006, but the ban was lifted in January 2007

The country's Apsheron Peninsula, including the cities of Baku and Sumqait, and the Caspian Sea is considered to be one of the most ecologically devastated areas in the world, having severe soil, air, and water pollution problems (Shelton 2003, Aliprandini 2006). Today, an estimated 200 oil waste lakes exist in the area. Sumqait's heavy industries have led to a staggering degree of environmental degradation. Today, the Apsheron peninsula is a barren wasteland with almost no visible vegetation. The moonlike landscape outside Baku is a sober reminder of the devastating impact unfettered human activity can have on the environmental quality of a region.

The average Azeri is extremely aware of the environmental problems that are faced within the country. O'Lear & Gray (2006) noted, for example, that 50% of Azeri's were both aware and concerned about problems such as pollution and forest depletion. They also felt that government agencies weren't doing enough to correct the situation. However, when asked to rank environmental concerns in relation to other societal problems, the majority of Azeris placed it 9th on a list of 10 items (O'Lear & Gray 2006). From the above discussion the following hypotheses have been developed:

> H_1: The Azerbaijan sub-sample will demonstrate the lowest levels of environmental concern of any of the cultures investigated in the study.
>
> H_2: The Azerbaijan sub-sample will have lower levels of faith in the ability of the government, business and industry in general to correct environmental problems that other cultures in the study.

<u>Venezuela</u>

The Republic of Venezuela, located in the northernmost part of South America, has suffered great environmental degradation in recent years. The extraction of oil, food processing, textile industries and heavy steel and aluminum industries have created heavily to local and national pollution (Gonzalez & Nagel 1996). Environmental issues of note include sewage pollution spilling into Lago de Valencia, located to the west of Caracas; the oil and urban pollution of Lake Maracaibo, located in northwestern Zulia State; deforestation; soil degradation; and urban and industrial pollution, especially along the Caribbean coast. Lake Maracaibo is commonly referred to as the most polluted lake in South America (Ceaser 2003). Current concerns also include irresponsible mining operations that endanger the rain-forest ecosystem and indigenous peoples of that region, and gold extraction activities in the Guyana zone that have resulted in significant mercury pollution. In addition to pollution issues, Venezuela currently has the third highest deforestation rate in South America.

Venezuela remains highly dependent on its oil revenues which account for roughly 90% of the country's export earnings, more than 50% of the federal budget revenues, and around 30% of GDP. Petroleum exports have made Venezuela the third largest economy in South America (Ceaser 2003). Emboldened by his December 2006 reelection, President Hugo Chavez nationalized firms in the petroleum, communications, and electricity sectors in 2007, further eroding what remained of an already dwindling foreign influence on the economy. Although voters recently rejected proposed constitutional changes that would have given him additional authority (December 2007), Chavez's power has not been significantly diminished. Following the example set by his ideological hero, Fidel Castro, Chavez's ultimate goal appears to be one of one consolidating and centralizing his control over the economy and implementing his own version of "21st Century Socialism."

As with Azerbaijan, per capita income in Venezuela is low (estimated to range from $5,800 to $6,250). While nearly 40% of the country lives in poverty, Venezuelan oil revenues allows the country to maintain the highest per capita income in South America. Despite or perhaps because of the country's economic dependence on oil as the chief source of economic revenues, the Venezuelan people themselves express a great deal of concern for the environment. In a recently published study, Venezuelans were among the top four countries in the world in terms of voicing their concern for the environment (Ho 2007). While it is often assumed that citizens living in less advanced national economics tend to be less ecologically concerned than citizens from more advanced national economies, the above example suggests otherwise. One of the reasons advanced as to why this perception exists is because (as is the case of the Venezuelan people) the citizens themselves have less, if any, input as to the actions of their governments. In essence, it is simply easier for citizens living in most advanced economies to participate in consumer protests because there is little or no political retribution meted out to those who do participate. Indeed, Western activists, far from being politically persecuted are often held out as heroes by an adoring Western media. This is not the case in Venezuela at the moment. Brazil, for example, has only recently been able to establish an organized ecological movement that enjoys support at the highest level of government. On the other hand, some research indicates that native Venezuelans are not sincere supporters of the ban on mining and logging activities in the Venezuelan Amazon (Huber 2001). It appears that Venezuelans are not particularly interested in conservation of natural resources as there is a low acceptance of the protected areas by the native population, even though this would benefit eco-tourism in the region. (Huber 2001). From the above discussion the following hypotheses have been developed:

> H_3: The Venezuelan sub-sample will demonstrate overall lower levels of environmental concern than most of the cultures investigated in the study.
>
> $H_{4:}$ The Venezuelan sub-sample will demonstrate lower levels of eco-oriented attitudes and behaviors than most other cultures with regard to conservation of natural resource

<u>Italy</u>

Italy has a population of 57 million concentrated on a relatively small land area. High population densities have lead to strong environmental pressures to solve problems with pollution, inadequate waste disposal, and land erosion. Per capita income is estimated to be around $27,700. Primary environmental concerns for Italy include air pollution from industrial emissions such as sulfur dioxide; coastal and inland rivers polluted from industrial and agricultural effluents; acid rain damaging lakes, and inadequate industrial waste treatment and disposal facilities. In the 1990's Italy had the world's 10^{th} highest level of industrial carbon dioxide emissions. Business managers and professionals in Italy tend to view reduction of waste as a higher priority than other environmental factors such as increasing energy efficiency or developing green (environmentally friendly) products. In addition to pollution, Italy continues to face a long-term threat from flooding and erosion. The island city of Venice, one of the world's most beautiful and unusual cities, is routinely threatened by floodwaters and unfortunately, continues to sink.

One of the most severe problems in recent years has been garbage collection and disposal. Between 1975 and 1995, almost 26 million tons of garbage had basically been allowed to build up along the highways and cityscapes of Italy, forcing the government to become more proactive in tackling this huge, garbage related environmental problem. In 1997, a law was finally passed requiring everyone in Italy to recycle so as to decrease the abuse of waste facilities. Italy is now considered the world leader in recycling dangerous wastes. The Italian government is also a strong proponent of solar energy use. Italy is now fourth among European nations in the use of solar energy (Aguila, et. al. 2008). Based on our research, the private sector (i.e., business and industry) appears to routinely fail when it comes to proactively addressing the country's ecological problems. Hence, it is the Italian government that usually has to step up if the problems persist---and then, only after the problem threatens to become a national health issue. From the above discussion, the following hypotheses have been developed:

> H_5: The Italian sub-sample will demonstrate less faith in individual ability to solve ecological problems than will the U.S. and Spanish samples (i.e., lower locus of control).
>
> H_6: The Italian sub-sample will demonstrate less individual willingness to act to solve environmental problems than either the U.S. or Spanish sub-samples.

Spain

Spain appears to takes a very proactive approach when it comes to the environment, instituting measures such as those designed to protect wetlands and the wild bird population. Various Mediterranean and National Park locations (e.g., La Gomera in the Pyrenees) have been designated as marine life protection areas. In addition to its in-country ecological efforts, Spain has taken an active role in defense of the global environment, signing on to numerous UN sanctioned agreements and protocols related to the global environment and protection of the earth's natural resources. Further, the Spanish government has signed global treaties relating to atmospheric contamination, protection of the ozone layer, the treatment of refuse and dangerous dumps, issues related to whale hunting, climatic changes, the protection of endangered species, and the protection of tropical forests.

Per capita income for the country of 40 million is relatively high compared to some of the other cultures in the study (estimated to be around $23,300). Spaniards, as shown in recent studies, are very aware of environmental problems such as desertification and misuse of natural resources (Mangus et. al. 1997). The country's eco-tourism industry has benefited dramatically during the last decade, with Spain now ranking as the number two destination for foreigners searching for environmentally oriented tourist destinations (Webb-Hicks 2008). A growing number of eco-tourists increasingly opt for organized tours incorporating environmental awareness as part of their reason for visiting Spain. Nonetheless, Spain had been referred to as the least environmentally sustainable tourist destination in the world (Ham 2008).

As with most countries, Spain is not without its environmental problems. Of the developed countries included in the study, Spain exhibits the most alarming warning signs for potential environmental disaster. It is estimated, for example, that 1/3 of Spain will be a desert within fifty years and virtually all of the remaining glaciers located in the Spanish Pyrenees will be gone within 20 years (Ham 2008). As a result of centuries of unplanned cuttings once extensive forests are now limited to just the Pyrenees and the northern most Asturias-Galicia areas. Fire eliminates another 700,000 to 1,000,000 hectares of forestland each year. As in many parts of South America, government reforestation schemes often meet with difficulties where sheep and goats have freely grazed over large areas for centuries. Despite the setbacks it initially faced, however, the Spanish government began taking dramatic steps in the 1980's to replant many of the deforested areas, planting an average of 92,000 hectares (227,000 acres) annually since that time. Nonetheless, erosion still affects 18% of the total land mass of Spain. The removal of agricultural subsidies has increased crop production to the point where increased soil erosion, water usage, and pesticide contaminations have resulted in 20% of Spain turning into a desert (Pohl 2001).

In addition to deforestation, air pollution is major problem. In 1995, industrial carbon dioxide emissions totaled 223.2 million metric tons (a per capita level of 5.72 metric tons), ranking Spain as the 20th worst country in terms of carbon dioxide emissions. Spain is easily Europe's worse environmental offender and produces 53% more greenhouse gases than it did 15 years ago (Ham 2008). Industrial and agricultural sources contribute to the nation's water pollution problems---which are considered severe by Western standards. Spain is also vulnerable to oil pollution from tankers traveling the shipping routes near the nation's Atlantic and Mediterranean shorelines, with oil tanker spills along its coastlines and beaches remaining a constant problem. Spain's cities produce about 13.8 million tons of solid waste per year. Due to its severe problems with pollution and deforestation, the following hypotheses have been developed:

> H_7: The Spanish sub-sample will exhibit higher knowledge and awareness of environmental problems than either the U.S. or Italian samples.
>
> H_8: The Spanish sub-sample will exhibit lower levels of eco-oriented behavior than either the U.S. or Italian samples.

The United States

The U.S. is one of the world's leading economies with per capita income at $46,000. One of the negative consequences associated with being the world's most prolific consumers is that American families generate much higher levels of waste than the typical family in other areas of the world. The U.S., for example, produces 23% of the world's carbon dioxide emissions (Stephen 2003). Water pollution from the runoff of pesticides and fertilizers is also a major problem for many of the United States' natural waterways. Limited natural fresh water resources in much of the western part of the country require careful management to avoid desertification. More than 125 million Americans suffer from intermittent unhealthy air, while 270,000 miles of rivers and streams are too polluted for fishing or swimming (Stephen 2003). The EPA has found that 34% of the coastal waters of the U.S. have such serious ecological problems that they cannot sustain or support aquatic life or basic human activities such as fishing. The Gulf of Mexico and the Great Lakes are among the worst (Horowitz 2002).

The United States consumes nearly 25 percent of the world's energy, although it has only 5 percent of the world's population. Americans consume more oil per capita than the citizens of any other country in the world, and thus are often indicted as inflicting more harm on the planet than the citizens of any other country. Garbage is also a major problem as each American produces about five pounds of trash each day, up from about three pounds in 1960 and five times the rate in developing countries. Each American uses three times the water as the world average. Not surprisingly, surveys of American citizens indicate a generally pessimistic view over the state of the environment. In a recent survey, 55% of Americans said they expected the world's natural environment to be in worse shape in 10 years, and 60% felt the environment was in poor or very poor shape and would not improve (USA Today 2006). Based on the brief discussion above, the following hypotheses have been developed:

> H_9: The U.S. sub-sample will exhibit a relatively high degree of environmental awareness compared to the other national samples used in the study.
>
> $H_{10:}$ The U.S. sub-sample will be less willing to act vis-à-vis sacrificing consumption for the environment than any of the other national sub-samples studied.

METHODOLOGY

Data Collection

A total of 459 surveys were administered to university students from five national cultures using a survey adapted from the Eco-Scale measurement instrument originally developed for the first study conducted in 1995. See Table 1 below for a demographic profile of the sample. All the data was gathered during a period of time from 2003-2007. The data from Azerbaijan, Spain and Italy was gathered in 2003, the Venezuelan data was collected in 2006 and the U.S. data was collected in 2007. College students are an important segment of society and have been leading crusaders in the modern environmental movement (Thapa 2001). On campus environmentalism can largely be attributed to student activists who have led the way on campuses worldwide for environmental responsibility. This point is particularly noteworthy in countries outside the U.S. where college educations are less common and where college students are generally considered to be among the elite in their respective cultures. Other research has recently found that there is indeed a certain level of concern and worry that exists among college students regarding environmental problems (Fernandez-Manzanal, Rodriguez-Barreiro, & Carrasquer 2007).

Consequently, two of the samples collected outside the United States were obtained with the help of college student volunteers and professors living in the those countries (i.e., Spain and Italy) in 2006. Two of the samples were collected by the researchers themselves while teaching in these countries in 2003 (i.e., Azerbaijan and Venezuela) using student volunteers to back translate the items into the native language of that country. Bilingual individuals fluent in English and the native language of the sample were used in the translation process, with a second similarly equipped control group used to verify the results.

Focus groups were used to ascertain the relevance of items from the original scale, creating the need to update and revise some of the items used in the original scale. Because this was a cross-cultural study, the authors brought no preconceived ideas as to what the specific ecological issues might be in each country, or, for that matter, how well the ideas proposed in many of the original items would relate outside a U.S. based audience. As a result, the items used in the original scale measurement were primarily adapted based on wording considerations and not theoretical or actual observations of the ecological behaviors of the populations used in the sample. The remaining student samples were collected from two U.S. colleges, one located in the South and one along the Atlantic Coast in 2007.

Table 1: Demographic Profile of Sample

Demographic	Category	Percent of Sample
Gender	Male	54%
	Female	46%
Age	16-19	11%
	20-23	36%
	24-27	21%
	28-31	28%
	32 & over	23%
Country (live)	Azerbaijan	7.6%
	Italy	8.5%
	Spain	33%
	United States	33%
	Venezuela	18%
Ethnicity	Caucasian	33%
	African American	25%
	Hispanic	38%
	Other	4%

The sample was 54% male and 46% female. The mean age of the sample was 23, and the largest group of students (36%) were between the ages of 20-23. 33% of the sample was from Spain, 33% from the U.S. and another 18% was Venezuela. The majority the sample was Caucasian (33%), African-American (25%), and Hispanic (38%).

It should also be noted that a second study was conducted using a survey instrument developed concurrently with the survey instrument used in this study. The second set of items included additional statements emphasizing topical issues related to global warming and pollution, deforestation and the destruction of wild life habitat, and the impact of economic development on the ecological environment. While the results of that study are not included in the current research effort, a subsequent follow-up/validation study is underway to compare the findings. As indicated previously, the student samples should not be considered typical of the populations found in each of the countries studied. Indeed, a college education is still somewhat rare in many parts of the world, and so college students from poorer countries might be viewed as quite atypical of the population in those cultures. Nonetheless, given the opportunity to tap into the opinions of even elite members of society offers at least some insight as to the overall level of ecological concern displayed by members of that society.

ANALYSIS AND FINDINGS

Reliability Analysis

The ECOSCALE instrument used had a validated reliability of .929 when first developed in 1995. The 31-item scale used in this study was administered to 459 respondents from five countries, resulting in an initial reliability of .718. During the analysis phase, 14 items were reverse coded in order to insure consistent reliability (i.e., that all items would be consistent with statements that an "environmentally responsible" person would agree with). The recoded items were items 1, 3, 5, 6, 7, 9, 13, 14, 16, 18, 22, 28, 29 and 30. See Appendix A for a copy of the survey instrument.

Several of the items had item to total correlation of less than .20 and were considered too low to be included in the final scale assessment and were therefore deleted from the initial 31-item scale. Removing these items improved the overall scale reliability to .73 (as measured by Cronbach's Alpha). The scale used in the final data analysis included 29 items since further reductions failed to improve the scale's reliability. The items that were deleted from the scale were item 2 and item 24 with item to total correlations of .042 and .031. See Appendix A for a copy of the survey instrument and details of these items.

Principal Components Factor Analysis

Principal components factor analysis was used to determine and confirm the number and dimensions of "Individual Environmental Responsibility." Factor analysis has been cited as a "useful technique for reducing a large number of indicators to a more manageable set" (Gerbing & Anderson 1988). Factor analysis also assists in determining the number of latent variables underlying a set of items and thus, helps form coherent subsets that are independent from one another (Tabachnick & Fidell 1989).

Results of Factor Analysis

The results of the principal components factor analysis using a Varimax rotation yielded 11 factors with eigenvalues higher than 1.00 that explained 62% of the variance. The Kaiser Meyer Olkin Measure of Sampling Adequacy was .672 while the Barlett Test of Spericity was significant at less than .000. Both tests indicate that factor analysis was appropriate for use with this data set (Noursis 1990). Two items did not load higher than .400 on any factor and were removed from the scale. These were items 26 and 27. See Appendix A for a copy of the survey instrument and wording of these items.

Additionally items 7, 13, 19, 25, 26, 28 and 29 were removed from the scale due to split loadings, low factor loadings, and not loading on any factor higher than .40. See Appendix A for a copy of the survey instrument and the wording of these items. The factor analysis was rerun yielding 7 factors having eigenvalues greater than 1. These 7 factors explained 55.64% of the variance. See Table 2 for a summary of factor analysis.

The first factor explained 10.934% of the variance and was named "*Locus of Ecological Control*." An individual agreeing with these five statements obviously feels helpless when confronting environmental problems and thus has little or no personal control over environmental issues. These individuals are no doubt concerned about the destruction of the world's ecosystem. This factor included questions regarding the environmental impact of individual contributions to environmental degradation and their apparent feelings of adequacy or inadequacy to stop others from harming the environment. Factor loadings ranged from .497 to .721.

The second factor explained 9.577% of the variance and was labeled: "*Individual Eco-Activity.*" This factor was composed of four items, and included activities such as reporting the harmful actions of others, encouraging others to be environmentally responsible and doing things to improve the environment. Factor loadings ranged from .549 to .742.

The third factor explained 8.044% of the variance and was labeled: "*Willingness to Participate in Environmental Group Activity*." Individuals signifying agreement with these statements would most likely be members of ecological organizations or community activist groups involved in activities designed to save the environment. Factor loadings ranged from .777 to .867.

The fourth factor explains 7.305% of the variance and was labeled: "*Attitude toward Economic Development*." The statements measure a consumer's attitude toward economic development and industrial involvement in reducing ecological problems. Factor loadings ranged from .642 to .738. Table 4 shows the items comprising "Attitude toward Economic development" with respect to environmental pollution.

The fifth factor explains 6.732% of the variance and was labeled: "*Individual Ecological Value System*." These statements appear to measure the values and belief system of individuals regarding their own (and others') activities vis-à-vis the environment. Individual activities included relate to conservation, energy use, and actions to prevent global warming. Factor loadings ranged from .494 to .768.

The sixth factor explains 6.64% of the variance. This factor was labeled: "*Man's Impact.*" The two items relate to man's impact on the environment and the subsequent environmental damage caused by industrial accidents and man's use of the earth's resources. Factor loadings ranged from .549 to .727.

The seventh factor explained 6.40% of the variance and was labeled: "*Personal Sacrifice*." This one item factor relates to a willingness to sacrifice personal convenience for the environment. The factor loading was .667.

Table 2: Summary of Factor Analysis

Factors	***F**actor **L**oadings*
Factor 1 "Locus of Ecological Control (10.934% of variance explained	
3. The growth of the world's population is not one of the major factors contributing to destruction of the earth's ecosystem.	.608
16. I personally think that the average citizen is powerless to stop environmental pollution.	.721
17. I think my own involvement in environmental activities today will help save the planet for future generations.	.529
22. The earth is so large geographically that people have little impact on the overall ecological conditions of the planet.	.673
30. It is of no use to concern myself with environmental issues because there is simply nothing I can do to fight environmental problems anyway.	.497
Factor 2 "Individual Eco-Activity" (9.577% of variance explained)	
20. I personally, on a routine basis, do things that help the environment (such as recycling, purchasing environmentally friendly products, have my engine emissions checked, etc.)	.549
21. I personally encourage people around me to be more environmentally conscious (such as telling	.727

Factors	Factor Loadings
them not to litter, to conserve energy, to refrain from open burning of garbage, etc.)	
23. People who litter should receive heavy fines and then be forced to clean up their own mess.	.553
31. I would describe myself as someone who is environmentally responsible.	.742
Factor 3 "Willingness to Participate in Environmental Group Activity (8.044% of variance explained)	
11. I am currently involved with (either through membership or active participation) an environmental group or organization dedicated to protecting the environment (e.g. Greenpeace, etc.)	.777
12. I have participated in consumer boycotts and activist campaigns aimed at organizations that I believe are anti-environment	.867
Factor 4 "Attitude toward Economic Development" (7.305% of variance explained)	
4. Product packaging (such as Styrofoam cartons, plastic shrink wrapping, etc) is one source of pollution that could be greatly reduced if manufacturers acted more environmentally responsible	.642
8. This country needs more restrictions on land development (i.e., there should be limits to the amount of farm and forest land in this country that can be used to construct new housing and factories, etc.)	.738
Factor 5 "Individual Ecological Value System" (6.732% of variance explained)	
10. We should limit the use of indoor sporting venues (such as swimming pools and tennis courts) during the winter so that we could save energy	.494
14. I am not offended when I see people wearing clothes made from the fur or skin of exotic animals	.769
15. I believe that we should all be concerned about ozone depletion because the ozone layer helps screen out harmful ultra violet rays.	.497
Factor 6 " Man's Impact on the Environment" (6.64% of variance explained)	
1. Man made environmental accidents usually result in only short-term damage to the environment.	.549
9. Sportsmen (such as hunters and sports fishermen) should not be subject to game limit restrictions (i.e., such as the number of animals/birds they can kill or the number of fish they can catch)	.727
Factor 7 "Personal Sacrifice" (6.40% of the variance explained)	
18. I believe that if I owned a car , I would use it to commute to work everyday rather than be inconvenienced with public transit	.683

There were seven factors which explained 62% of the variance. These factors were locus of control, Individual eco-activity, group activity, attitude toward economic development, individual value systems, attitude toward man's impact, and personal sacrifice. Factor loadings ranged from .497 to .867.

DISCUSSION OF ANOVA FINDINGS

ANOVA is an appropriate statistical technique for comparing three or more means (Hair & Anderson 1987). ANOVA was used to compare each culture (e.g., Azerbaijan, Italy, Spain, Venezuela and the U.S.) on each of the seven dimensions of environmental responsibility in order to assess whether differences exist between cultures.

ANOVA was run on the first dimension, Locus of Ecological Control, with results indicating the existence of very strong and significant differences between and among cultures with regard to feelings of control/helplessness (F = 40.663, P=less than .001). Both the Venezuela (mean 3.9317) and U.S. samples (mean 3.7232) exhibited significantly stronger mean scores on this factor than the other three national cultures. Respondents from the Venezuelan and U.S. apparently believe that individuals can make a difference and do have influence over environmental decisions while respondents from the other three cultures apparently feel less influential. Respondents from Spain (mean 2.9187) and Italy (mean 2.8769) for example, had relatively low mean scores on this factor while respondents from Azerbaijan (mean 3.47) indicated a surprisingly high level of locus of control in comparison

ANOVA was run on the second dimension of environmental responsibility, Individual Eco-Activity, with results indicating significant differences between and among cultures regarding the amount of action taken by individuals to alleviate ecological problems (F = 4.566, P =less than .001). The interesting finding here is that citizens of Azerbaijan (mean 3.8286) and Venezuela (mean 3.5732) were the most willing to take action while citizens of the U.S. (mean 3.3154), Spain (3.2817), and Italy (3.33) were the least likely to take action to alleviate ecological problems.

ANOVA was run on the third dimension of environmental responsibility, “Willingness to Participate in Environmental Group Activity” with respect to each of the five national cultures. The results indicate that differences do exist with respect to group membership in environmental organizations by culture (F= 5.116, P = less than .001.). Spain (mean 2.1667) and Italy (mean 2.1923) were the cultures with the highest mean scores on this factor while respondents from Venezuela (mean 1.9207), Azerbaijan (mean 1.5909) and the U.S. (mean 1.7222) were apparently less willing to participate in environmental group activity.

Results of ANOVA run on the fourth dimension of environmental responsibility, “Attitude toward economic development” once again indicate that attitudes differ sharply among cultures (F = 8.783, P = less than .001) with respect to what business, government and industry can do to protect the environment. Respondents from Spain (mean 3.7567), Venezuela (mean 3.5983) and the U.S. (mean 3.6732) demonstrated a more positive outlook attitude toward the ability of government, business and industry to protect the environment than respondents from either Italy (mean 3.1026) or Azerbaijan (3.0429).

Results from ANOVA on the fifth dimension of environmental responsibility, “Individual Ecological Value System, indicate that attitudes differ marginally among cultures (F = 2.352, P = .053). Venezuela (mean 3.1911) had the highest level of individual ecological value systems. Azerbaijan (mean 3.0784), Italy (mean 3.0085), Spain (mean 2.9378) and the U.S. (mean 2.9249) had moderately lower individual ecological value systems. Interestingly, the U.S. sample had the lowest scores on this factor which included items that appear to relate to individual conservation measures.

Results of ANOVA run on the sixth dimension of environmental responsibility, “Man’s impact on the environment” indicated that this was the only factor where no significant differences appear between cultures. Thus, the majority of cultures are apparently in agreement that man is responsible for the earth’s environmental problems (F = 1.636, P = .164). Spain (mean 3.9533), Venezuela (mean 3.8963), Azerbaijan (mean 3.9429), and the U. S. (mean 3.9013) respondent samples each had fairly high mean scores on this factor compared to that of the sample from Italy (mean 3.5385).

The final ANOVA compared scores on the seventh dimension of environmental responsibility, “Personal Sacrifice.” Results indicate that significant differences exist between cultures as to the amount of comfort individuals are willing to sacrifice in order to save the environment (F = 3.57, P less than .05). Respondents from Spain (mean 2.8267) are apparently the most willing to sacrifice personal convenience followed by Italy (mean 2.6410), Venezuela (mean 2.6341), the U.S. (mean 2.3268), and Azerbaijan (mean 2.1714). While admittedly a single item measurement, there may be no better indicator of an individual’s willingness to sacrifice for the environment than a person who is willing to give up the convenience of a personal automobile for public transportation. Across the board, the mean scores appeared low on this factor. Table 3 summarizes the ANOVA results.

Table 3: ANOVA Results

Factor #	Name of factor or Dimension	F Value	Sig.
1	Locus of Ecological Control	40.063	.0001***
2	Individual Eco-Activity	4.556	.001***
3	Willingness to Participate in Environmental Group Activity	5.116	.001***
4	Attitude toward Economic Development	8.783	.001***
5	Individual Ecological Value System	2.352	.053
6	Man's Impact on the Environment	1.636	.164
7	Personal Sacrifice	3.570	.007**

** = P<.05, ** = P< .01, *** = P < .001. Significant differences exist between cultures with regard to locus of ecological control, individual eco-activity, willingness to participate in environmental group activity, attitude toward economic development and level of personal sacrifice. Marginal differences exist with regard to individual ecological value systems. No differences exist between cultures with regard to man's impact on the environment.*

COUNTRY RANKINGS- DISCUSSION OF FINDINGS

A summary of rankings for each factor is shown below. Final rankings were computed for each country by averaging the rankings for each country on each factor..

Table 4: Rankings on Factors 1-7 for Each Country

Country/Rank	F1	F2	F3	F4	F5	F6	F7	Aver
Azerbaijan	3	1	4	5	2	3	5	3.2
Italy	5	5	2	4	3	5	2	3.7
Spain	4	4	1	1	4	1	1	3.1
U.S.	2	3	5	3	5	4	4	3.7
Venezuela	1	2	3	2	1	2	3	2

The results indicate that Venezuela, followed by Spain and Azerbaijan are the most environmentally responsible countries with the U.S. and Italy tied at the bottom. They would be the least environmentally responsible countries

<u>Azerbaijan Sample</u>

Hypothesis 1, which stated Azeris would demonstrate the lowest levels of environmental concern of any culture, was not supported. While respondents from the Azerbaijan sample ranked lowest on factor 4 (attitude that business and government can solve ecological problems) and factor 7 (willingness to engage in personal sacrifice to save the environment), they ranked highest on factor 2 (individual eco-activity) and factor 5 (individual ecological value systems). Azeris were on the bottom of the list in thinking that government or business would do something to save the environment and they were the culture that was least likely to engage in personal sacrifice. However, they were the most likely culture to take some form of personal individual action to save the environment and were more likely to practice conservation of energy as evidenced by having higher ecological value systems. This suggests that Azeris cannot be considered as having the lowest levels of environmental concern. Since the construct (environmental responsibility) has 7 factors it would be difficult to suggest that the Azerbaijan sample is the least eco-oriented of the five samples, especially since the country's mean ranking (3.2) is higher than both the U.S. (3.7) and Italy (3.7) samples.

Hypothesis 2, which stated that the Azerbaijan sub-sample would have lower levels of faith that government, business or industry would solve environmental problems, was supported. Azeris were the least confident of all cultures in thinking that government would do anything to save the environment. The mean on factor 4 "attitudes for economic development" was 3.04 for the Azeri sub-sample, and this was the lowest mean for all cultures.

Venezuelan Sample

Hypothesis 3, which stated that the Venezuelan sub-sample would have lower levels of environmental concern than other cultures, was not supported. Based on the results, the Venezuelan sample ranked 1st or 2nd on five of the seven factors and no worse than third on any of the factor rankings.
Venezuelans had the highest levels of any culture with regard to locus of environmental control (factor 1). They feel very strongly as citizens that they can do something on an individual basis to save the environment and they were among the top cultures in willingness to take action to save the environment (factor 2). They felt very strongly that government, business and industry can make a difference when it comes to saving the environment (factor 4). Venezuelans had the highest level of ecological value systems and were more likely to practice conservation than other cultures (factor 5). Surprisingly, the Venezuelan sample appears to be the most eco-oriented of all the national cultures studied.

Hypothesis 4, which stated that Venezuelans would demonstrate lower levels of eco-oriented attitudes and behaviors than other cultures in regard to conservation of natural resources, was not supported. The Venezuelan sub-sample ranked highest on factor 5 (individual ecological value systems) which includes items that appear to relate to energy conservation and conservation of natural resources. And of the seven factors related to attitudes and behaviors, the Venezuelan sample was either the highest or among the highest of the groups studied.

Italy Sample

Hypothesis 5, which stated that the Italian sub-sample would demonstrate less faith in an individual's ability to solve ecological problems than would the U.S. and Spanish samples, was partially supported, although the behavior of the Italian and Spanish samples appears to be very closely related. Italy ranked last on factors 1 (locus of ecological control) and factor 2 (individual eco-activity). On factor 3 (willing to participate in environmental group activity), Italy did rank second behind Spain, with the U.S. sample ranking last in terms of eco-involvement. Italians were more likely to feel as citizens that there was little they could do to save the environment.

Hypothesis 6, which stated that the Italian sub-sample will demonstrate less individual willingness to act to solve environmental problems than either the U.S. or Spanish sub-samples, was only partially supported. As with the previous hypothesis, the Italian and Spanish samples tend to mirror one another on factors 2 (individual eco-activity), factor 3 (willingness to participate in environmental group activity), and factor 7 (personal sacrifice) which are the factors appearing to be most aligned with individual willingness to act. On factor 2 (individual eco-activity) with regard to recycling, the Italian sample ranked last of the five national cultures studied, closely followed by the Spanish sample. The US sample score was in the middle of the five countries on factor 2 (2nd). On factors 3 (group activity) and factor 7 (personal sacrifice), however, both Italy and Spain scored the highest of the nations sampled and the U.S. sample was next to last. Italians had the moderately higher levels of conservation of energy (factor 5), highest levels of personal sacrifice (factor 7) and were more likely to be members of an environmental group (factor 3). Yet, Italians had the lowest level of locus of ecological control (factor 1) and attitude toward economic development (factor 4). Thus, Italians were less likely to feel they could do anything on an individual basis to save the environment and did not have much faith that government or industry would help to correct the situation either.

Spanish Sample

Hypothesis 7, which stated that the Spanish sub-sample would exhibit higher knowledge and awareness of environmental problems than either the U.S. or Italian samples, was only partially supported. The factors most related to this hypothesis appear to be factors 4 (attitude toward economic development), factor 5 (individual value systems), and factor 6 (man's impact on the environment). The Spanish sample ranked first on factors 4 (attitude toward economic development) and factor 6 (man's impact on the environment) and next to last on factor 5 (individual value systems) which appears attitudinally rather than awareness or knowledge based. Overall, the Spanish sample appears aware of the environmental issues facing their country.

Hypothesis 8, which stated that the Spanish sub-sample would exhibit lower levels of eco-oriented behavior than either the U.S. or Italian samples, was not supported. The Spanish sample ranked 1st on factors 3 (group activity), factor 4 (attitude toward government), factor 6 (man's impact), and factor 7 (personal sacrifice) and next to last on factors 1 (ecological locus of control), factor 2 (individual eco-activity), and factor 5 (individual value systems). Clearly, the Spanish sample ranks higher on most dimensions of environmental responsibility than both the Italian and U.S. samples. Spain's citizens were more likely to be members of environmental groups than other cultures, were more willing to engage in personal sacrifice, and were more likely to have strong faith that government and industry could solve environmental problems. However, Spaniards as a whole did not feel there was much that the individual citizen could do to solve environmental problems. They were less likely to engage in personal actions to save the environment, and less likely to practice conservation than other cultures.

<u>The U.S. Sample</u>

Hypothesis 9, which stated that the U.S. sub-sample would exhibit a high degree of environmental awareness compared to other cultures, was not supported. Clearly the U.S. sample has opinions not in keeping with what one would expect from individuals who are concerned about environmental issues. The U.S. sample came in last among all the nations studied in terms of its overall rankings on the factors investigated, but had the second highest relative mean score on factor 1, individual locus of ecological control (one's ability to make a difference). The U.S. sample, for example were the least concerned with depletion of natural resources, were very unlikely to belong to an environmental group, were the least likely to conserve energy and the least likely group to take some form of personal action to save the environment. Due to the more individualistic nature of U.S. society, it not surprising that the U.S. respondents felt more empowered than most of the other country respondents. What may be interpreted from the results is that the sample of U.S. respondents believes they could make a difference, but they apparently don't feel the problem is severe enough to take action to correct.

Hypothesis 10, which stated that the U.S. sub-sample would be less willing to engage in personal sacrifice (to save the environment) than other cultures, was supported. The last factor (personal sacrifice) relates sacrificing the convenience of a personally owned vehicle for public transportation, something the U.S. sample is clearly not willing to do. U.S. citizens were the least concerned with depletion of natural resources, the least likely group to conserve energy, and had the lowest levels of personal sacrifice.

CONCLUSIONS

Sharp differences exist between cultures with respect to environmental responsibility. Our findings indicate, completely contrary to our initial expectations, the cultures with the lowest levels of economic development scored higher on factors related to individual ecological concern than the individuals from more economically advanced nations. The findings are surprising from a number of perspectives. First, both Azerbaijan and Venezuela scored the highest on the measures presented, and yet, both countries have decidedly higher levels of pollution and ecological damage, and neither is known for demonstrating the sort of cultural and individual initiative necessary to take the proper steps to control environmental damage. Neither, for example, has the regulatory equivalent of an EPA to enforce environmental standards, and the government of Venezuela with its Marxist economic leanings, appears the virtual antithesis of an environmentally concerned national culture. The per capita income for the average

Venezuelan is quite low and the country's economy is almost completely based on petroleum exports. Ironically, the one national culture expected to score the lowest across the board, was Azerbaijan. With its history of ecological damage, particularly under the former Soviet Republic, its very low per capita income, its economic reliance on petroleum exporting, and its relative backwardness in terms of information and communication, Azerbaijan was expected to fair quite poorly.

Somewhat disappointingly, the U.S. sample appears to be the least concerned over ecological issues, ranking with Italy in last place among the national cultures studied. The two respondent countries demonstrating the highest levels of ecological concern were those of Spain and Venezuela, both Hispanic cultures and neither especially recognized as being overly fanatical when it comes to preservation of the environment. The Italians, like the U.S. respondents, appeared relatively unconcerned over environmental issues based on results from the measurement instrument used in the study. While it was anticipated that the U.S. sample would score lower than many of the other country populations studied on conservation and sacrifice, what was not expected was the apparent lack of concern, or apathy, demonstrated by the U.S. sample. One possible explanation is that the U.S. economy is highly regulated, with EPA standards for air and water quality among the highest in the world. Perhaps as a result of the success these tough standards have had in cleaning up the environment, most Americans really don't see the dramatic effects of rampant pollution that citizens of poorer countries are exposed to on a daily basis. What is encouraging from the results is that the U.S. sample appears to demonstrate a high level of individual ability to act. What is discouraging is that the sample apparently doesn't appear motivated to act. Again, this may be the result of the less visible nature of the problem since most of America's water and air quality is highly monitored and the average citizens obviously believes that the problems are being taken care of by an efficient government watchdog agency.

As stated, poorer countries lack the government based resources to implement the sort of environmental standards enjoyed by most Americans, and hence, the only solution to the problem of ecological damage will be individual action. From that sense, the results may be more encouraging than discouraging, especially since the stereotype of populations from third world type economies often suggests one of a subsistence oriented mindset, apathetic to the environmental destruction taking place around them. Unfortunately, because this was primarily a college student sample, we may be seeing the results of only a small, atypical segment of the populations studied. The fact that the educated and more elite members of those societies appears aware of the problem and somewhat motivated, is at least some small step in the right direction.

While the study was modeled after the research completed in the Stone, et. al. (1995) study using many of the original scale items, an effort was made to revalidate and confirm the scales used in the original measurement instrument. Because the current study included four additional national cultures not originally used in the first study, the authors used judgment calls and best estimates when formulating the hypotheses. Admittedly, some of the cultures used in the study may not have been familiar with many of concepts readily familiar to a U.S. based audience. As a result, the item loadings did not correspond to the original factors on a one-to-one basis.

In closing, because the authors were attempting to assess a rather difficult construct across varied cultures with different social and economic dimensions, the attempt may initially appear less successful than previously hoped. The authors have, however, begun to access the results from a second set of scale items administered to the same set of respondents, and hopefully, the end result will be convergence along factors, with added test reliability and an improvement in construct validity. The authors ultimately believe that while still in the infancy stage, the current research exercise has been useful in helping add new insight into what it means to be eco-oriented on an individual global perspective.

APPENDIX

Appendix A: Copy of Survey instrument (ECO-SCALE)

The following series of questions have been developed in an effort to help us assess an individual's relative level of *environmental responsibility*. Please read each question carefully and then circle the response that best describes how you feel about the issue being addressed. Please complete *all* responses. If you have doubts about a particular statement, or if you have no opinion either way about the issue being raised by a particular question, then please so indicate by circling the neutral response (3). All question items are based upon a 5-point scale depicted as follows:

1=strongly disagree; 2=somewhat disagree; 3=neutral or no response; 4 somewhat agree; 5=strongly agree
I believe that:

Man made environmental accidents usually result in only short-term damage to the environment.

1. Advanced economies share most of the blame for worldwide environmental damage because they produce more industrial waste than less-developed economies.
2. The growth of the world's population *is not* one of the major factors contributing to destruction of the earth's ecosystem.
3. Product packaging (such as Styrofoam cartons, plastic shrink wrapping, etc.) is one source of pollution that could be greatly reduced if manufacturers acted more environmentally responsible.
4. Economic growth considerations should take priority over ecological considerations.
5. The earth's natural resources are virtually infinite and therefore should be used to the fullest extent to increase the human standard of living.
6. The amount of energy I consume personally has little impact on the environment.
7. This country needs more restrictions on land development (i.e., there should be limits to the amount of farm and forest land in this country that can be used to construct new housing and factories, etc.).
8. Sportsman (such as hunters and sports fisherman) should *not* be subject to game limit restrictions (i.e., such as the number of animals/birds they can kill or the number of fish they can catch).
9. We should limit the use of indoor sporting venues (such as swimming pools and tennis courts) during the winter months so that we could save a lot of energy.

I personally:

10. Am currently involved with (either through membership or active participation) an environmental group or organization dedicated to protecting the environment (e.g., Greenpeace, etc.).
11. Have participated in consumer boycotts and activist campaigns aimed at organizations that I believe are anti-environment.
12. Often toss my litter onto the street or out of the window of a moving vehicle
13. Am *not* offended when I see people wearing clothes made from the fur or skin of exotic animals.
14. Believe that we should all be concerned about ozone depletion because the ozone layer helps screen out harmful ultra-violet rays.
15. Think the average citizen is powerless to stop environmental pollution.
16. Think that my own involvement in environmental activities today will help save the planet for future generations.
17. Believe that if I owned a car, I would use it to commute to work everyday rather than be inconvenienced with public transit.

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18. Know that if I saw someone doing something that I felt was harmful to the environment, then I would immediately report that individual to the authorites.

19. On a routine basis, do things that help the environment (such as recycling, purchasing environmentally friendly products, have my engine emissions checked, etc.).

20. Encourage people around me to be more environmentally conscious (such as telling them not to litter, to conserve energy, to refrain from open burning of garbage, etc.).

Generally speaking:

21. The earth is so large geographically that people have little impact on the overall ecological conditions of the planet.

22. People who litter should receive heavy fines and then be forced to clean up their own mess.

23. My country has a government agency or government sponsored watchdog group that helps protect the nation's ecological climate.

24. With the possible exception of gasoline, I try to avoid purchasing products (to include food products) that I know will have a negative impact on the ecology.

25. One of the primary considerations for me when choosing a political candidate to vote for is the individual candidate's stand on environmental issues.

26. I regularly do things such as cut up the plastic rings on six-packs of soft drinks, or recycle aluminum cans and paper products (newspapers, etc.).

27. Everyone should know that ivory, the substance often used to make piano keys and jewelry, is a soft white stone that is mined from deep within the earth.

28. Acid rain only affects those countries with lots of heavy industry.

29. It is of no use for me to concern myself with environmental issues because there is simply nothing I can do to help fight environmental problems anyway.

30. I would describe myself being someone who is environmentally responsible.

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Demographics Section - Circle the response that fits your category

Sex: Male Female

Race:
Caucasian/White
African decent/Black
Hispanic White
Hispanic Non-White
Oriental decent/decent
Arabic/Middle Eastern decent
Other (please specify) ______

Age ____

Education level ______

Nationality/Country of birth__________

Country where you presently live________

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MANAGEMENT COMPETENCIES:ARE THEY RELATED TO HOTEL PERFORMANCE?

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ABSTRACT

This research identified the capabilities used by Canadian hotel general managers during a time of economic stress and examines the relationships between capabilities and hotel performance. The instrument used in this study was the New Zealand Management Capability Index (NZIMCI) and contains eight drivers and a performance measurement. Financial management was identified as the most practiced capability. This finding coincides with other studies and agrees with the results obtained from New Zealand managers. A multiple regression analysis found two drivers within the NZIMCI were significant for hotel performance and were performance leadership and organization capability. However, these two drivers only scored as number three and five respectively out of the total of eight. Financial management, though rated as the highest, was not significant. This disconnect requires further investigation to determine which capabilities have the greatest impact on performance and how managers can prepare themselves for further stressful economic conditions.

KEYWORDS: Competencies, hotel performance, tourism, performance measurement

JEL: M10, M12, M50

INTRODUCTION

The unsettled economic conditions in the travel industry in Canada since 2000 resulted from acts of terrorism, public health concerns such as Severe Acute Respiratory Syndrome (SARS), Bovine Spongiform Encephalopathy (BSE), forest fires, widespread power outages and severe weather including hurricanes and snowstorms. The year 2003 saw the majority of these events. The following describes subsequent revenue losses:

> This past year has been dismal. Yes, the war in Iraq, SARS, the strengthening of the dollar, SARS II, the air industry, and BSE have hit all of us in an almost unimaginable way. This was followed by wildfires and floods in B.C., the blackout in Ontario, Internet worms and viruses and the hurricane in Nova Scotia. By the end of the year, in just six markets of Montreal, Ottawa, Toronto, Niagara Falls, Calgary, and Vancouver, our total tourism losses amount to $1.7 billion. (HAC Annual Report, 2004, p. 19-20)

The severe revenue loss created many challenges for hotel managers and the most arduous test of a manager's abilities occurs during stressful times. It is unknown to what degree a general manager can mitigate external adverse conditions to prevent revenue decreases so this study attempted to identify the capabilities that had the greatest correlations with the hotel performance. The lodging industry at its best can be difficult to manage. When coupled with challenging economic conditions it can become increasingly demanding.

The unique characteristics of the hotel industry can place great demands on its managers. This is because typically hotels operate 24 hours per day, seven days per week, and 365 days per year; are highly labor intensive and seasonal and contain a very diverse complement of employees. In comparison to other industries, these unique job characteristics may exert increased daily management pressures on hotel managers (Rutherford, 2002). Kay and Moncars (2004) stated that due to the hotel industry's challenges of terrorism, political unrest, economic upheavals, technological advances, and overall travel patterns, there is a need to reexamine the knowledge, skills and abilities required for success. This paper will first discuss various competencies identified and the lack of research in linking competencies and performance. The explanation of the methodology and survey usage is given followed by the findings incorporating frequency analysis and multiple regression analysis. The paper ends with a discussion of the findings.

LITERATURE REVIEW

Competencies have been identified as major factors influencing performance of a company and the gaining of competitive advantage (Aung, 2000; Brophy & Kiely, 2002; Conant, Mokwa, & Varadarajan, 1990; Sandwith, 1993; Woodruffe, 1991). Boyatzis in his book, *The Competent Manager* (1982) brought the term *competent* into many discussions on management performance and development and allowed the discussions to move away from indefinable attributes of a personal nature to the safer dimension of behaviors. The term has become commonly used in human resource systems.

Sandwith (1993) conducted a landmark study on competencies. He identified five management competency domains, including: conceptual-creative (1), leadership (2), interpersonal (3), administrative (4), and technical (5) (Sandwith, 1993, p. 45). Sandwith (1993) found that leadership and interpersonal competencies were critical to more than one functional area and management level.

In early research on specific hotel management competencies, Tas (1983, p. 60) identified the most important competencies for hotel manager trainees as:

1. Managing guest problems with understanding and sensitivity
2. Maintaining professional and ethical standards in the work environment
3. Demonstrating poise and a professional appearance
4. Communicating effectively both in writing and orally
5. Developing positive customer relations
6. Striving to achieve positive working relationships with employees.

Tas (1988) defined competencies as “those job activities and skills judged essential to perform the duties of a specific position” (p. 41) and identified the top competencies required by managerial trainees in order of importance as follows: human relations skills, professional ethical standards, diplomacy, and effective oral and written communication skills. Baum (1990) found managers in the United Kingdom identified “management of guest problems with understanding and sensitivity” (p. 14) as the most important competency followed by effective communication. A study of 422 hotel managers in Korea (Chung, 1999) indicated highly rated competency variables as marketing analysis techniques, adapting to changing circumstances, enhancing socialization and interpersonal relationship with employees, identifying and defining problems of operations, and maintaining consistent service quality and developing innovative ways of work. For a more complete list on hotel manager competencies, see Table 1.

Researchers in their studies on competencies (Brophy & Kiely, 2002; Chung, 2000; Raelin & Cooledge, 1995) have included an ongoing debate on the value and application of generic competencies to different industries. Often debated is the question: Is there a set of common generic competencies that all managers require to be successful? Researchers of this view of generic competencies in the human resource discipline have determined “…that off-the-shelf generic competencies cannot serve as a proper model to guide the human resource planning process” (Raelin & Cooledge, 1995, p. 32). Organic competencies are those that apply to a specific managerial job and organization and were determined to be the important factors, especially where flexibility may be required. In the hospitality industry, flexibility and quick reaction are deemed critical skills due to continuous dynamic market conditions.

Researchers that investigated the possibility of a set of universal senior management competencies (Hayes, Rose-Quirie, & Allinson, 2000) found that some managers need different sets of competencies to manage specific circumstances. These researchers also found there are "…some shared competencies that can be usefully developed in the context of generic senior management development programmes" (Hayes et al., 2000, p. 5).

Table 1: Essential Competencies Identified in Research

Researcher(s)	Article/Text Name	Competencies Identified
Orser, 2000	Management competencies and SME performance criteria: A pilot study	Management Capacity (marketing, HR, financial, networks, negotiations, etc.) Managerial Acumen (experience, growing, expanding the firm.) Domain knowledge (depth of industry experience, technical expertise, sector expertise)
Kay and Russett, 2002	Hospitality-management competencies	Leadership, technical, interpersonal, administrative, conceptual-creative
Chung, 2000	Hotel management curriculum reform based on required competencies of hotel employees and career success in the hotel industry	Management analysis techniques, adaptation of environment changes and procurement of employee and job, problem identification and communication, operation techniques and knowledge, innovation
Kay & Moncarz, 2004	Knowledge, skills and abilities for lodging management success	Domains included: Human resources management, information technology, financial management and marketing
Chung-Herra, Enz & Lankau, 2003	Grooming future hospitality leaders: a competencies model	8 overarching factors: communication, critical thinking, implementation, industry knowledge, interpersonal skills, leadership, self-management, and strategic positioning
Brophy & Kiely, 2002	Competencies: a new sector	5 key results areas: customer care, quality and standards, managing staff, achieving profitability, and growing the business
Tas, 1988	Teaching future managers	6 essential competencies out of 36: manages guest problems, maintains professional and ethical standards, demonstrates professional appearance, communicates effectively, develops positive customer relations, strives to achieve positive working relationships with employees.
Quinn, Faerman, Thompson & McGrath, 2003	Text: Becoming a master manager: A competency framework	8 managerial leadership roles: mentor, facilitator, monitor, coordinator, director, producer, broker, innovator
Hellriegel, Jackson & Slocum, 2002	Text: Management" A competency-based approach	6 key competency categories: communication, planning & administration, teamwork, strategic action, global awareness & self-management

This table lists competencies identified in a number of studies and is used to show the varieties of competencies identified.

In Canada, Orser (2003) explored performance and the role of management competencies in small and medium sized firms. Performance was measured using the success factors of market acceptance, self-fulfillment, personal welfare and financial outcomes. The results "revealed that growth in revenues was significantly correlated with the diversity, or breadth, of management skills and with the owner's intentions to pursue growth" (p. 55). These researchers also revealed that no single competency was found to be directly associated with growth. "Rather, growth appears to be a consequence of the interaction of multiple management activities (and the diversity of management experience that results) as well as the owners' determination that their firms would grow" (p. 59).

A great deal of research has occurred in attempts to identify essential competencies and capabilities for management success but there is little to link certain capabilities with performance. Is performance impacted by certain capabilities more so than others or, is it a combination of "management activities" which may induce a possible threshold effect, as Orser (2003) contends?

METHODOLOGY

The purpose of this research was to identify and rate the capabilities of hotel general managers in Canada and to search for correlations between capabilities and business performance. A survey was designed which included basic demographics and incorporated the New Zealand Institute of Management Capability Index (NZIMCI) which asks the respondents to rate a list of given capabilities. In this research, competencies and capabilities are "nested" terms. The NZIMCI was developed by Doug Matheson in 2003. Matheson (2004) defines capability as putting the competencies into practice and the instrument focuses on eight major drivers including: visionary and strategic leadership, performance leadership, people leadership, financial management, organizational capability, technology and knowledge, external relationships, and innovation – product and services. It also contains a performance measurement in which the respondents self-rate their business performance from 0% = no results to a maximum of 100% = excellent performance.

The hotel industry in Canada consists of 6,581 lodging establishments (Hotel Association of Canada, 2004) of which 3,464 operate on a year round basis and contain at least 30 rooms. This criterion is used by KPMG LLP, the consulting company that collects statistics on the Canadian hotel industry for the Hotel Association of Canada. These criteria were also used to define the targeted respondents in this research project.

The survey used self-assessment on a census of the Canadian hotel general managers. The survey was mounted on a web page and the link was emailed directly to the managers. The survey was active for a period of three months from July to October. The completed surveys were analyzed using the Statistical Package for the Social Sciences computer software, version 15. The distribution list was created using the Hotel Association of Canada membership directory, the provincial hotel associations' membership lists and corporate hotel groups who forwarded the request and link to their general managers.

The research questions for this study were:

1. What are the most significant capabilities identified by general managers of hotels as measured by the New Zealand Institute of Management Capability Index (NZIMCI)?
2. What is the correlation between the capabilities of the general manager and hotel performance?

Frequency analysis determined which capabilities were rated the highest. Multiple regressions tested the following equation where HP = Hotel Performance as the dependent variable to assess the role of the eight drivers on the relationship with performance (equation 1).

$$HP = \beta 1FM + \beta 2ER + \beta 3PF + \beta 4PL + \beta 5OC + \beta 6VSL + \beta 7IPS + \beta 8ATK \quad (1)$$

Where:

B = Regression coefficients
FM = Financial management
ER = External Relationships
PL = Performance Leadership

PL =People Leadership
OC =Organization Capability
VSL =Visionary & Strategic Leadership
IPS =Innovation of Products and Services
ATK =Application of Technology & Knowledge

Since no *a priori* hypotheses had been made to determine the order of entry of the eight predictor variables, a direct method was used for the multiple linear regression analysis.

FINDINGS

The survey was sent to 952 general managers and 184 responses were received of which 183 were usable and gave a response rate of 19.2%. Table 2 contains the basic demographics of the respondents.

Research methods involved conducting a frequency analysis to determine the overall capability rating of each competency. This analysis was followed by a correlation analysis to determine which competencies appeared to coincide in practice with higher performance. Cronbach's alpha was used to determine the consistency of ratings for each competency measure. A direct multiple regression analysis was used to determine if performance could be predicted from a combination of variables, namely capabilities such as financial management, people leadership, etc.

Table 2: Demographics

Factor	**Highest Mean/Frequency/Rating**
Gender	Male = 61.7%
Age	Mean = 43.91 years
Education level	College 2 year diploma = 38.3% University Degree = 32.8%
Salary level	51% indicated over $71,000 annual
Average number of years in management	Mean = 16 years
Average number of management positions before GM	Mean = 4.52
Method used to acquire current capabilities Rated: 1 = least important to 5 = most important	Asked for Projects = 3.74 Mentor = 3.53 Moved for promotion = 3.33 Management training programs = 3.02 Classes = 2.78 Memberships with Associations = 2.37
Average times a manager moved properties for a promotion	Mean = 3.16
Number of years in the GM position	Mean = 6.86 years
Size of property	30 – 125 rooms = 52.5% 126 – 250 rooms = 29.0%
Level of competition 1 = low, 2 = medium, 3 = high	3 = 47.5%
Property location	Downtown = 40.43% Suburban = 27.87%

This table shows the basic demographics of the hotel general managers who responded to the survey. The general description of a hotel general manager in Canada is a male, age 44 with a college diploma or university degree who makes over $71,000 per year. He has spent 16 years in management, in five different management positions and used projects to learn. He has moved 3 times for promotions and has 7 years experience as a general manager. The size of property he manages is between 100 – 200 rooms, located downtown in a highly competitive environment.

Frequency analysis of the NZIMCI results indicated that the capability of financial management was rated the highest with a mean of 80.00/100 (n = 174). External relations was rated the next highest with a 78.16/100 mean (n = 174) and performance leadership was the third highest with a mean of 75.04/100 (n = 174). The lowest rated capability was application of technology knowledge with a mean of 69.89/100 (n = 174). A summary of the NZIMCI is in Table 3. These results coincide with Kay & Moncarz (2004) in which upper level executives' financial management knowledge had a stronger relationship with their monetary success than human resource knowledge.

The NZIMCI findings also agree with the New Zealand managers for the 2003, 2004, 2005 and 2006 results. In those studies, the top two highest rated capabilities were also financial management as number one and external relations as number two for the past four years. The internal consistency of the nine NZIMCI scales was computed using Cronbach's Alpha, which indicates the consistency of a multiple item scale (Leech, Barrett, & Morgan, 2005). A reliability coefficient of .86 indicated high reliability and that the items were measuring the construct for which they were intended.

Table 3: New Zealand Institute of Management Capability Index

Rank	Capability	Mean Assessed	Weight	Score
1	Financial Management	80.00	10%	8.00
2	External Relationships	78.16	5%	3.91
3	Performance Leadership	75.04	10%	7.50
4	People Leadership	72.29	10%	7.30
5	Organization Capability	71.26	5%	3.56
6	Visionary & Strategic Leadership	71.04	15%	10.66
7	Innovation – Products & Services	70.23	10%	7.02
8	Application of Technology & Knowledge	69.89	5%	3.49
	Results and Comparative Performance	*74.83*	*30%*	*22.45*
	NZIM Capability Index Rating			**73.89**

The NZIMCI scale contains a maximum rating of 100 and a minimum of zero. The above table contains the scores of the NZIM Capability Index and indicates that the most highly practiced capability is Financial Management followed by External Relationships. The overall score for NZIMCI is 73.89.

Multiple regression analysis is an important tool used in business forecasting models. In this study, its purpose was to analyze the relationship between management capabilities as measured by the NZIMCI and hotel performance. The predictors were the capability levels based on the NZIMCI and included eight capabilities of visionary and strategic leadership, performance leadership, people leadership, financial management, organization capability, technology and knowledge, external relationships, and innovation of products and services. The criterion variable was results and comparative performance. The scale uses a maximum rating of 100 to indicate that the competency is fully practiced throughout the organization to a minimum of 0 to indicate the capability is not in place. Performance is measured using a maximum of 100 to indicate excellent performance in most areas and strong evidence of industry leadership to a minimum of 0 which indicates no results or poor results.

A common problem in regression analysis is multicollinearity, which occurs when two or more predictors contain the same information, resulting in high intercorrelations between some of the predictor variables. The NZIMCI may contain variables that are similar in nature. Table 4 contains a correlation matrix to detect multicollinearity among the variables. The highest correlations were between performance leadership and visionary and strategic leadership at .56, and results and comparative performance and performance leadership, at .55. Due to the use of the words leadership and performance in these scales, respondents may not have differentiated between the two. However, none of the correlations was above .60, and none was negative.

Table 4: Correlations of New Zealand Institute of Management Capability Index

		Vision Strategic Lead	Perf . Lead.	People Lead.	Fin. Mgmt.	Org. Cap.	App. of Tech. & Know.	Ext. Relations	Innov. Prod. & Serv.
Visionary & Strategic Leadership	Pearson Correlation								
Perf. Leadership	Pearson Correlation	.563(**)							
	Sig. (2-tailed)	.000							
People Leadership	Pearson Correlation	.540(**)	.535(**)						
	Sig. (2-tailed)	.000	.000						
Financial Mgmt.	Pearson Correlation	.425(**)	.329(**)	.433(**)					
	Sig. (2-tailed)	.000	.000	.000					
Org. Capability	Pearson Correlation	.475(**)	.375(**)	.482(**)	.446(**)				
	Sig. (2-tailed)	.000	.000	.000	.000				
Application of Technology & Knowledge	Pearson Correlation	.390(**)	.321(**)	.473(**)	.443(**)	.475(**)			
	Sig. (2-tailed)	.000	.000	.000	.000	.000			
External Relations	Pearson Correlation	.236(**)	.241(**)	.313(**)	.364(**)	.311(**)	.377(**)		
	Sig. (2-tailed)	.002	.001	.000	.000	.000	.000		
Innovation Products & Services	Pearson Correlation	.512(**)	.460(**)	.499(**)	.408(**)	.441(**)	.518(**)	.410(**)	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	
Results & Comp. Perf.	Pearson Correlation	.398(**)	.554(**)	.407(**)	.283(**)	.403(**)	.259(**)	.192(*)	.369(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001	.011	.000

**   Correlation is significant at the 0.05 level (2-tailed).*
*** Correlation is significant at the 0.01 level (2-tailed)*
The above table shows the correlations used to detect multicollinearity. None of the correlations was above .60 to indicate such a problem and none was negative.

The multiple regression analysis indicated the predictor variables were significantly related to the results and comparative performance, $F\ (8,165) = 11.56$, $p < .01$. The multiple correlation coefficient R was .60, indicating that approximately 36% of the variance of the performance index in the sample can be accounted for by the capability measures. The coefficients in Table 5 reveal that only two of the eight drivers contained in the NZIMCI had a significant relationship on hotel performance. These two drivers were performance leadership ($\beta = .42$, $p<0.01$) and organization capacity ($\beta = .20$, $p<0.05$).

This finding was not expected as it was thought that financial management would have a relationship with performance as it was rated so highly. Thus Multiple Regression Equation with Standardized Coefficients (equation 2). These were the only two capabilities that were significant as predictors for hotel performance):

$$HP = .42PL + .19\ OC \qquad (2)$$

Where:
PL = Performance Leadership
OC = Organization Capability

Table 5: Regression Results

	Unstandardized Coefficients		Standardized Coefficients	t
	B	Std. Error	Beta	Lower Bound
Constant	19.427	7.424		
Visionary & Strategic Leadership	.011	.098	.009	.108
Performance Leadership	.437	.084	.419	5.172**
People Leadership	.059	.081	.063	.732
Financial Management	.027	.092	.022	.292
Organization Capability	.197	.081	.194	2.441*
Application of Technology &	-.042	.077	-.044	-.545
External Relations	-.013	.071	-.013	-.181
Innovation Products & Services	.074	.085	.073	.872
R	.599			
R Square	.359			
Adjusted R Squared	.328			
F for R	11.56			

**p<.05 ** p<.01*
The above table shows the unstandardized and standardized coefficients of the eight drivers in the NZIMCI. Only two of the drivers Performance Leadership and Organization Capability are significant.

The correlation matrix of the nine scales within the NZIMCI is in Table 6. The correlation coefficients ranged from a low of 0.19 to a high of 0.56. There were only two predictors that were significant, performance leadership (r = .56) and organization capability (r = .40). These two predictors, however, were rated as number three and five, respectively. The financial management capability appears to not have as great an impact on business performance as performance leadership or organization capability. This may lead one to question the overall impact of just one person, the hotel manager, on the property's performance. As the survey was completed by only one person, the general manager, is their perspective actually correct?

Table 6: The Bivariate and Partial Correlations of the Predictors with Performance Index NZIMCI

Predictors	Correlations between each predictor and the performance index	Correlations between each predictor and the performance index controlling for all other predictors
Visionary & Strategic Leadership	.40	.01
Performance Leadership	.56*	.37
People Leadership	.41	.06
Financial Management	.28	.02
Organization Capability	.40**	.19
Application of Technology & Knowledge	.26	-.04
External Relations	.19	-.01
Innovation Products & Services	.37	.07

** p<.05, ** p<.01*
This table shows the correlations of the predictors and the performance index. The two significant drivers were performance leadership with the highest correlation and organization capability.

DISCUSSION

Some long held beliefs that managing human resources, communications, interpersonal skills and other so called 'soft skills' are the most important elements of management were not found in this study. This study of Canadian hotel managers identified the capability of financial management as being practiced with greater diligence during economic stressful times. The business atmosphere during the survey was rated as high 47.5% of the time, which indicates the managers perceived an increase in direct competition. This may have been the reason that financial performance became their focus.

The results of this study also found a fairly strong alignment with the results from the New Zealand managers. The Canadian managers rated the top two highest capabilities, financial management and external relations, the same as the New Zealand managers did over the past four years. However, the overall score on the Index was 73.89 for the Canadian managers and 68.60 for the New Zealand managers in 2006. It appears the Canadian managers are functioning at a higher capability rate.

Frequency analysis indicated that financial management was rated the highest driver with a mean of 80.00/100, implying that this capability is "being practiced consistently across the property with further improvements being made" (NZIMCI, 2003). However, the multiple regression analysis indicates that the only two drivers that were significant or had a direct impact on performance were performance leadership and organization capability. Performance in the NZIMCI is defined as growth in revenue in the past five years; profit performance and economic added value in the past five years. Performance leadership is defined as goal, performance and achievement focused; consistently meeting goals and is better than its competitors. Organization capability is defined as having a culture of innovation and research, balancing strong teams with free individuals and demonstrating strong commitment for learning. This finding agrees with Orser (2003) who contends it is a combination of activities and not a singular one that drives performance.

In addition, during times of stress, these managers may not have felt they were performing better than their competitors were, and/or they may not have had the resources to develop a culture of innovation or continuous learning. This may explain why innovation was rated as only seven out of the eight drivers.

The limitations of this paper include the focus on the hotel industry in Canada and the respondents included only one management position. It is suggested that future research in the areas of management competencies include the team approach, as this is a common strategy in the hotel industry due to the nature of the business.

This study is important for managers to help them prepare for further stressful economic conditions and that they should explore which capability levels they should implement. Other studies are required to examine the disconnect between the rating of the capabilities and the lack of correlations to actual performance to identify how management focuses may change based on environmental forces at play.

APPENDIX

NZIMC Capability Rating Instrument

Introduction

Management capability is demonstrated in business performance, and is the result of management leadership and competence in the key management practices that lead to sustainable business performance and business growth. Capability is defined as "*the demonstrated capability to achieve or accomplish through effective use of abilities for a particular purpose.*"There are nine major drivers of management capability that deliver profitable business growth and which can be used to create an index of management capability. We are asking you to assess **your property's current position** with respect to these nine drivers.

Instructions:

For each of the nine categories that make up the capability index we would like you to tell us what you consider your property's current position. The scale to use for the first eight categories is the following.

Category 1-8 Scoring

Score	Current position of the organization
100	Yes, fully practiced throughout the property. Continually refined and improved as "The way things are done round here"
80	Yes, being practiced consistently across the property with further improvements being made.
60	Yes, being practiced across most of the property most of the time.
40	Yes, being practiced, but only in parts of the property, part of the time.
20	Yes, this has just started
0	No, this is not in place

Underneath each of the first eight categories, please place the number from the scale above that best describes your property's current position. **The score given will therefore be in the range 0 – 100.**

1. Visionary and Strategic Leadership

- Articulates a clear and inspiring vision, actively fosters and encourages ownership of the vision by staff and ensures the vision is well understood, and motivates the employees to work towards achieving goals.
- The vision and supporting goals underpin and guide decisions and behaviors.
- Contributes effectively, with the board, to establishing strategies, objectives and plans with a view to growing the business, while meeting the needs of shareholders, taking account of employee, supplier, customer and other stakeholder interests.
- Demonstrates an international/global perspective and a good understanding of global markets.

Our current position

2. Performance Leadership

- Ensures the organization is strongly goal, performance and achievement focused.
- Balances risk with achievement, not risk avoidance – is not risk adverse
- The property consistently meets its performance goals. The property has a performance track record of growth and of continually improving performance.
- The property's performance consistently is better than its competitors or other comparable properties.

Our current position

3. People Leadership

- Attracts, retains, develops, motivates and leads an effective team capable of achieving company objectives.
- Human resource planning is an integral part of the annual business planning process.
- Provides enhanced leadership – acts as a role model, committed to developing subordinates and leading people.
- Strong on empowerment – allows scope for people to grow
- Maintains a culture supportive of GEN-X & Y values …not stifled by structure and hierarchy.
- Grows people (Grows their CV). Demonstrates ability to work effectively with, and achieve results through, a diverse range of people.
- Creates a stimulating culture.

Our current position

4. **Financial Management**
    - Develops and commits to plans and goals that support sound growth and continuing performance improvement.
    - Leads and manages the business to consistently achieve or exceed set goals.
    - Practices sound and effective financial management of the organization including financial planning, accounting, cash flow management, investment, financial reporting and liaison with financial institutions.

    Our current position

5. **Organization Capability**
    - Builds organization capability, a culture of innovation and research, and an organization dedicated to continuous improvement.
    - Brings about and maintains a "boundary-less" organization, is confident and effective in leading and managing a non-hierarchical structure.
    - Effectively balances strong effective teams with free individuals.
    - Has sound understanding and effective application of best management practices to achieve organizational goals and objectives.
    - Demonstrates strong commitment to continuous learning for both individuals and the organization

    Our current position

6. **Application of Technology and Knowledge**
    - Exploits information technology and bring about a knowledge driven organization.
    - Understand the impact of technology on organization and on work itself.
    - Understand the value and application of knowledge in organizations and demonstrates effective knowledge and information management.

    Our current position

7. **External Relations**
    - Develops and maintain networks and spheres of influence.
    - Ensures the organization has a positive external image through the building effective relationships with all stakeholders including customers, suppliers, and the fulfillment of community and social obligations.

    Our current position

8. **Innovation – Products and Services**
    - Creates the climate for and encourages continuous innovation in products and services.
    - Ensures that innovation is recognized by everyone as important for all aspects of the business and for all its processes – innovation is part of the culture. Innovation leads the business to new dimensions of performance
    - Uses innovation to create new value for the business, its customers and its shareholders.

    Our current position

Category 9 Scoring

Please use the scale below for scoring category 9. Again, the score will be in the range of 0 – 100.

Score	*Current position of the organization*
100	Excellent performance in most areas. Strong evidence of industry leadership in many areas.
80	Good to excellent performance in most areas. Most trends compared against benchmarks show areas of leadership and very good performance.
60	Good performance in many areas. Many trends compared against benchmarks show areas of good performance.
40	Improving trends in many areas. Some trends compared against benchmarks show areas of strength
20	Early stages of developing trends, many results not reported
0	No results, poor results.

9. **Results and Comparative Performance**
    - The performance results are the most important measures of management capability. *The results should include performance relative to competitor(s)*.

    - The key measures* of business performance and business growth in the context of the Management Capability Index could be:
        - Growth in revenue over past 5 years.
        - Profit performance over past five years
        - EVA (Economic Added Value) performance over past five years

    Our current position

*NOTE: The key measures of the particular organization's performance should be used to assess results and comparative performance. NZIMC can be found at http://www.management.co.nz/editable/NZIM_capability_index.html

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BIOGRAPHY

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A VALUE-CREATING NETWORK ANALYSIS FROM SOFTWARE BUSINESS

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ABSTRACT

Increasing global competition is a driving force pushing toward a networked way of doing business, as companies are forced to search for efficiency through co-operation with other companies. The underlying question is how well the companies combine and co-ordinate their value activities with other companies in order to together create an entity that is able to produce value for the end customer. These kinds of entities – namely, value-creating networks – are the focus of the present study. We explore value-creating networks empirically in a specific, dynamic industry setting. Software business is chosen as the empirical context as it represents a dynamic and contemporary industry. The paper presents an empirical research of a focal net consisted of three types of actors: a focal company building complex software systems to its industrial customers; the focal company's suppliers; and the focal company's customers. The research is carried out as a single-case study. In gathering and analyzing the empirical data qualitative research methods are followed. The empirical findings are reversed to theoretical debate on networks, and as an outcome of the study an empirically-grounded model for value-creating network analysis is presented. Additionally, the paper contributes to literature by increasing our understanding of software business characteristics from network point of view.

KEYWORDS: Value creating, business networking, software business characteristics

JEL: M1

INTRODUCTION

Value as a concept has received increasing research interest in recent years in marketing and management studies. Value and value creation have been given particular focus in the field of consumer marketing, but they have gained increasing popularity also in business-to-business marketing. Studies about value creation largely concentrated on the customer's perspective at first, but more recently the supplier's perspective has been taken into account as well. That has led further, toward studies addressing joint value creation in buyer/seller relationships (see, e.g., Forsström, 2003; Ramirez, 1999).

In business-to-business contexts, value creation has been explored at different levels as well. Value creation has been studied both at the level of dyadic business relationships (e.g., Hirvonen & Helander, 2001; Möller & Törrönen, 2000; Anderson & Narus, 1999; Anderson & Narus, 1998; Lapierre, 1997) and, increasingly, at that of business networks (e.g., Thomas & Wilson, 2003; Möller *et al,*. 2002; Kothandaraman & Wilson, 2001; Wedin & Johanson, 2000; Parolini, 1999). Research concerning value creation at the level of business networks has gained worldwide interest: studies have been carried out among scholars representing different disciplines and theoretical backgrounds, and the phenomenon studied here has been labeled in various ways by the different scholars – as, e.g., value creation networks, value-creating networks, value creation systems, or value systems. However, one area of commonality among these studies is that they have been mainly theoretical in nature. As stated by Ulaga (2001), there is still a lack of empirical studies concerning value creation in networks in industrial contexts. Although there are some recent exceptions – empirically-oriented studies of value creation at the level of business networks (e.g., Svahn, 2003; Törmänen & Möller, 2003; Törrönen & Möller, 2003) – there still exists an empirical research gap, which the present study aims to help fill in its own part. We start the paper by short review on software business literature and move on to present the theoretical framework for studying value-creating networks. Then, the main focus of the paper, the empirical study of a focal net in software business is opened up. In the end of the paper, summary and conclusions are presented.

LITERATURE REVIEW: THE SPECIAL CHARACTERISTICS OF SOFTWARE BUSINESS

The software industry has grown rapidly; keeping pace with the general growth of the ICT cluster, and it has a growing importance as an industrial sector in its own right (e.g., Toivonen, 2002; Rajala *et al.,* 2001; Autere *et al.,* 1999; Nukari & Forsell, 1999). One possible way to capture the essence of this fast growing industry is to divide the software industry into smaller segments, which helps to understand more clearly the different ways of doing business related to software. One rather commonly used way to break down the business is to consider embedded software, professional software services, enterprise solutions, and packaged mass products as involving separate kinds of business, as suggested by Hoch *et al.* (1999). Embedded software refers to programs integrated as inseparable parts of system products that include also hardware other than standard computing platforms. Professional software services refer to the work of the software project business (see, e.g., Alajoutsijärvi *et al.,* 1999) or to tailored software (see, e.g., Tähtinen, 2001), for which the customer organization is usually charged an hourly rate, not a fixed price for the software products or components provided. Enterprise solutions include software that is produced for the needs of customer organizations, which usually are quite specific, based on general technological solutions and often also on standard application frameworks. Lastly, packaged mass-market software refers to software products that are provided as they are to several customers.

However, boundaries between the software product business and project business may not be clear-cut, because companies in the project business are seeking productization while at the same time companies in the product business quite often need to do some kind of customization for their products, in order to meet customer requirements. In fact, the software product and software project business should be regarded as the endpoints of a continuum that includes also combinations of product and project business modes (Sallinen, 2002; Alajoutsijärvi *et al.,* 1999).

In order to shed more light on the software industry, a brief discussion concerning the similarities and differences between the software industry and more traditional industries is justified. The discussion pays particular attention to the issue of whether the software business is something special compared to other businesses or is just business as usual. It may be impossible to find a straightforward answer, but some guidelines can firstly be drawn from the discussion in the literature of information/digital economy versus traditional/industrial economy and high technology versus low technology. Varying views have been presented on this issue. For example, Shapiro & Varian (1999) argue for the similarities of the more traditional economy and the digital economy, when pointing out that although technology changes, the basic economic laws remain the same. As an opposing view, several studies concentrating on analyzing the differences between high-tech markets and low-tech markets (e.g., Gronhaug & Möller, 1999; Moriarty & Kosnik, 1989), between software and hardware products and between the corresponding areas of business (e.g., Rajala *et al.,* 2001; Messerschmitt & Szyperski, 2000), and between the information society and more traditional society (e.g., Parolini, 1999; Shapiro & Varian, 1999) can be found. The different views provide fruitful ground for this research: to some extent, the general theories and models drawn from the industrial marketing and management literature can be applied directly in the empirical context of the software business, although there is a need for some modifications, too, due to the special characteristics of software (cf. Messerschmitt & Szyperski, 2003; Sallinen, 2002; Messerschmitt & Szyperski, 2000).

One major difference between the software industry and more traditional industries is that the software industry is much younger. The industry may not be as ready for structuring in system integrator (SI) -

style marketing channels as the more traditional industries are. For example, the development in Western automotive businesses from competitive supplier relationships toward more stable, closer buyer/supplier relationships has taken several decades. It could be argued that the software industry is not yet ready for SI-type business, in the very essence of the concept. Also, the questions related to product architectures differ between more traditional industries and software-intensive industries: the architecture of physical products is simpler and less abstract than that of software products (Sääksjärvi, 1998). It can be argued that the complexity of product architectures in software-intensive industries could delay e.g. the full utilization of commercial software components.

Another important question is whether the software industry will ever be ready for close relationships between the SI and the component supplier, due to the strong role of knowledge and competence in the buying and selling industries and the abstractness of software. When there are continuous and rapid changes in the industry, predictions of future markets are difficult. This can lead to a situation where the buying companies are not ready to give away any parts of their business because they do not know which part of their business is going to be successful in the future. They may decide to hire more software engineers themselves rather than invest in software supplier relationships.

Such a fear of losing future opportunities can prevent the development of close supplier/buyer relationships: it has been argued that in technologically turbulent industries, such as the ICT cluster in general, neither the suppliers nor the buyers want to become deeply engaged with any specific partner. However, the high turbulence often also means scarcity of resources in times of heavy demand for end products, and in such cases, it might be worthwhile to take the risk of trying to develop more co-operative relationships. Due to this it is valuable to make a research on value-creating network in software business.

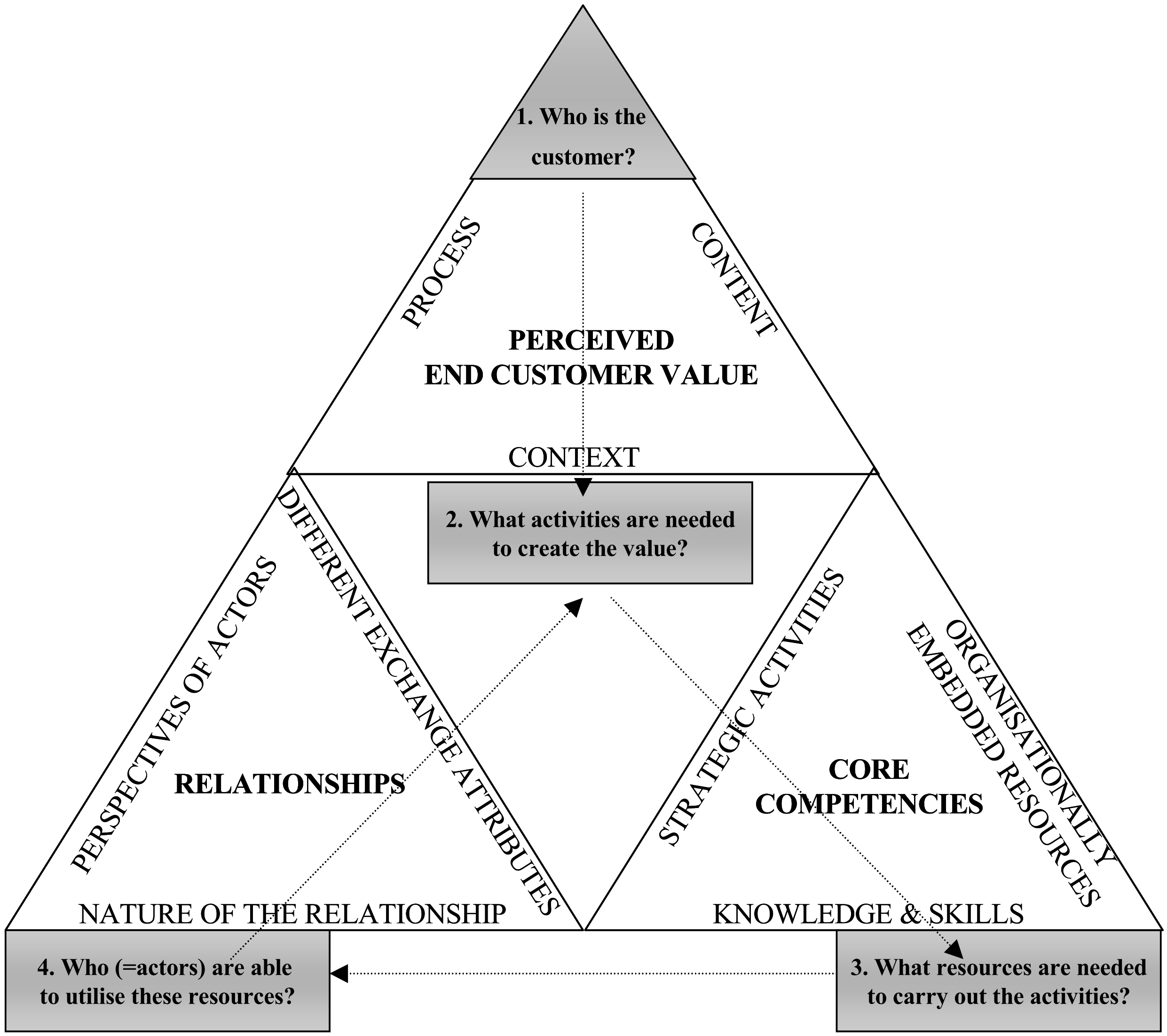
THEORETICAL FRAMEWORK OF THE STUDY

By reviewing earlier research on value and value creation, one can identify a shift from studying value creation at the level of relationships (e.g., Storbacka et al., 1999; Donath, 1998; Lapierre, 1997; Storbacka & Lehtinen, 1997; Donath, 1996) toward studying value creation at the level of networks, nets, and alliances (e.g., Möller et al., 2002; Kothandaraman & Wilson, 2001; Möller & Törrönen, 2000; Parolini, 1999; Doz & Hamel, 1998). One possible reason for such a shift might be the notion of the important relationship between one's own core competencies and the reasonable ways, and number of ways, to try to create value for the customer. In other words, it is not usually reasonable to try to create value for the customer just through the firm itself and its limited competencies if there is the option of allying with other firms that can complement the existing competencies in order to together create superior customer value. For the allying, functional relationships need to be developed and managed. These concepts of value creation, core competencies and relationships, are seen in the present study as elements that together form a framework that can be used in analyzing value-creating networks. The framework is presented in Figure 1.

Based on a theoretical review of network and alliance literature, we argue that customer perceived value is the reason for building networks and matching competencies – without the customer, there is no point in forming relationships in which competencies are joined in order to create value. What the end customer perceives as valuable defines what kinds of competencies are needed in creating the value. Furthermore, the relationships between the network actors are formed based on who is able to utilize the competencies required. In the end, the value is created through the relationships between network actors, and thus the nature of the relationships affects the value outcome. In next, these three interconnected elements are opened up in more detail.

Value itself is one of the most important elements to understand in the analysis. Several definitions can be found in the literature, and in some works, the concept is not precisely defined. This first element of our framework highlights the role of the end customer as the actor determining what kind of value the network should strive to create. Furthermore, the term 'perceived' that we use in our framework refers to the basic nature of value for the customer – the value created by the network is measured in the mind of the end customer. This leads to the fact that the value created is in most cases hard to measure.

Figure 1: Theoretical framework to study value-creating networks (Helander 2004)



This figure presents the connection between the perceived end customer value, the core competencies and the relationships. The perceived end customer value defines what kinds of competencies are needed. The value is created through the competencies of network actors and within the relationships between the actors.

The content, process, and context views can be used as tools to better grasp the value created by the network. The content view emphasizes that value should be measured as the trade-off between benefits and sacrifices that are not only monetary but also non-monetary. The process view emphasizes that value is not merely tied to the actual object of exchange, such as a software component; instead it is dependent on the successfulness of the whole relationship between the customer and the supplier. The context view, for its part, puts forward the notion of differential value: the network should be able to create more value than the end customer could achieve by choosing some other solution created by another, competitive network.

Core competencies can be viewed from several angles, too. A good starting point for the discussion of core competencies is the work of Alajoutsijärvi & Tikkanen (2000), who bring up the relation between competencies and value created for the customer. In their work, they combine three theoretical discussions addressing organizational competencies, business processes, and industrial networks, and they define a core competence as something that 'refers in its most general sense to an organizationally embedded capability that can create differential value through a chain of activities that a customer is willing to pay for' (Alajoutsijärvi & Tikkanen, 2000). Thus, the role of the customer is emphasized in this definition, while it is others' role to see that it is, ideally, delivered something that the customer values as useful and is at the same time difficult to get from other sources. In fact, the degree to which core competence is distinctive depends on how well endowed the company is relative to its competitors and how difficult it is for competitors to imitate its competencies (Teece et al., 1997).

In this study, core competencies are discussed through consideration of organizationally embedded resources, strategic activities, and knowledge and skills, which have been key themes in theoretical discussion about competencies and capabilities (e.g., Alajoutsijärvi & Tikkanen, 2000; Seppänen, 2000; Sanchez & Heene, 1997; Prahalad & Hamel, 1990). Building upon these literatures, a corresponding definition of 'core competence' is provided in this study: core competencies are resources that are organizationally embedded and activities that are strategic in nature. They are knowledge and skills that enable creation of differential and superior value for the customer. Although core competencies are organizationally embedded, they should be regarded as free from exact organizational boundaries in a value-creating network context. In other words, the emphasis is on competencies that the focal network actor is able to utilize, not on competencies that the actor possesses.

In discussing both the concept of value and that of core competencies, the concept of *relationships* is inevitably mentioned. Relationships form the third of the interrelated elements of the framework. Relationships are the foundation of any network analysis, as networks consist of several direct and indirect relationships, but their role as an interlinking element in a study of value-creating networks is even more important: the way in which the value is created is influenced by the nature of the relationships that the network actors have with each other. Therefore, the types of relationships that exist between network actors and changes in these relationships affect the value creation in the business network.

There are several different but interconnected angles for considering business relationship as a concept. For the analysis of value-creating networks, there are three angles related to business relationships that are given more careful consideration: different exchange attributes, the nature of the relationship, and the perspectives of the actors. The different exchange attributes that will be part of the analysis of relationships in a value-creating network are product (and service), information, social exchanges, and financial exchanges. These attributes are closely related to the issue of the nature of the relationship, as the amount and weight of different exchanges vary with the type of relationship. For example, the amount and import of social exchange is more evident in partnerships than in more transactional relationships. The nature of the relationships refers to the different types of relationships as regards their closeness, the relationship's degree of balance, and legal bonds. The phase in the relationship's development can serve as another potential classification criterion. However, the stage of development is not taken into account in this study in detail. On the other hand, the different actor perspectives are included in the analysis in order to provide a more multifaceted and holistic view for value-creating network analysis.

To summarize the discussion about relationships, in our framework, the concept of business relationship refers to a chain of interaction between two organizational parties. During the interaction, different attributes are exchanged for each other. Relationships in a value-creating network context can be viewed from different actor perspectives – e.g., those of the end customer, system integrator, supplier, and intermediary. Different types of relationships can occur between the network actors, depending on the nature of the relationship. One can apply classification criteria such as the closeness of the parties; dominance or balance between the members of the network; and the role and weight of different relationship connectors, including information, social ties, and legal bonds between the parties involved. Additionally, the nature of the product/service under exchange influences the nature of the relationship and its stages of development.

It needs to be pointed out that through the three core elements – value, competencies, and relationships – the elements of actors, resources, and activities are present in the framework, too. The latter three elements are familiar from the ARA model (see Håkansson & Johanson, 1992). It can be argued that it is even impossible to talk about relationships if there are no *actors* – i.e., parties participating in the relationship. Moreover, relationships usually exist for exchange of resources between the parties in the relationship. Additionally, as relationships are identified through interaction events, the notion of activities is already there. The existence of actors, resources, and activities is also inherent in and linked to the elements of value and core competencies, as core competencies were defined as organizationally embedded and strategic *resources* that can create differential *value* for the customer when they are created and used through a chain of *activities* that are carried out by the network *actors*.

In fact, we argue that it would be virtually impossible to carry out a value-creating network analysis without utilizing the concepts of actors, resources, and activities, because as the starting point for a value-creating network analysis is to identify the value created for the end customer, and as the value is something that is *perceived* by the end customer, the end customer as an important *network actor* needs to be identified at the outset. Afterwards, the identification of the *activities* that are needed for the specific value creation in question need to be identified, leading to identification of the *resources* that are needed for carrying out the value-creating activities. These 'steps' are also included in our framework, presented in Figure 1. The interconnectedness of these elements is highly visible. For example, the elements of perceived value to the end customer, core competencies, and relationships are interconnected in nature also when changes occur: a change in one element usually causes changes to the other two elements. For example, if changes in the end customer's appreciation of the value created occur, a different kind of value must be created, and this may require different kinds of competence. Moreover, if the network and the relationships constraining it are built upon and structured by the logic of joining the core competencies of different actors together, changes will occur in the relationships, too.

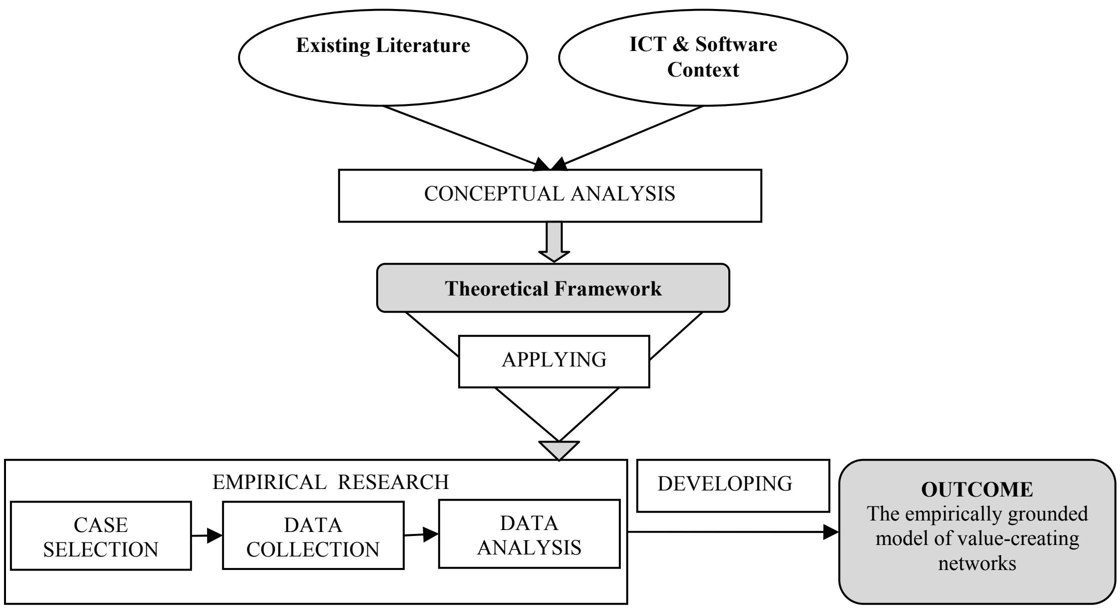
THE SCIENTIFIC APPROACH AND RESEARCH METHODS

On the subjectivist/objectivist continuum of social science research presented by Burrell & Morgan (1979), the present study is positioned toward the subjectivist side. The aim is to interpret and understand the phenomenon under study rather than to arrive at law-like generalizations. The aim is to gather first-hand knowledge and to achieve understanding from inside rather than from outside, by utilizing qualitative research methods. Thus, this research follows idiographic research methodology, as opposed to nomothetic research methodology (see Pihlanto, 1994; Neilimo & Näsi, 1980; Burrell & Morgan, 1979).

Closely related to the research methodology is the choice of inductive and deductive ways of drawing conclusions and building theories; induction is based on empirical evidence, whereas deduction is based on logic. In other words, a researcher applying induction draws theoretical conclusions based on empirical observations while deduction involves formation of hypotheses based on laws and theories before testing of the hypotheses by gathering facts. Although these seem to be opposite approaches, they can both be utilized in the same study. (Ghauri *et al.,* 1995) In fact, although one aim in this study is to add to the general knowledge on value-creating networks, based on findings from the empirical data, information on and a framework for considering such new aspects as are needed in studying software-intensive industries – and the software business in particular. Due to this, this study cannot be labeled purely inductive, but there are also deductive characteristics present because the empirical data are viewed in a certain theoretical framework.

Additionally, Alasuutari (1995) discusses the cyclical movement between theoretical and empirical considerations in qualitative research when he distinguishes between movement to a local explanation from a theoretical framework and vice versa, from a local explanation to theoretical ideas. The theoretical and empirical parts of this study are in a dialogue: the empirical information is analyzed through the developed framework that bases on previous research, but then the framework is revised based on the findings and new ideas emerging from the empirical material. The dialogue between the theoretical and empirical viewpoints forms the core of the research strategy of the present study. Figure 2 illustrates this research strategy.

Figure 2: Research Strategy of the Study



This figure presents the research strategy of the study. The figure presents how the study is carried out by dialectics of induction ad deduction. The existing literature and software context have been the starting point of the study. Through the developed theoretical framework the empirical data is analyzed and new knowledge has been gained. As a result, a model of value-creating networks has been created.

This empirical research is carried out by following a single-case strategy. In gathering the empirical data and in analyzing the data, qualitative research methods are followed. According to Yin (1994), a case study strategy is appropriate when the research problem is of the 'how' or 'why' type. As the present study has an interpretative orientation and aims to understand and interpret the phenomenon from inside rather than outside, also the research problem of the study represents a 'how' form. Furthermore, as the phenomenon of value-creating networks is a contemporary one; it is investigated within its real-life context; and the boundaries between the phenomenon and context are not clearly evident, the case study strategy was a suitable research strategy to adopt. (Yin, 1994)

As already stated, this study has been carried out by qualitative research methods. The choice of qualitative methods is natural, as these are the most suitable research methods when the objectives of the study demand in-depth insights and the aim is to understand the target phenomenon. Additionally, as the present study deals with network analysis, for which a holistic perspective is characteristic, the choice of qualitative methods is all the more appropriate.

METHODOLOGY

The studied case is a focal net consisted of three types of actors: focal company building complex software systems to its industrial customers; the focal company's suppliers; and the focal company's customers. The core competencies are analyzed from each of these three actor perspectives, thus the analysis takes into account both the demand and the supply side of competencies. Additionally, the relationships between the actors are analyzed.

The focal company analyzed in this study can be labeled a high-tech company that operates in the electronics-manufacturing-equipment industry. The company operates in business-to-business markets, providing its organizational customers with a wide range of devices and larger automated production systems based on integration of computing into electromechanical components and products; i.e., the company under study is a typical example of an SI operating in a software-intensive industry. Overall, the focal company is a fruitful example of an SI operating in the ICT cluster, as it can be seen to represent not only the electronics-manufacturing sector but also the industrial automation sector. Moreover, through its main customer base, the company is closely linked to the telecommunications sector, too.

As stated above, the focal company has concentrated on serving customers operating in the telecommunications sector, both large original equipment manufacturers (OEMs) like Sony-Ericsson and Nokia and their contract manufacturers (EMSs), like Flextronics and Elcoteq. However, in the past years, the company has started to search for new customer industries and sectors as well, mostly due to the difficult market situation that has continued in the telecommunications sector. Additionally, the focal company has not always been an SI providing total system solutions. Rather, it started as a pure device supplier, but in recent years it has started to move toward providing entire system solutions, automated production lines. This shift has led the company toward the role of a system integrator that utilizes the newest hardware solutions as well as leading-edge software technology. The shift from device supplier toward system provider has not, however, been easy, as the employees of the company, and especially the salesmen, have not always understood the different business logic that is required in order to be a genuine system provider instead of a device supplier. This lack of knowledge and new situation has been causing several problems not only in the company's customer relationships but also in supplier relationships and within the focal company itself. Moreover, the transformation has been complicated by the decreasing number of employees caused by economic hard times.

The focal company still provides single devices to its customers, but the role of system deliveries is nevertheless growing. What can be called a system delivery is, according to the interviewees, a delivery of a production line that includes not only robotics and all the necessary hardware but also software that manages the entire production line. In this study, the focus is on the software solution that has been developed by the focal company and is provided as an essential part of the total system delivery. Thus, sales of single devices are left out of the scope of this research.

The focal company started to develop the software solution in order to respond to the growing needs of its customers to shorten the ramp-up time of their production and speed up production, leading to the increasing importance of order-to-delivery process management. The software system the company developed enables flexible production processes by making it possible to create and modify production orders, and it allows simultaneous control of production orders without stopping production. This brings flexibility to the customer's production, by providing the chance to use a single production line for both mass and custom production. Thus, no separate production lines for different product variations are necessary and the customer is able to achieve savings in line investments and in floor space, and to have shorter production times.

The focal company designs all the software that is needed in the system solution, but most of the actual software development and implementation work has been acquired from three Finnish software suppliers. These suppliers have been operating mainly as subcontractors, by charging the focal company at an hourly rate, although recently there has been a strong shift toward acquiring the needed software from the suppliers more as components than on a resource-based subcontracting basis. Besides these three main suppliers of software, the focal company has a few other software suppliers and a greater number of suppliers of hardware. These hardware suppliers are not dealt with in more detail in this study because the focus is on studying software and business built around it. Figure 3 illustrates the area of research in this focal net study.

Figure 3: Illustration of the Research Area of the Focal Net Study

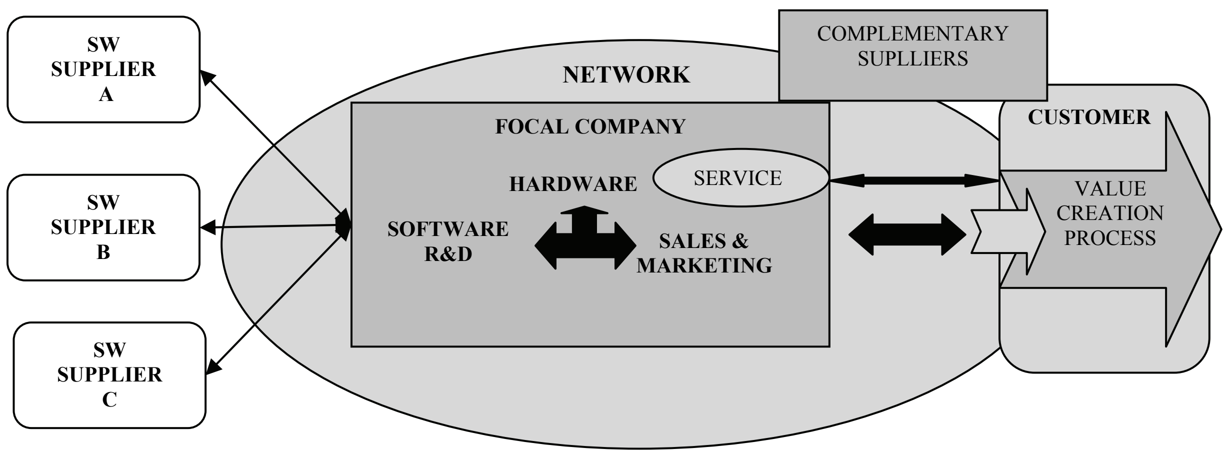


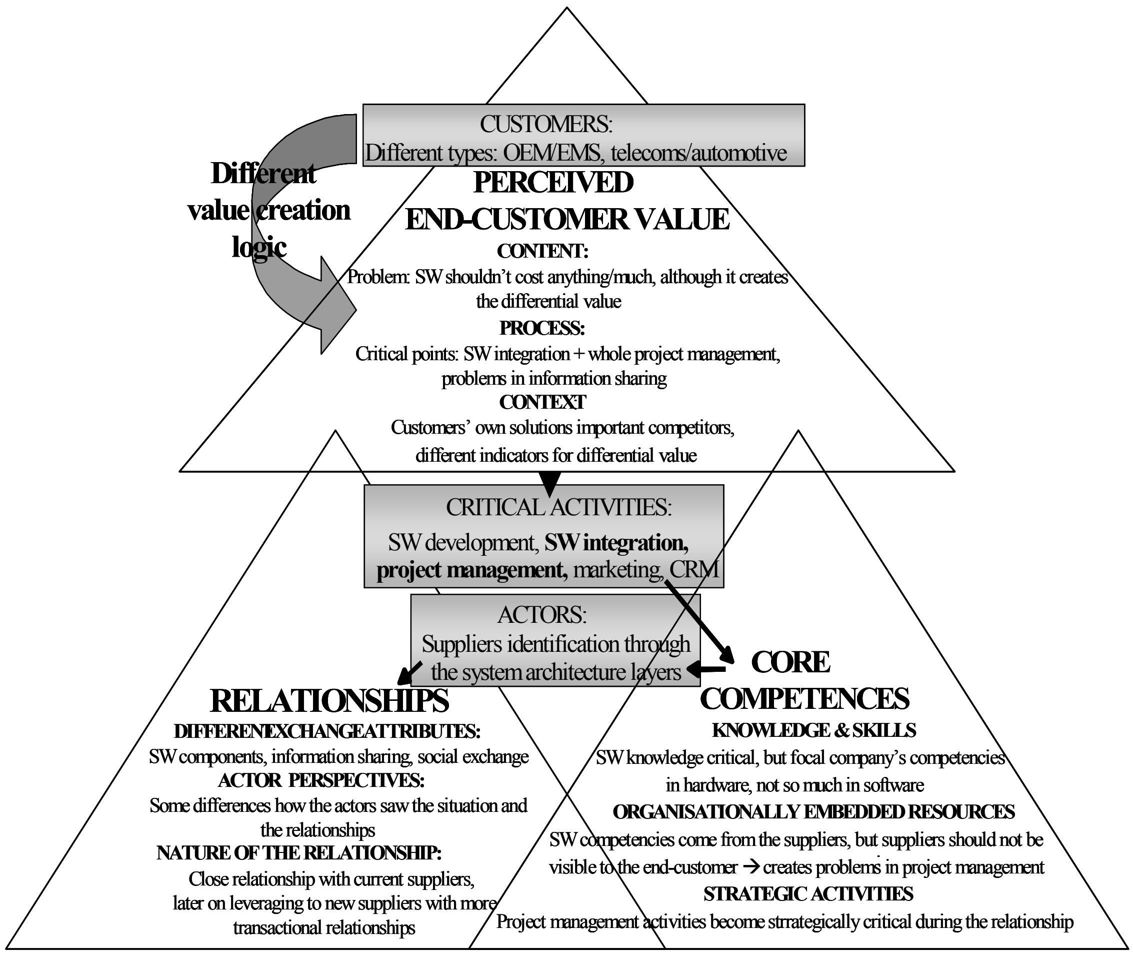
Figure 3 illustrates the context of the research. In the figure the main actors (focal company, its suppliers and its customers) and the relationships between them are illustrated. Through these relationships the value creation process of the customer is supported.

In the middle of the figure is the focal company. For purposes of this study, software R&D has been identified as one of the main functions of the focal company to be studied. However, because the company is providing total system solutions to its customers, also the role of hardware needs to be taken into account at a general level. Additionally, sales and marketing are important functions to consider in deeper analysis. Customers are shown at the right side of the figure. All the customers of the focal company are industrial customers that buy products and system solutions from said company in order to facilitate their own production; i.e., they do not buy products/solutions from the company studied for further sale as part of their own product. In the figure, the value creation process of the customer, and the buying process (that is, the acquisition process) as an inseparable part of it, are identified. On the left side of the figure, the three main suppliers of software have been identified as their own group. As stated above, the focal company has other suppliers as well, but they are not relevant enough from a software standpoint to take into account in the analysis. The suppliers, customers, and focal company itself form part of a broader network that is also illustrated in the figure. However, rather than to study this larger network, the aim is to study more carefully the focal net of the company through examining the level of the relationship portfolio consisting of both the suppliers and the customers of the company.

EMPIRICAL FINDINGS

The focal net level of analysis provided interesting insights concerning the value creation problematic in business networks, although the scope of the analysis was limited to a particular focal net. In here, the key findings are provided. The presentation of the key findings is started by introducing a figure showing the value-creating network framework with the key findings positioned in it (see Figure 4).

Figure 4: Key Findings of the Case Study



The figure depicts the key findings of the study. Identification of different customer types and their value creation logic was the starting point of the analysis. Content, process and context perspectives on end-customer value were analyzed. This led to guidelines for identifying the critical activities of the focal net. The next step was to determine what kinds of resources and core competencies were needed to carry out these critical activities. The system architecture dictated to a rather large extent the division of labor and responsibilities of the different suppliers.

Identification of the different customer types served by the focal net was an important starting point for the analysis, as the value creation logic of the different customer groups varied, an example being the varying business models of the OEM and EMS companies. However, all customers interviewed, regardless of the customer group they represented, undervalued the role of software in the focal system solution, as they weren't ready to pay so much for software, even though the software provided most of the added value for them. As regards the process perspective on perceived end customer value, the biggest shortcomings were in the software integration and overall project management phases. From the viewpoint of the customers, the most problematic matters were the information sharing and forced interaction with several actors, as their desire was to just interact with the focal company. The context perspective on the perceived end customer value was rather interesting in the focal net being examined, as there were only a few competitors that would have been able to provide differential value for the end customers as competing solutions to the focal system solution. However, the customers themselves had in fact developed system solutions competing with that provided by the focal company. In order to defeat such an internal competitor, the focal company should have developed arguments that clearly indicate what kind of differential value the focal system solution can provide. The component-level tracking ability is an example of such an argument.

Identification of the perceived end-customer value also led to guidelines for identifying the critical activities of the focal net. In this case, the most critical activities were software integration and project management, but also CRM, marketing and software development were rather critical. The next step was then to determine what kinds of resources and core competencies were needed in order to carry out these critical activities as successfully as possible. In this case, the focal company did not posses enough software development competencies, and the importance of the software suppliers within the focal net increased. However, this increasing role of the suppliers within the focal net was rather problematic, as the end customers did not want the suppliers to be visible in their relationship interface with the SI. This led to an even more critical and strategic role for the project management activities of the SI.

The system architecture dictated to a rather large extent the division of labor and responsibilities of the different software suppliers within the focal net. The various suppliers saw their reciprocal relationships rather differently, although they all had rather similar viewpoints on the nature of the relationship with the focal company and, furthermore, with the end customers. In practice, the nature of the different relationships did vary. Through the different exchange attributes, consisting of information sharing, social exchange, the object of exchange, and legal and operational bonds, the nature of these relationships can be explained.

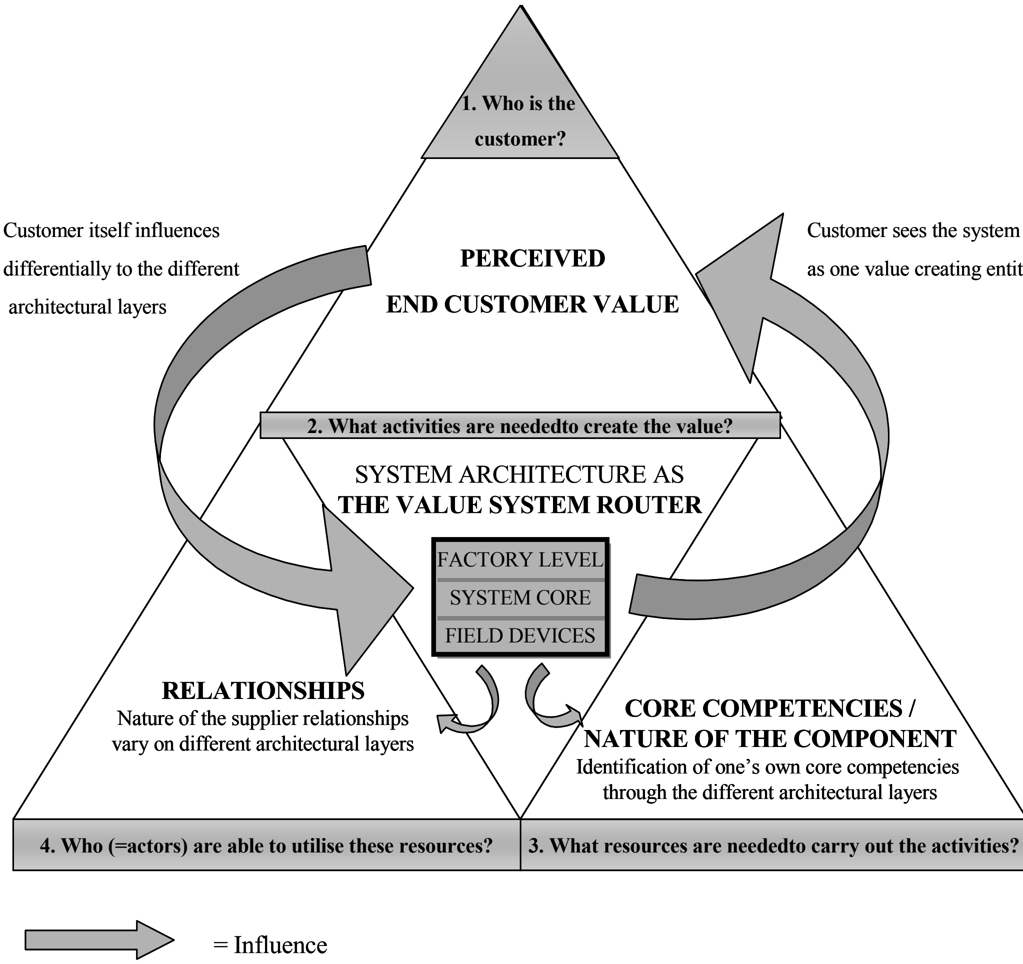
As the informants expressed the value created for the end customer, their core competencies and those of their supplementary suppliers, and the nature of the supplier relationships through the concept of system architecture, the value-creating network and its interconnected elements (perceived end customer value, core competencies, and relationships) must be mirrored through the concept of system architecture in the context of the software business. For that reason, the heart of the empirically grounded model was added a fourth element, the system architecture (see Figure 5).

Thus, the system architecture establishes the layered framework for integrating different components and sub-parts in order to build an effective total system solution for the end customer. Based on the empirical findings, system architecture acts as a value system router, as it gathers value streams from several suppliers at different system layers and then leads the value stream through the integration process to the end customer, which sees the system solution provided as being one value-creating entity. Thus it acts as a funnel for competence input and output. Although system architecture is not a new concept or area of consideration in the fields of technology and industrial management, its role both as a rationale for the specific value network structure and as a tool for understanding actor positioning, competence linking, and supplier portfolio management has not been taken into account in earlier studies.

The system architecture is thus the single most specific feature of the software business that influences the structure of value-creating networks. However, there were also other specific features of the software business that were found to influence the structure of the value-creating network through the elements of perceived end-customer value, core competencies, and especially the element of relationships. These features are somewhat related to the special nature of software as the object of exchange.

As regards the element of value as perceived by the end customer, software as the object of exchange presents difficulties for the network actors in identifying and articulating the value created by the software. In the eyes of the end customer, it doesn’t really matter whether the software included in the system solution is developed in traditional projects priced by the hour or as software components, as the end customer in all cases assumes that the functionality of the overall system solution is the SI’s responsibility, and demands this. However, as software is an intangible product that is valued in terms of what it does, the perception of value on the part of the end customer is related more to the process value added than to the product value added.

Figure 5: The Empirically Grounded Model of Value-Creating Networks Related to the Software Business



In the model of value-creating networks, the special characteristics of software business are visible especially in the form of the system architecture, which has been added as a fourth element to the model besides of the perceived end customer value, core competencies and relationships. The system architecture acts as a value system router through which the value is created to the customer and both the competencies and the relationships are managed.

In a similar way, the element of core competencies is characterized in the software business by the intangible and knowledge-intensive nature of software as the object of exchange. Software is a very knowledge-intensive object of exchange, and the successfulness of software can be argued to be more dependent on the individual's competencies in creating the code than is the case with, e.g., more physical goods. For example, software componentization has been seen as a way is to diminish the danger of losing important competence when a software coder and his/her tacit knowledge leave the company. However, even with software components there remains the demanding task of integration and architecture design; thus, the role of people cannot be diminished even by utilizing software components.

Based on the empirical findings, the nature of the software and the core competencies of the network actors are closely connected to each other, as componentization of software is one way to try to codify the tacit knowledge. Although documentation created during software development has the same aim, software componentization goes one step further. Additionally, the connection between the nature of the component and the competencies was seen through the generality of the component: it is a demanding task to develop general components, but when a supplier is competent enough to develop one, it can enter wider markets in which it can become the critical supplier for many SI companies.

However, the specific features of the software business are particularly visible in the element of relationships, as the significance of the different relationship connectors is clearly emphasized, especially in terms of the information sharing and IPR issues as the legal bonds. The significance of both of these relationship connectors is derived, again, from the intangible and knowledge-intensive nature of software as the object of exchange. To take an example, in the software business the legal agreements on what is done with the source code are important. It is possible for the supplier to retain all control of the source code and then suddenly go bankrupt, leaving the SI in big trouble if the supplied software plays a critical role in the system solution and the SI doesn't have rights to get the source code from the supplier.

In summary, the specific character of software as the object of exchange influences what kinds of relationships the SIs and, on the other hand, the suppliers are willing to develop. From the SI's point of view, the three most important questions related to software are 1) how *critical* the software is for the overall functionality, 2) if there is a need for *modifications*, and 3) how closely *related* that specific software program is *to the core competence* of the buyer. The answers to these questions usually determine how important such other supplier software related matters as IPRs, documentation, testing, quality, and maintenance services are. Furthermore, the answers determine much of what is required of the suppliers and also the nature of the software acquisition process, including, e.g., evaluation of potential suppliers. For example, if the software is not that critical for the SI, evaluation of the potential supplier may be less involved, and the software can even be bought from a company that sells the same software to competitors, too.

DISCUSSION

The result of the study, the empirically grounded model of value-creating networks contributes to the industrial network research tradition. Studies dealing with value creation in inter-organizational relationships, at the level of both dyads and networks, have gained increasing attention from industrial network researchers in recent years. The number of studies that have *empirically* dealt with the value creation phenomenon at the level of *dyads* has been far greater than that of empirically oriented value-creating *network* studies. The present study goes some way toward redressing this lack of empirically oriented studies about value-creating networks by providing a local theory that is grounded in the context of the software business. This contribution can be considered via the question 'What is new in the conceptual basis for the empirically grounded model of value-creating networks?'

Studies concerning technology, high-tech markets, and even the software business from the industrial network perspective are not a new thing for IMP Group researchers. However, the present study has delved more deeply into the technology and software industry, as it has also examined even as technical an element as the system architecture actually is. In fact, the main theoretical contribution of this study can be argued to be *the identification of the influence of the system architecture* as one major factor affecting the structure of the value-creating network. *In the previous literature concerning value creation and industrial networks, such a viewpoint centered on the system product has not been taken into account in as much detail.* Based on the empirical findings of this study, it can be argued that this element has quite an important influence on the network structure. If it is omitted from the network analysis of a software-intensive industry, the outcome may differ considerably from that of analysis that does include such an element. This is because in order to manage the complex process of software development, software companies have been forced to develop and implement product-line architectures that allow a more precise structuring with respect to where and how the different pieces of software should be positioned. This is clearly the case in system products and system solutions because usually they are such large and complex entities that they need special tools in order to be manageable.

The importance of understanding the concept of system architecture in a value-creating network, however, arises from its role as a *value system router* that has multiple effects on the value-creating network. These effects and roles were already examined in more detail, but as a brief summary, the significance of the value system router for the whole value-creating network was identified through its role as an end customer value filter and integrator, as a tool for identifying the network actors' core competencies and actors' positions in the network, and as a tool for supplier network management.

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ELECTRONIC DATA INTERCHANGE IN DEVELOPING COUNTRIES: LESSONS FROM SOUTH AFRICA

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ABSTRACT

Electronic Data Interchange plays an important role in improving organizational competitiveness. This research uses empirical evidence to evaluate the state of EDI and the willingness of SMEs to connect electronically to a large distribution centre in South Africa. Practitioners of EDI are aware of the necessity for high penetration levels to make EDI successful. Furthermore, it investigates the EDI adoption rate from the viewpoint of a small business. However, penetration might be hindered by the refusal of small firms to accept EDI. Based on prior research this model incorporates four factors that are hypothesized to have an influence on EDI Adoption. This survey was concerned about four potential strategies for achieving business objectives namely: organizational readiness, external pressure, perceived benefits and security. Data was collected from 105 firms who responded to an e-mail survey. The findings reveal that external pressure was the strongest positive factor associated with the intent to adopt EDI. No support was found for security. In addition, it suggests that there is a general need for more managerial support as well as compatibility with systems among small firms. Finally, these findings add support to the importance of diffusion of Innovation theories, Interorganizational Systems and Technology Acceptance Models.

KEYWORDS: Electronic data interchange, Inter-organizational systems, diffusion, security

JEL: M15

INTRODUCTION

Businesses today operate in an extremely competitive environment, and many new strategies have been implemented successfully to compete in the marketplace. These strategies have one key element in common, information. Since the acquisition and proper use of information could be vital to all business endeavors, it ought to be considered as a valuable asset. In an intensively competitive environment better and more effective use of information may be considered critical in order to succeed.

More important than organizational information systems are Interorganizational systems. Such systems refer to the "the movement of business documents electronically between firms in a structured, machine-retrievable data format that permits data to be transferred without re-keying, from a business application in one location to a business application in another location" (Hansen and Hill 1989). It can alter the business environment by improving data processing efficiency, decrease errors, reduce costs and create barriers to competition.

Robson (1994) estimates that between 1987 and 1994, computer keyed input taken from a computer-produced document, has grown from 17 to 84 percent. This phenomenon set the stage for the advent of electronic data interchange. EDI has been widely accepted as a business tool used to facilitate inter-organizational transactions and to enhance internal operations by integrating internal and external systems (Chen and Williams, 1998). EDI has been discussed as a technology that can provide several advantages to small firms, however according to Bergeron and Raymond (1997) the adoption rate has not met expectations. Clemens and Row (1993) argue if more firms adopt the technology it could increase the economic welfare of a country, therefore many efforts have been made to understand more about the technology to identify factors affecting the adoption rate.

In the past EDI required extensive set-up costs. This proved to be too costly and complex for small to medium enterprises, which have not been able to realize the benefits of this technology (Bergeron and Raymond, 1997). However due to advances in technology, EDI applications that required main-frame computers to run on can now be used on micro-computers at much lower costs. Small firms are now in a better position to afford this technology.

EDI is used an innovative business tool around the world to enhance business communications. In many developing countries and especially in South Africa , small businesses are the backbone of the economy, but despite this, not many studies have been done on EDI adoption in SMEs. Kuan and Chau (2001) argue that small businesses have certain unique characteristics when compared to larger firms. The general applicability of earlier EDI studies to small firms may therefore be questionable. For this reason, this study extends the investigation of EDI adoption in small to medium firms to a large distribution centre in South Africa.

Different countries in the developing world have different perceptions of the application of EDI. Therefore, it becomes necessary to study the adoption of EDI in various countries, recognizing that the findings in one country could be beneficial to that of another with a similar profile. This study presents the findings of an empirical investigation into adoption barriers affecting EDI among small firms in South Africa. This project builds on the work of Iacovou, Benbasat and Dexter (1995) who developed a model of EDI adoption by small business however, it also includes an additional dimension to the model namely, Security. Their model links together the perceived benefits, organizational readiness and external pressure. The rest of the paper discusses relevant literature, research questions, research methodology, analysis, results and concluding comments.

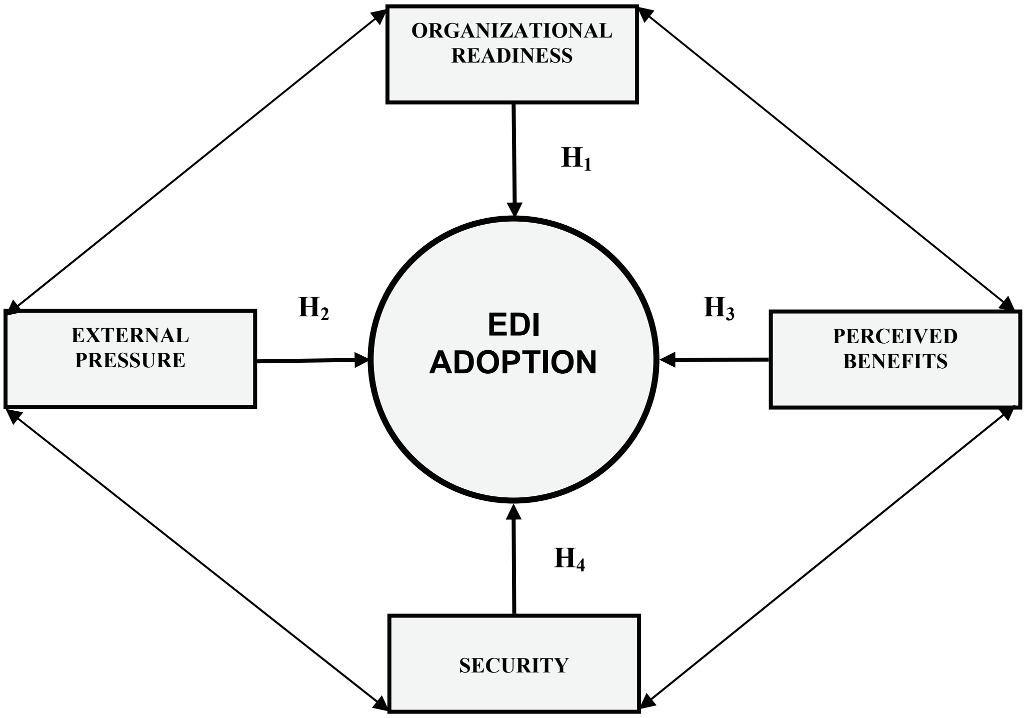
LITERATURE REVIEW

Adoption Model of EDI- Based on the findings of Iacovou et al (1995), factors such as perceived benefits, organizational readiness, and external pressure were found to be the main attributes to adopt EDI. The research in this paper introduces a fourth factor, security. The relationships of these factors are shown in Figure 1.

Organizational Readiness- According to Chwelos, P., Benbasat, I. and Dexter, A. (2001) organizational readiness measures whether the firm has sufficient IT sophistication to undertake the adoption of EDI. IT sophistication does not only refer to the level of technological expertise, but also the management's level of understanding and support in using the technology. More often than not, small firms lack the resources necessary for EDI and Interorganizational redesign (Van Heck and Ribbers, 1999). For a firm to be classified as "technologically ready" it needs to have the minimum office automation equipment, IT usage and IT management.

External Pressure- Refers to the influence arising from several sources within the competitive environment surrounding the firm. Competitive pressure is about the ability of EDI to maintain or increase competitiveness (Chwelos *et al*., 2001). Pressure from third parties relates to the efforts of industry associations to encourage EDI (Chwelos *et al*., 2001). Pressure from trade partners relates to larger firms imposing on smaller firms either to adopt the technology, for their own gains or to be up-to-date with innovative technology (Chwelos *et al*., 2001).

Figure 1: EDI Adoption Model



Research Model: extended from Iacovou et al., (1995). All the variables are closely related. Security was added to this model as it there was insufficient auditability controls in many SMEs.

Perceived Benefits- Refers to the expected advantages that EDI can provide the firm. Benefits include managerial benefits, which could be both direct and indirect (Chwelos *et al*., 2001). Higher managerial understanding of the relative advantage of EDI increases the likelihood of allocation of the managerial, financial and technological resources necessary to adopt EDI (Benbasat *et al.,* 1993). Technological benefits are the use of the technology, new hardware and software as well as skills development. Therefore, small firms with a management team that recognizes the benefits of EDI will be more likely to adopt EDI (Iacovou *et al* 1995). According to Ramaseshan (1997) who surveyed manufactures, distributors and retailers, found that not all barriers to EDI success had negative effects. He furthermore insists that it is important to investigate which obstacles are causing the preclusion in expanding maximum EDI benefits. Murphy and Daley (1999) are of the view that EDI can decrease administrative and transaction costs by a reduction in paperwork and enhanced competitiveness by creating strategic EDI linkages with major firms.

Security- refers to the level of security regarding the protection of data within a firm. The lack of experience and knowledge of security, control and auditability in respect of EDI has contributed to false impressions of unreliability, enforceability of electronic transaction records and legal uncertainty in the electronic trade area (Ratnasingham, 1998). Inadequate or poor information security may be considered both by adopters and non-adopters to be a serious disadvantage (Warwick, 1993 and Weiss, 1993). According to Lim and Jameson (1994), EDI external security risks are partially under the control of other parties such as trading partners and VAN's. They furthermore assert that it includes lost messages, data transferred to the incorrect recipient, or sending fake confirmations. In a study by Coopers and Lybrand (1990), 50% of their respondents had no internal audit involvement in EDI projects, and more than 80% had no EDI control review, as they were not familiar with the security issues. In analyzing the environment on what the firms should be doing regarding security, Banerjee and Golhar's research (1993) suggests that disclosure of messages, modification of message contents and repudiation will be a serious concern in the future as the tenacity of managers in firms are not strong to ensure that audit and control procedures are in place. They argue that when audits and control procedures fail to detect such security risks, this collapse could severely damage partnerships between firms.

EDI Adoption- Intention to adopt EDI refers to the process in which small firms believe they have the necessary equipment, expertise and financial support to adopt EDI. Therefore, higher perceived benefits, higher organizational readiness, higher external pressure and greater security would lead to a greater intent to adopt EDI. In a Northern Ireland study conducted by Philip and Pedersen (1997) found problems such as return on investment, implementation costs and impact on the firm as some of the barriers affecting EDI Adoption.

DATA AND METHODOLIGY

To investigate the constructs of the EDI model, we collected data by means of an electronic survey conducted between April and May 2006. We applied the survey method in this study because it allows for a "systematic" collection of information and "structured questionnaires" that are the preferred means used for gathering information from a sample, which the researcher is interested in (Baker, 2003). To meet the constraints of the questionnaire we updated some of the previously validated measures.

Where necessary, measures were updated with more current terminology or revised to comply more closely to the general principles of item construction e.g., leading questions, confusing or ambiguous questions avoiding double barreled questions and providing filters for non-opinions (Fowler, 1993). To test the respondents understanding of the questions, we used random probes to check for content validity. As there were two questionnaires, for ease of identification, the headings where printed in different colors. The respondent needed to complete only one questionnaire and specific instructions on how the questions ought to be answered were included.

Sample-The target population was identified as small to medium companies who are conducting business in the Fast Moving Consumer Goods (FMCG), and supplying their products to a large distribution centre. Their names were extracted from the database of a Value Added Network (VAN) company, who was assisting the large distribution centre in the EDI implementation process. 500 email addresses for small to medium firms were used as the population. The unit of analysis for the study was at the organizational level. Purchasing Managers, IT Managers, CEO's and Senior Management were targeted as suitable candidates.

Pilot Study- Piloting the questionnaire is important as it ensures that the questions presented are understandable and it ensures the content validity of the instrument. Multiple items were used to measure most of the constructs. The intention of the pilot questionnaire was to test the questions on Purchasing Managers, IT Managers, CEO's and senior management in 5 companies. After the pilot phase, the questions were modified and reworded where applicable. According to Straub (1989) layout and wording of the questions plays an important role in receiving a good response rate. Further modifications were made such as the sequencing of the questions.

Survey Procedure- Firstly, a cover letter was emailed with the survey package stating the purpose of the study and the strict confidence of the data. The confidentiality of responses was assured and a summary of the results as indicated on the questionnaire would be available to them upon request. Furthermore, the letter stressed the importance of the research and only one questionnaire needed to be completed which would take approximately 15 minutes. We created an email address on the internet under gmail.com. We requested the respondents to email their completed questionnaires to edisurvey@gmail.com or fax to 086 680 9654. Due to spamming alerts, which were setup on most of the small firm's emails, the researcher decided to send the survey package in batches of twenty. The outgoing email consisted of the EDI covering letter, Adopters Questionnaire and Non Adopters Questionnaire. Secondly, due to a poor initial response, a second reminder letter attached with the survey package was emailed again to all the companies who had valid email addresses. Another two weeks was allowed for responses to come in.

Thirdly, a postcard reminder and a thank-you letter was sent out as a final cut off date to encourage those who did not respond to the first two requests to complete the questionnaire. The gross response rate, with a reduction for returns to sender and notifications of refusal to participate was 105 out of 500 or 21%. From the 105 responses, 74 were completed, as firms who had adopted the technology and the balance of 31 were non-adopters. Therefore 70.5 percent were adopters and 29.5 percent were non-adopters. Seven responses were precluded because two had incomplete information and five fell into the category of large businesses of (201+).

Data Collection- The data collection methods include the unit of analysis and the process by which the responses were acquired. The questionnaires were based upon the interview guides developed by Iacovou et al., (1995). The guides in this study were mostly closed format questions therefore, statistical analysis of the answers was possible. The survey package consisted of an EDI Cover Letter, Non Adopters Questionnaire and the Adopters Questionnaire.

RESULTS

The findings were generated from two structured questionnaires. The completed questionnaires were captured in a program called Survey Craft and thereafter imported into a statistical software programme, SPSS for Windows (version 13.0) for analysis.

Classification of Firms Investigated

Questions 1, 2 and 3 collected information about firm demographics, size and the method of information exchange. Two respondents graded themselves in the "other" category, however it was later established that they were part of the "Perishables" cluster. The frequency distributions for non-adopters are illustrated in Table 1.

Table 1: Frequency Distributions For Non-Adopters

Retail Cluster	Number of Respondents
FMCG Dry Goods	12
Hardware	3
Stationery	3
Liquor	1
Fruit & Veg	4
Perishables	6
Other	2

This table shows the frequency distributions for non-adopters. Non-Adopters are those suppliers who refused to adopt EDI as they were mainly concentrating on their core business, e.g. , farmers, bakeries who were in most cases lacking in computer skills

Table 1 shows that a majority of the Non Adopters are in the FMCG dry goods sector (38.7 percent) followed by perishables then by fruit and vegetables, hardware and stationary had equal percentages, and liquor being the least.

Organizational Readiness

The rating scales used for financial readiness was one being "not very important" and five "very important. For scales one and two, a score of 32.3% was rated between 10 firms and a score of 35.5% for scale three on 11 firms. On scales four and five 32.2% was scored amongst 10 firms. It is reasonable to expect that financial costs decrease after the adoption of EDI however, these decreases do take time and require patience. Thirty three percent of respondents indicated that they had the financial resources to adopt EDI (see Table 2).

It was found that financial indicators are one of the distinguishing factors that separated adopters from non-adopters. Although 33% were financially stable, it could be that they did not have the necessary technical skills or the required hardware. On IT, sophistication 35.5% was scored on technological resources on both scales "not very important" and "very important." Twenty nine percent were unsure of their technological resources. On the question of providing a better information structure, 41.9% indicated it as being a priority and 16.1% found it to be not very important. On the item of computer technology, 32.2% or 10 firms indicated that it had a simple infrastructure and 35.5% or 11 firms had sophisticated systems. The remaining 10 had no idea of the level computer sophistication within their firms. Fifty-five percent of firms were of the opinion that they had insufficient financial resources to adopt EDI and 64.5% confirmed that their management was not prepared to adopt the technology. Furthermore, 74.2% of respondents indicated that their firms did not attempt to budget for the adoption of the technology.

In actual EDI adoption situations with distribution centers, the researcher found that many small firms actually could afford the initial set-up costs, but lacked the managerial support. EDI requires a high initial capital expenditure, as there could be a later need to integrate EDI transactions to other systems such as accounting systems thereby realizing the full benefit of the technology. Sixty percent of small firms responded that they lacked technical expertise and resources. Therefore having the necessary financial and technical resources is crucial in the adoption of EDI in small firms.

Regarding internal IT technical expertise and whether firms required the services of consultants to assist with their setting up of EDI, the results showed that 58% of small firms had the required technical expertise. This implies that non-adopting firms are capable of adopting EDI with minimal technical support. In order to maintain their relationships with their trader partners 29% adopted Internet EDI. Internet EDI allows the smaller firms to find alternate trading partners they can conduct business with, who are less coercive and more helpful with the sharing of benefits (Angeles, R., Nath. R. and Hendon, D.W 1998). A few decided to provide links with their trade partners, but due to the lack of technical expertise and resources found difficulties in doing so. In the Hardware, Stationery and Liquor sectors, the level of computerization was very low. It had no IT staff and in many cases, the owner performed multiple tasks.

The correlations between perceived benefits (.585) and external pressure (.358) are significant with organizational readiness. Therefore small firms must have financial resources, good computer systems and resources. The findings indicate that the relationship between organizational readiness and adoption is not very strong. Specifically, on the computer hardware where 32% of the firms had very simple systems and 36% had sophisticated systems therefore trade partner dependency could explain this inconsistent finding.

Table 2: Organizational Readiness

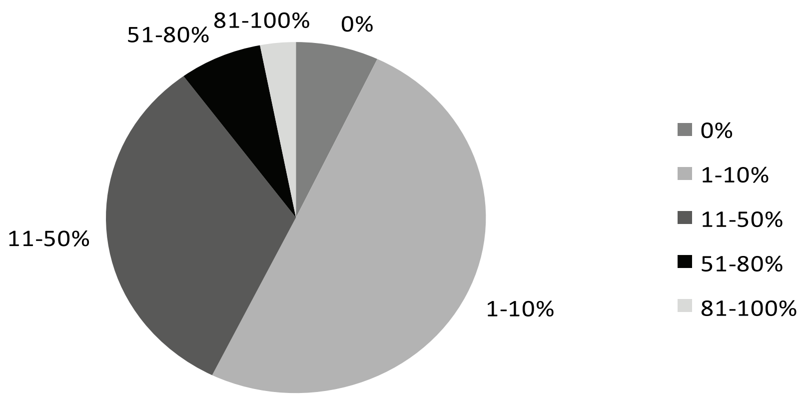
Variable	Min	Max	Mean	Standard Deviation	N
Financial Readiness	1	5	3.7	1.15	31
IT Sophistication	2*	5	3.3	.82	31
Resource Indicators	1	5	3	1.34	31
Composite Score	**2***	**5**	**3.3**	**.74**	**31**

This table shows Organizational Readiness. 2 Question was answered from scale 2 onwards. Organizational readiness means how proactive these firms were in aligning themselves to modern technological and global advances in business.*

External Pressure

Three items relating to pressure from competitors were computed. Figure 2 illustrates the responses of firm's competitors using EDI. Sixteen firms or 51.6% indicated that at least 10% of their competitors were already using EDI. Another 32.3% of firms indicated that close to 50% of their competitors were using the technology. Only one response indicated that between 81 and 100 percent of their competitors was using the technology. Therefore, there is huge pressure from competitors to start utilizing the technology and this is confirmed in the literature that most firms adopted the technology at the same time. Furthermore, 74.2% indicated that they would adopt EDI if their competitors were also using it.

Figure 2: Competitors using EDI



This figure shows the responses of firm's competitors using EDI

Sixty-eight percent responded that they were approached by their trade partners to adopt EDI. Trade partner pressure was the significant contributor to the external pressure summed score. Most firms had close relationships with their trade partners and it implies that they ought to follow what is requested from their bigger partners, since a loss of them could jeopardize their businesses. Some firms indicated that they were pressured into adopting EDI without having known the need for it and without having the necessary resources for the technology. This is consistent with the findings in the literature on a study conducted by Banerjee and Golhar, (1994).

The results indicate that up to 50% of firms are more likely to adopt EDI if required or encouraged by their customers or trade partners, than on a voluntary basis. However, it was found that if a firm's competitor was using EDI, not much pressure was placed on that firm to do so as well. This is in contradiction to the literature, which states that as firms adopt the technology their competitors will follow suit. A majority of respondents (74%) cited that the need to remain competitive was a reason to adopt EDI.

Powerful and larger firms do have a tendency to coerce smaller firms to adopt EDI. In some cases this aggressive approach may not be a very sensible approach because in this study one supplier in the Fruit and Vegetable sector was supplying the DC with a valuable commodity, had a much stronger advantage not to adopt EDI. Third Party pressure was significant in affecting external pressure. Seventy-two percent responded that third party partners had confronted them to adopt EDI. On a face-to-face interview with a few small firms, we found that if their firms did not follow the bigger firms, they were not allowed to conduct business with them. Although 87% responded that they would communicate with other trade partners once they have adopted the technology, more specific focus should be on specific EDI applications such as payments or procurement processes, instead of a broad range of systems as discovered in this study. Forty eight percent of SMEs that adopted EDI indicated that they were pressurized to adopt the technology by third parties. Furthermore, 13% responded that the initiative came from them. This could mean that these SMEs are probably conducting business on a global market where EDI is known to be the preferred method. It could also be that these firms have sufficient IT and technical resources and that their management have long recognized the advantages of being EDI compliant. Surprisingly only 17% of SMEs who have adopted EDI found a big change in the relationship between themselves and third parties.

Pressure from trading partners, which seemed to be the biggest driver of EDI adoption, had a response rate of 67.7%. The literature suggests that this is the case in most small companies where large companies who have all the resources to implement the technology, expect their smaller suppliers to follow suit. In many cases, it is the larger firms that enjoy most of the benefits. When firms were requested to adopt EDI by their most important trading partners, 51.6% “agreed” that they would and 29% “entirely agreed” to the suggestion. This indicates that small firms are obligated to the larger companies, reason being if they do not comply with the larger companies’ requests, they would simply loose the business. Third party companies are mostly in the government and chandling supply industry. The researcher had previous experience in the chandling industry and is aware of the huge profits that could be made especially with international firms. Seventy one percent of firms “agreed” and “entirely agreed” to adopt the technology in order to be part of the tendering process.

Table 3: External Pressure

Variable	Min	Max	Mean	Standard Deviation	N
From Competitors	1	4	3	.77	31
From Trade Partners	2	5	4	.89	31
From Third Parties	1	5	4	.10	31
Composite Score	**2**	**4**	**3.3**	**.55**	**31**

This table shows the external pressures from the various type of suppliers. In many situations SMEs are being pressurized by the bigger corporate s to introduce the technology in their firms because bigger firms will reap the benefits more quicker and be responsive to global pressures as well.

Perceived Benefits

Sixty eight percent of the responses indicated that there would be a reduction in the paper flow within their firms, and 26% responded that it was not very important in their companies. On the question “reduction of response time” which is one of the major benefits in EDI technology, 78% found this to be extremely important in their firms and only 13% responded as not being important. Quality of data becomes an integral part of EDI, as the data is now consistent from the time it leaves the large distribution computer systems until it reaches the receiving companies. Firms realized that this was a huge benefit and the response rate to this question was 81% rating from being important to very important. Furthermore, 74% on both accessibility of information and an increase in efficiency as being important was achieved.

Reduction in costs refers to setting up of trading agreements, company deals, rebates, mailing and faxing of data. Costs are also minimized in the reduction of staff, as less people are now required to maintain accounts. On the question of “reduction in the costs” 74% indicated that it was a very important factor in their firms. Surprisingly, on the question of “cost advantages,” 29% indicated that this was not important and 23% were not sure if there were any. However, 48% seemed to realize that there were definite cost advantages once the technology has been adopted. The effect of EDI can only be seen once there are improvements business processes and less human errors. In retrospect, it seems that the need of small firms for new technology was the motivating factor to adopt EDI as well as the need to establish inter-organizational relationships with their trade partners. The perceived benefits by non-adopter firms on all item responses were satisfactory. It could be seen that smaller firms are not as well informed as larger firms therefore, more awareness should be made to inform smaller firms about the benefits of the technology, which in turn could attract a faster adoption rate.

Notable in the results is the fact that one of the most discussed and important benefits (i.e., a reduction in the costs) was significantly higher at 74% in the case of non-adopters. However, these results were not shown to be significant. Many firms believed that EDI is a tool used to reduce costs. Repeatedly firms argue whether the costs of EDI compared to the benefits received are justifiable. In this study 71% responded that EDI would be justified meaning that small firms were aware of the high costs for adopting and implementing the technology. However, it must be understood that the savings will only occur once high volumes are obtained since it takes small firms a while to gain economies of scale to warrant their initial investment. The researcher has observed whilst working with small firms, that many managers were lacking awareness and knowledge of EDI and this increased the resistance to adopt the technology. Thus, this nervousness of technology could have an adverse effect on trading partners adopting the technology.

Sixty four percent of managers suggested that linking up with their customers and trade partners with EDI would improve services such as customer relations and a reduction in human errors especially with order quantities. This is particularly relevant to firms who are in the fresh line and perishables industry, where maintaining the cold chain is critical. Smaller firms are often cited as having better customer service and being more convenient where larger companies such as distribution centers benefit on operational and strategic functionalities.

Many firms responded that remaining competitive and following what their competitors were doing was an important consideration in EDI adoption as are the needs to reduce response time and increase in efficiency company processes. Although the results indicate a positive correlation between perceived benefits, external pressure, organizational readiness and adoption and a very low significant value to the complete model, the findings suggests that perceived benefits also influences the adoption level of EDI.

The highest mean score (4.23) of the benefits for EDI regarding non-adopters, primarily focused on the "accessibility of information," indicating that small firms are lacking the necessary information in adopting EDI. Top managerial support and end user support attitude in the adoption of EDI seems to be another barrier. Research by Moore and Benbasat (1991), have concluded that there is a strong association between the attitude towards the use of technology and the intention to use. Therefore, one may conclude that if the managers or owners of small firms do not have a positive attitude, they will not adopt EDI.

<u>Security</u>

The results on password controls are consistent with the findings in literature, which is common for larger firms to have the financial or technical resources to train their staff on security issues. The changing of passwords was generally present in all firms, but the period for changing it was not as prevalent as in larger firms. A plausible reason could be that many small firms do not have the dedicated IT personnel to administer the network or computer systems.

Control of internal systems and measures may be limited to only a few people and due to this, it would increase the possibility of illegal transactions. Respondents were accessed on various operational and application controls designed to enhance the effectiveness of internal audits on IT. Most of the firms' (71%) scores were extremely low, indicating minimal effort on these audits to enhance the effectiveness of internal controls. As for requesting or receiving confirmation receipts on data exchange 39% of responses indicated that this was not taking place. Security is ranked the third most important issue in IT management across countries and its importance has steadily been increasing.

Finally, when a firm concerns itself on the issue of EDI security, it must consider the security of its own internal systems as well. Password changes (45%) seemed to have increased in the firms that have already adopted EDI. This could be attributed to the increase use of EDI applications such as Electronic Funds Transfer (EFT) and sensitive data transfer which trading partners require. However, a very low score of 23% indicates that although they have adopted EDI, computer audits were still not being done in their firms. This should be a major concern for managers.

Intent to Adopt EDI

Ten firms or 32% responded that they do not intend adopting the technology. Ten percent of firms indicated that they intended to adopt EDI within 6 months, 23% within a year, 23% within two years and 13% only after 2 years. Firms who responded that they would only adopt after 2 years would probably not do so as the researcher has had the experience with these types of firms who have shown an interest just to remain in business with its trading partners and use the period to prolong its adoption.
Eventually these firms would be removed from the database once the Purchasing managers sourced a new suppliers who are willing to conduct business using EDI. Those firms who indicated "no intention to adopt EDI" were removed from the large distribution centre's database. Table 4 illustrates intention to adopt by period in months.

Table 4: Time Frame to Adopt EDI

Planning to adopt EDI?	FMCG	H/Ware	Liquor	Perishables	Other	Total
No	5	2	1	2	0	10
6 months	1	0	0	2	0	3
12 months	3	1	0	2	1	7
24 months	2	2	0	2	1	7
24 +	1	1	0	2	0	4
Total	**12**	**6**	**1**	**10**	**2**	**31**

This table shows the period in which SMEs would adopt EDI. Experience from the researcher has seen that many of the micro enterprises often do not adopt the technology as they simply do not have the managerial skill and ability to introduce the technology in their firms. These firms are the ones that actually lose business from the bigger firms.

One significant finding of this study is that although external pressure was the strongest driver of EDI adoption, organizational readiness, perceived benefits and security are all closely related to the degree of adopting the technology. Small firms feel that they do not have to adopt EDI, but because of the external pressures, they have to. Furthermore, they feel that there are many issues surrounding security of their data, and feel that although their data is either being transmitted by a VAN or Internet EDI, not enough has been done to convince them on legal issues and risks. Most of the small firms had the necessary organizational readiness resources but actually perceived not to have them. As many small firms do not have IT managers or EDI personnel, this could become a difficult issue to resolve, as 74% indicated that they would hire outside consultants to prepare them for the adoption of the technology.

Hypothesis Testing

The hypotheses were tested using Bivariate Correlation Analysis. The association between each of the independent variables and dependent variable was analyzed using Spearman's rho. Significant correlations at the 5% level were found between EDI Adoption and Perceived Benefits as well as Organizational Readiness. At the 1%, level significant correlations were found between EDI Adoption and External Pressure. Table 5 contains these results. This supports hypothesis 1, 2 and 3. Hypothesis 4 on security was not supported.

Table 5: Correlations

Spearman's rho		EDI Adoption	Perceived Benefits	Security	Firm Readiness	External Pressure
EDI Adoption	Corr. Coeff.	1.000	.368*	.245	.374*	.663*
	Sig. (2-tailed)	.	.042	.184	.0.38	.000
	N	31	31	31	31	31
Perceived Benefits	Corr.Coeff.	.368*	1.000	.150	.589**	.416*
	Sig. (2-tailed)	.042	.	.419	.000	.020
	N	31	31	31	31	31
Security	Corr. Coeff.	.245	.150	1.000	.158	.077
	Sig. (2-tailed)	.184	.419	.	.395	.680
	N	31	31	31	31	31
Firm Readiness	Corr. Coeff.	.374*	.589**	.158	1.000	.434*
	Sig. (2-tailed)	.038	.000	.395	.	.015
	N	31	31	31	31	31
Ext. Pressure	Corr.Coeff.	.663**	.416*	.077	.434*	1.000
	Sig. (2-tailed)	.000	.020	.680	.015	.
	N	31	31	31	31	31

This table shows the association between the independent and the dependent variables.
***. Correlation is significant at the 0.01 level (2-tailed).*
**. Correlation is significant at the 0.05 level (2-tailed).*

Among the independent variables, significant inter-correlations were found at the 5% level between External Pressure and Perceived Benefits, Organizational Readiness and External Pressure. At the 1%, level significant inter-correlations were found between Perceived Benefits and Organizational Readiness. The strong correlation between EDI adoption and External Pressure is corroborated in the literature confirming that there is huge imposition from large companies, trade partners and competitors. There was very little or no significance between Security and hypothesis 1, 2 and 3.

Multiple Regression Analysis

Multiple regression analysis was computed against the four independent variables with EDI adoption as the dependent variable. The adjusted R-square value of .41 indicates that all the independent variables together explain 41% of the variation in the dependent variable.

The individual scores for the independent variables with their significance and coefficients are shown in Table 6 the variable External Pressure is highly significant at the 0% and the direction of the coefficient is positive thereby providing support for hypothesis 2. The greater the perceived benefits of organizational readiness and security the stronger the likelihood that small firms would adopt the technology. However, although the direction of the variables is positive no significance was found at the 10% level.

Table 6**:** Regression Summary Coefficients against Technology Adoption

Variable	Technology Adoption
Security	0.005
Perceived Benefits	-0.062
External Pressure	1.610***
Organizational Readiness	0.236
R-squared (adjusted)	0.410
Intercept	-3.441
P-value	**≤ 0.00**

*This table shows the regression summary of security, perceived benefits, external pressure and organizational readiness. * p<0.05; **p<0.01; ***p<0.001*

CONCLUDING REMARKS

Given the sample size, the findings cannot be confirmed as conclusive, however they do highlight critical EDI related matters. From this study, a few types of firm responses in relation to EDI adoption can be found. Firms that see the benefits of EDI, firms that cannot justify EDI in their business and those who are in a niche market and are confident that their trading partners cannot pressurize them into adopting EDI. On the issue of security, viewed in the light of the responses, the overall effectiveness desperately requires the leadership of management awareness of potential problems with EDI security and support controls.

This study has shown that although there are many benefits, there are more important factors, which requires attention. Organizational readiness, which includes financial readiness, IT sophistication and security, are critical factors that small firms need to consider before adopting the technology. Since EDI demands huge resources in small firms, this strategic importance of EDI should be carefully examined and thereafter presented to top management before the investment can be made. Finally, the success of EDI depends mostly on the adoption rate by SME's and larger corporations must consider non-coercive plans to accelerate the adoption of EDI among their suppliers and customers.

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EVALUATING EFFECTIVE LEADERSHIP QUALITIES OF MANAGERS IN DAY-TO-DAY WORK OF BANKING SECTOR IN PAKISTAN

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ABSTRACT

The objective of this study is to identify and evaluate the effective leadership qualities in day-to-day working environment of banking sector in Pakistan. This study further enlightens its impact over the success factor in banks providing them an edge over competitors. Primary and secondary researches were two methods to gather an up to date data. Questionnaires and interviews from a random sample of 93 respondents provided the most relevant data. This study reveals that effective leadership qualities are the most critical differential factor in generating revenues for banks, in retaining and motivating employees and satisfying customers through high quality service standards thereby nurturing an effective and efficient day-to-day working environment in high contact service industries like banks. This result is also consistent with the literature that the managers are supposed to put more focus not only towards the tasks but also towards the people. This study further indicates that some of the leadership dimensions vary with respect to gender, experience, qualification and designation of managers.

KEYWORDS: Leadership, leadership dimensions, Banking Pakistan

JEL: M10

INTRODUCTION

Financial service in Pakistan has seen tremendous growth for the past few years. There is an increasing trend of investments in the financial services particularly banking sector, which has given rise to fierce competition in the market particularly in the consumer banking. This is also evident from increasing marketing budgets and cutthroat competition. Currently banks are focusing on reaching out to customers rather than to attract customers to their far flung locations and that's why most of the banks are also competing on more number of branches at different locations thereby providing easy access to their valued customers. Banks have developed their own field sales teams and call centers in order to target their potential customers to promote their banking services including personal loans, car financing, home loans and running business finances etc. Increased number of sales teams for different products and for different locations has further augmented the search of effective leadership qualities particularly in team leaders and managers.

In daily routine activities, the employees in the banks particularly team leaders and managers have to go through many situations in which they have to take different decisions, which may or may not differ from their natural personality styles giving rise to conflicts within the departments. In this regard, Chen, Y. et al., (2005) suggests that in order to overcome obstacles and improve productivity, cooperative approach by managers may be an effective way to conflict management rather than competitive or avoidance approaches. Since in the service industry people provide services to the people, therefore the need is to keep the employees motivated and satisfied so that they could consistently deliver their best even when someone is not keeping an eye on them. In view of above, the purpose of this study is to identify the effective leadership qualities in the employees of banking sector and thereby enabling them to execute successful differentiation strategy and to achieve sustainable competitive advantage.

An additional objective of this report is to identify leader's common behaviors or skills in on-the-job situation, who are acting as managers in the banking sector and to highlight the areas of strengths and weaknesses of leaders. This study further aims to find out variation in the leadership styles and that may vary with respect to gender, experience, qualification and designation of managers.

LITERATURE REVIEW

The literature indicates that leadership is a complex concept and despite extensive coverage in the literature, there is no single universally accepted definition of leadership. The literature also indicates that leadership is actually the ability to get others to do something that they would otherwise be reluctant to do, or to do it with greater commitment and confidence. Yukl (1994) and Lim (1997) also suggest that effective leadership is essential for the success of firms. As this study focuses on the effective leadership qualities, therefore more attention would be given on leadership as influencing, motivating, inspiring and coordinating others which are also the common themes of the definitions of leadership provided by Yukl (1989) and Weihrich and Koontz (1993).

In a leadership process, the importance of motivating, inspiring and directing others at all levels are the main connecting factors and managers at all levels realize its importance. Cialdini (1988) states that staff accepts influence from their leader because of their position or respect whereas Bennis and Nanus (1985) argue that the leaders inspire followers and make them feel that they are part of a successful enterprise. The terms 'leadership' and 'management' are often confused but Bennis and Nanus (1985: 21) explain the differences by stating that "*managers are people who do things right and leaders are people who do the right thing*". Zaleznik (1977) state that leadership changes the ways that people think about what is needed and achievable, whereas management relates to the operational details of implementing that change. The literature does not provide a clear-cut distinction between leadership and management. Consistently, Bass (1990) and Kotter (1988) also state that leaders and managers are not necessarily from different backgrounds. Accordingly, Oshagbemi (2006) explains that in fact managers belong to different groups based on their leadership style. However, author further asserts that there are no certain boundaries in between each category and the effectiveness of any group is relative to circumstances.

In banks, particularly in sales and call centers departments, hiring new staff in search of high performers and firing the bad performers is an on going process. In addition to this, most of the staff in these departments is on short-term or temporary basis therefore switching jobs for better opportunities is also a norm in these departments. This requires that HR develop policies and practices carefully in order to attract, motivate, and retain talented employees, which may have also become an asset for the organization (Hippel et al., 1997). Where as Pfeffer and Veiga (1999) believe that downsizing or frequent appointment of temporary staff members for specific products may also result in demoralizing and de-motivating employees who work harder and honestly; therefore key to high performance management practices consider employment security at top priority.

In Pakistan particularly, most of the banks have their own call centers for inbound services as well as for outbound marketing calls thereby developing competencies of their own full time and part time staff members. This is also consistent with the findings of Ulrich (1997) which shows that outsourcing has increased costs and organizations loose the benefit of knowledge gained by long serving employees. Sales targets and nature of job, forces the management to have different contracts with different employees at different times, which also raises the issue of having different employment contracts within the same organization (Lepak and Snell, 1999). This further enhances the problems for leaders in managing teams equally having different contracts. Accordingly, Smith and Kelly (1997) state that only high performing organizations having an image of high character, integrity and credibility are successful not only in recruiting and but also in retaining the best talents.

Leaders having effective leadership qualities can easily overcome new challenges for their teams in the rapidly changing environment and ever-changing consumer needs and preferences. Thomsen and Hoest (2001) consider ‘rewards’ as “*the most powerful and visible management tools that can support changes*”. Therefore, many banks have developed fixed salary structures coupled with bonuses on achieving sales targets in order to keep employees motivated in constantly changing environment. Therefore, Horibe (1999) emphasizes that managers should learn the art of praising at the right time because recognition rewards have more impact. Therefore, timely acknowledgment of effort and performance not only leaves long lasting positive impression but also motivates the employees as being a reward for their effort. Furthermore, Currie and Kerrin (2003) also advise HR practitioners that they should formally intervene in the development of performance management framework for more effective reward system.

Stodgill (1974) states that, effective leadership results primarily from the traits of leaders or their practiced behavioral patterns. Whereas Wright (1996) introduces directive and participative styles of leadership, which caused a shift in thinking from leadership roles to behavior types and is consistent with changes in the business environment as well. This also leads to a trend towards shared responsibilities and clear accountabilities. All the studies examined clearly acknowledge that personal characteristics can influence the effectiveness of leadership and are also consistent with the work of Fiedler (1967) who contends that there are two main leadership styles ‘relationship orientated’ and ‘task orientated’. Where ‘relationship orientated’ leadership focuses on the interpersonal relationships that leaders have with their subordinates and ‘task orientated’ leaders focus on ensuring that the task is completed to the required standard.

Leaders who are highly task orientated and with little consideration for the feelings of the group could be termed ‘autocratic’, whereas leaders with a high concern for the feelings of the group and a low concern for the task could be termed ‘human resource orientated’ (Finlay, 2000). Bass (1990) concludes that transformational leadership has the greatest and most significant impact on performance followed by transactional leadership style. Furthermore, he also confirms that laissez faire (passive) has the least impact on performance. Bass (1985) states that transactional and transformational styles are two separate dimensions of leadership but often leaders adopt both styles at the same time depending upon the situation. He also refers transformational leadership as an extension of the transactional leadership style.

The literature clearly shows that leadership has a significant impact on performance (Hart and Quinn, 1993) and (Keller, 1992). Whereas Lancaster and Van der Velden (2004) find that, there is hardly any implication of market orientation in banks in relation to business performance, leadership styles and employees. Khandelwal (2007) argues that in order to achieve sustainable competitive advantage, the banks should be innovative and adaptive to change in rapidly changing environment particularly in retail banking. Accordingly, Oke (2007) states that incremental innovations are integral part of innovation strategies whereby product innovations in financial sectors are more important and service innovations are important factor in the retail sector. Paradise-Tornow (1991) emphasizes that in order to differentiate one bank from other banks, new competitive strategies are required thereby meeting the challenges of new business environment. Like other organizations and products, banks also need to differentiate their banking services from other banks; therefore, focus towards the quality of service has become an important ingredient of differentiation strategy and requires that leaders should be vigilant enough to make their products and services – always a moving target for their competitors. Consistently, Jones and Kriflik (2006) state that efforts for bringing change have generally focus towards bringing the movement in the existing system and structure rather than developing a completely new one.

Marsh (2006) argues that through education and practice leadership attributes particularly communication and adaptability competencies require more attention to meet the challenges in organizations particularly in service sectors, therefore qualification and experience get more weighting during the selection process of bank managers. Furthermore, Broussine and Miller (2005) state that leaders also have the responsibility to give priority to moral and ethical values in decision making process particularly at the time of hiring or firing staff members because systematic pressures may force them to work in less transparent ways. Kotter and Heskett (1992) conclude that leadership is much more than coordination and conclude that successful firms have effective leadership at the helm having a clear perception of a need for change, effective communication of vision and motivating others. Accordingly, Jas and Skelcher (2005) show that it is almost impossible for organizations to self-initiate turnaround process in the absence of leadership capability therefore the strategies should be focused towards building leadership capabilities for effective change management.

PROBLEM STATEMENT

This study investigates the effective leadership qualities of managers in day-to-day work of banking sector in Pakistan. In order to identify areas of strength and development opportunities in day-to-day work of managers thereby adapting an effective leadership profile to increase overall efficiency in the banking sector of Pakistan, following hypothesis for research are as under:

H_{01}: There is no significant difference between male and female respondents for the different leadership qualities.
H_{02}: There is no significant difference between the undergraduate and master level respondents in the following leadership indicators:
H_{03}: There is no significant difference in respondents with respect to experience.
H_{04}: There is no significant difference in respondents with respect to their designation.

METHODOLOGY

In order to obtain information about leaders' behavior on day-to-day work, data collected through both secondary and primary research. Questionnaires, interviews, direct observation and participant observation were the most important tools in gathering primary data. In order to collect data for leadership qualities in day-to-day work life and efficiency, online databases were helpful. Furthermore, printed material including books and articles were also quite useful in gathering related information and data.

Sampling

The criteria set out for this study included banking sector in the high contact service industry, which is a growing sector in the service industry in Pakistan today. Managers who were responsible for different areas of banking business and managing day-to-day affairs such as loans, car financing, mortgages, opening of accounts etc., were observed and taken under study. Managers from different banks participated in order to study different behaviors and utilization of skills in a day to work. Pakistani and foreign banks contributed valuable information and support for conducting this survey including Habib Bank Ltd., NIB/PICIC Commercial Bank, ABN AMRO, and Saudi Pak Bank. There was no gender restriction in this study. Since these days, women are also taking active part as shoulder-to-shoulder with men in the service industry. Therefore, women's leadership capabilities and skills as managers' are equally important as men. Besides, no age restriction was included.

However, experience was taken into consideration so as to judge whether a person was given such responsibilities on different levels including Line Manager (entry level for managers), Middle Manager (experienced managers having required skills and qualification), and Top Management position (qualification, experience and proven track record). Moreover, education information helped to assess the managerial level position held by a manager in the bank. From a random sample of 150 respondents, only 93 respondents of them participated willingly where as rest made an excuse of their busy schedule as the month of June 2007 was a closing month for their accounts. A number of limitations during the study relate to methodological and conceptual issues. Most important issues include relatively small sample size, length of questionnaire and time constraint.

RESULT AND DISCUSSION

Descriptive statistics computes for the different dimensions of leadership and measure of differences calculate between gender, qualification, experience and designation of the respondents. In order to check the reliability of the scale for the nine dimensions of the leadership, Chronbach alpha was 0.861, which shows that the items measuring leadership construct is reliable.

Table 1: Descriptive Statistics

Leadership Dimensions	N	Mean	Std. Deviation
Developing Others	93	3.74	0.65
Developing Self	93	3.80	0.54
Supporting Team	93	3.68	0.57
Identifying the Pain	93	3.61	0.58
Business Acumen	93	3.58	0.50
Commitment	93	3.83	0.63
Interpersonal Skills	93	3.73	0.58
Pursuit of Excellence	93	3.73	0.41
Accountability / Focus	93	3.60	0.48

Table 1 computes mean and standard deviation of leadership variables. It reveals that the mean value of all the measures of leadership is above 3.5 having minimum mean value of 3.58 for the variable "Business Acumen" and maximum mean value of 3.83 for the variable "Commitment" which shows that among the effective leadership qualities commitment is the most prominent attitude of leadership shown by the respondents.

Table 2: Independent Sample t-Test for Gender

	Levene's Test for Equality of Variances		t-test for Equality of Means		
Leadership Dimensions	**F**	**Sig.**	**t**	**Sig. (2-tailed)**	**Mean Diff.**
Developing Others	0.137	0.712	2.164	0.033*	0.296
Developing Self	0.153	0.697	1.821	0.072	0.209
Supporting Team	0.742	0.391	1.512	0.134	0.184
Identifying the Pain	0.061	0.806	1.677	0.097	0.207
Business Acumen	0.001	0.976	1.879	0.063	0.2
Commitment	2.267	0.136	0.839	0.403	0.115
Interpersonal Skills	0.014	0.905	1.412	0.161	0.177
Pursuit of Excellence	0.901	0.345	-0.106	0.916	-0.09
Accountability / Focus	0.05	0.823	-0.838	0.404	-0.087

** Significant at .05 level. Table 2 shows measure of difference for leadership dimensions among gender using independent sample t-test. The significance value of the statistic is greater than 0.05 for all variables as computed by Levene's test for equality of variance; therefore, assumption is that the groups have equal variances. There is significant difference between male and female respondents for the variable "Developing Others" ($p < .05$) as indicated by t-test for equality of means, therefore reject the null hypothesis. Whereas, accept the null hypothesis for all the other variables when ($p>.05$) which means that there is no significant difference between male and female respondents for all other variables.*

Table 3: Independent Sample t-Test for Graduate and Master Level Respondents

	Levene's Test for Equality of Variances		t-test for Equality of Means		
Leadership Dimensions	**F**	**Sig.**	**t**	**Sig. (2-tailed)**	**Mean Diff.**
Developing Others	0.808	0.371	-0.98	0.33	-0.159
Developing Self	1.815	0.181	-1.667	0.099	-0.223
Supporting Team	0.221	0.639	-1.127	0.263	-0.16
Identifying the Pain	0.065	0.8	-1.288	0.201	-0.186
Business Acumen	0.199	0.657	-1.139	0.258	-0.143
Commitment	6.187	0.15	-0.924	0.358	-0.147
Interpersonal Skills	0.333	0.565	0.285	0.777	0.042
Pursuit of Excellence	1.015	0.316	-2.478	0.015*	-0.252
Accountability / Focus	0.208	0.65	-2.827	0.006*	-0.329

** Significant at .05 level. Table 3 signifies the measure of difference for leadership variables among graduate and master level respondents. The significance value of the statistic is greater than 0.05 for leadership dimensions as shown by Levene's test, therefore assumption is that the groups have equal variances. There is significant difference between graduate and master level respondents for the variables "Pursuit for excellence" and "Accountability / Focus" (p < .05) as shown by t-test for equality of means therefore reject the null hypothesis. Whereas accept the null hypothesis for all the other variables when (p>.05) which means that there is no significant difference between graduate and master levels respondents for all other variables.*

Table 4: Analysis of Variance With Respect to the Work Experience of Respondents

Leadership Dimensions	F	Sig.	Leadership Dimensions	F	Sig.
Developing Others	3.406	0.021*	**Commitment**	2.112	0.104
Developing Self	6.711	0.00*	**Interpersonal Skills**	1.265	0.291
Supporting Team	2.997	0.03*	**Pursuit of Excellence**	3.726	0.014*
Identifying the Pain	2.265	0.086	**Accountability/Focus**	3.623	0.016*
Business Acumen	2.587	0.058			

* Significant at .05 level

Table 4 computes measure of difference for leadership with respect to work experience of respondents using ANOVA test. There is significant difference between the respondents having different work experience for the variables "Developing Others, Developing Self, Supporting Teamwork, Pursuit of excellence, Accountability/ Focus" (p < .05) as depicted in the table 4, null hypothesis is therefore rejected. Whereas accept the null hypothesis for all the other variables when (p>.05) which means that there is no significant difference in the respondents with respect to their work experience.

Table 5: Analysis of Variance With Respect To the Designation of the Respondents

Leadership Dimensions	F	Sig.
Developing Others	0.538	0.586
Developing Self	0.445	0.642
Supporting Team	1.198	0.306
Identifying the Pain	2.603	0.08
Business Acumen	1.628	0.202
Commitment	0.154	0.857
Interpersonal Skills	2.336	0.103
Pursuit of Excellence	0.941	0.394
Accountability / Focus	0.314	0.732

Table 5 shows measure of difference for variables with respect to designation of respondents. All variables have their significance value greater than 0.05 therefore the null hypothesis for all the leadership dimensions is accepted (p>.05) which means that there is no significant difference in the respondents with respect to their designation.

CONCLUSION

This study critically evaluated the role of managers as being leaders in the banks. An analysis of literature identifies that a task-orientated leader is likely to focus on the formulation and deployment of the strategic plan and the co-ordination of corporate activities, whereas a human relations orientated leader is likely to focus on the attitudes, feelings and personal well-being of the people in the firm. Consistently, this study concludes that in order to meet the needs of challenging and changing environment, effective leadership could be the most important differential factor between an ordinary bank and a successful bank. Most of the findings reveal that the mean values are above 3.5 for all the variables of effective leadership qualities, which shows that the banking sector has generally employed managers who are in harmony with the recent development as well as having acquaintance about the importance of human resource.

This result is also consistent with the literature that the managers need to put more focus not only towards the tasks but also towards the people. This research identifies the current practices and effective leadership qualities of managers working in banks. The results demonstrated that the commitment is the key factor of leadership in the banking sector of Pakistan. It is also evident from the study that managers having different qualifications have different approaches to the variable "pursuit for excellence". The study further reveals that qualification and experience may count for variation in leadership styles. Consequently, in order to achieve sustainable competitive, the managers in the banks need to be highly adaptive and flexible to change.

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THE RELATIONSHIPS BETWEEN SELECT SITUATIONAL AND DISPOSITIONAL CONSTRUCTS AND INFORMAL ACCOUNTABILITY FOR OTHERS

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ABSTRACT

This paper further enhances the field's understanding of informal accountability for others (IAFO) by examining both its antecedents and some possible mediating and moderating conditions. In this paper, we test a model wherein employees' value congruence and position (embeddedness), as well as their senses of organization-based self-esteem (OBSE), predicts IAFO. In addition, and consistent with existing literature on accountability, we examine the degree to which control (defined here in terms of self-regulation) influences individuals' senses of whether or not they feel accountable for the attitudes and behaviors of others in their organizations. Our results indicate that a partially mediated condition exists between embeddedness, organization-based self-esteem and IAFO. Furthermore, our results identify a statistically significant moderating effect for control on the OBSE - IAFO relationship.

KEYWORDS: Informal accountability for other, embeddedness, organization-based self-esteem.

JEL: M14

INTRODUCTION

Both the general public and academics alike are becoming increasingly aware of, and alarmed by, a perceived lack of accountability among business managers (e.g., Enron, Arthur Anderson, Tyco, and WorldCom). The interest stems from the potentially deleterious effects it could have on individuals' savings as well as its overall negative impact on market confidence. This concern is justified by the fact that accountability is a fundamental aspect of both personal and organizational life, and is critical for proper social functioning (Tetlock, 1985, 1992). Additionally, gaps in accountability can reduce a firm's legitimate governance system of checks and balances, and thus negatively affect an organization's performance (Yarnold, Muesur, & Lyons, 1988; Enzele & Anderson, 1993). Accountability is so fundamental to social interactions that Lerner and Tetlock (1999) contend that they would be impossible without it.

Despite the fact that accountability has been a matter of public discourse for some time, and is critical for proper organizational functioning, the construct itself remains underdeveloped (Frink & Klimoski, 1998, 2004). To address this gap, research advocates the development of models that incorporate both formal (e.g., reporting of supervisors and subordinates) and informal (e.g., cultural and organizational norms) dimensions (Frink & Klimoski, 1998, 2004). Furthermore, Tetlock (1985, 1992) argues that systematic examinations of accountability are needed to explain how individuals react to their subjective interpretations that exist in organizations.

Existing research notes that accountability is not always a simple, identifiable, formal system of reporting (Cummings & Anton, 1990). Instead, individuals might feel pulled in several different directions at once by various constituencies (Cummings & Anton, 1990). Essentially, this suggests that other people are important in determining how accountable one feels. Similarly, researchers are beginning to deal with the notion that individuals may feel accountable for others at work (Royle, Hochwarter, & Hall, 2008). This research seeks to extend the field's understanding of how other people figure into discussions of accountability. It is important for scholars to ascertain whether individuals actually feel accountable for others and to better understand what motivates conditions of informal accountability. In order to do this, new models are needed to shed light upon antecedent conditions and possible moderators. Our hypothesized model of informal accountability for others in this paper addresses some of these concerns.

Although informal accountability for others (IAFO) may exist in virtually any work setting, it does not mean that individuals necessarily choose to embrace it. Specifically, Frink and Klimoski (1998, 2004) note that external conditions help shape perceptions of accountability, but that ultimately it is the individual's choice whether it is accepted. It is our contention that individuals choose to engage in behaviors that demonstrate their accountability for others. In other words, accountability does not simply exist. It is used as a tool for managing one's environment, reducing uncertainty, and enhancing one's image. This is consistent with control theory predictions that individuals engage in behaviors that seek to minimize the discrepancy between their present condition and a desired goal state (Carver & Scheier, 1982). Consistent with this notion, our research proposes that both situational and attitudinal antecedents facilitate that decision. Specifically, we test a model of IAFO wherein one's embeddedness in an organization (both in terms of position in the hierarchy as well as a sense of value congruence) promotes both enhanced self-esteem and IAFO. Furthermore, we contend that the tendency to embrace IAFO will be subject to the ability individuals have to control themselves.

LITERATURE REVIEW

The Phenomenological View of Accountability

Lerner and Tetlock (1999) define accountability as the implicit or explicit expectation that individuals may be called on to justify their beliefs, feelings, and actions to others. Although the determination of accountability is typically most obvious when a breach of conduct occurs (Cummings & Anton, 1990), it is possible that individuals may be held accountable and rewarded for their due diligence absent any wrongdoing. However, accountability generally implies that those who do not provide acceptable justifications for their actions may be sanctioned with a broad spectrum of possible consequences ranging from scorn, loss of pay or employment, to incarceration (Stenning, 1995). On the other hand, individuals who provide sufficient justification for their behaviors experience positive consequences ranging from rewards to the total mitigation of the effects of any wrongdoing. Although these alternatives may seem fairly straightforward, the ways individuals feel when accountable and the elements that they must perceive to do so, makes studying accountability complicated by its potentially subjective nature. This kind of subjective interpretation is basically phenomenological.

The phenomenological view of accountability is rooted in Tetlock's (1985, 1992) social contingency model. It includes several empirically distinguishable sub-components. These include (a) *the mere presence of others* (individuals expect that another will observe their performance) (Zajonc, 1965; Zajonc & Sales 1966); (b) *identifiability* (individuals believe that what they say or do will be linked to them personally) (Price, 1987; Zimbardo, 1970); (c) *evaluation* (participants expect that their performance will be assessed by another according to some normative rules and with some implied consequences) (Geen, 1991); and (d) *reason-giving* (individuals expect that they must give reasons for their attitudes or behaviors) (Simonson & Nowlis, 2000).

Despite the prevalence of the phenomenological view, an interesting disconnect exists in most scholarly investigations of accountability. Specifically, the social contingency model (e.g., Tetlock, 1992) considers accountability to be largely internal and subjective. However, most empirical research on accountability treats it as an objective, external condition (Frink & Klimoski, 1998, 2004; Lerner & Tetlock, 1999). Granted, objectively verifiable facets of accountability environments are important, but they are not sufficient to paint a complete picture. This is because we cannot assume that all individuals react uniformly. Such an oversight creates the potential for researchers to miss many facets of informal accountability for others, which leaves the construct largely underdeveloped. Furthermore, little systematic examination is given to determining which dispositional and contextual variables contribute to making individuals feel accountable for others outside of formal superior-subordinates relationships.

Construct Domain: Defining Informal Accountability for Others

Our conceptualization of informal accountability reflects complimentary views previously conceptualized and demonstrated by others. For example, it borrows from the work of Morrison and Phelps (1999), who note that individuals generally believe that they are personally obligated to bring about constructive change, which directly or indirectly affect (ostensibly benefits) themselves and others. Another element of our construct derives from Lerner and Tetlock (1999), who argue that accountability is the implicit or explicit expectation that one may be called on to justify one's beliefs, feelings, or actions to others. Still other aspects stem from Ferris, Mitchell, Canavan, Frink, and Hopper (1995), who consider accountability to be a function of how much a person is observed and evaluated by powerful others who have reward or sanctioning power, and the extent to which valued rewards (or feared sanctions) follow these evaluations.

Though informative in their own rights, these definitions fail to tap the entire spectrum of informal accountability for others. In fact, the notion that others are the focus of accountability is missing altogether. As such, we define informal accountability for others as follows:

> *Informal accountability for others is a public demonstration that one is willing to answer for the attitudes and behaviors of individuals in an organization regardless of formal position within the firm, rank, or mandate by the organization.*

Embeddedness

Job embeddedness is conceptualized as a broad constellation of influences on employee retention, performance, satisfaction, and organizational citizenship behaviors (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001; Lee, Mitchell, Sablynski, Burton, & Holtom, 2004). Fundamentally, embeddedness is defined in terms of how tightly individuals feel themselves to fit with a firm, the degree to which they are well placed within a social network, and how well this promotes the "life-space" they desire for themselves.

The embeddedness construct is theoretically driven and explained by extending both embedded figures and field and ground theory (Lewin, 1951). Embedded figures, used in psychological tests, are those that are blended and camouflaged by their backgrounds. Embeddedness theory predicts that transactions between individuals create future expectations of trust and reciprocity (Uzzi & Gillespie, 2002). These expectations occur because the embeddedness of interpersonal transactions are learned and mutually understood through the process of socialization. Embeddedness provides the essential priming mechanism for initial offers of trust and mutual reliance that, if accepted and returned, are solidified through reciprocal investments and self-enforcement (Barney & Hansen, 1994; Uzzi, 1997).

Facets of job embeddedness that are of particular importance to this research include (1) the number of linkages that individuals have to other people and activities, (2) the extent to which individuals' work fits with the other aspects in their "life-spaces", and, (3) the ease with which these links can be broken and the negative expected consequences to individuals for doing so (Mitchell et al., 2001; Lee et al., 2004). We consider these aspects germane because they constitute both position/hierarchy-based and attitudinal drivers of employee attitudes and behaviors. In addition, Lee et al. (2004) note that the interrelatedness of these dimensions is important because many job factors affect individuals' desires to engage in their work, stay at their jobs, or withdraw.

The two aspects of embeddedness theory (Mitchell et al., 2001; Lee et al., 2004) that are examined in detail here are "links" and "fit." The other dimension, "sacrifice" relates largely to choices about where individuals live and the attractiveness of any given community. As such, this aspect of embeddedness lies beyond the current inquiry and is not expected to have a substantive bearing on informal accountability for others in the workplace.

Links are defined as either formal or informal connections between people, their institutions or other individuals in an organization (Mitchell et al., 2001; Lee et al., 2004). As such, a number of links may connect employees with their work, friends, groups, and even the community in which they reside. The greater the number of links, the more individuals are bound to jobs and organizations, and intertwined in social networks (Mitchell, et al., 2001; Lee et al., 2004). This aspect of embeddedness theory represents an extension of March and Simon's (1958, p.72) claim that "Families often have attitudes about what jobs are appropriate for their members… the integration of individuals into the community has frequently been urged by organizations because it offers advantages for public relations and reduces voluntary mobility." Thus, being tightly linked helps reduce volatility, helps limit the cost of turnover to organizations, and makes employee behavior more predictable.

The more tightly individuals are linked to others in the organization, the more likely they feel informally accountable for those others. This is typically due to recurrent interaction and fewer options or desires to break these ties. It should also be noted that breaking these links might also prove punitive. If individuals are visibly linked to others of importance or influence in an organization, it stands to reason that they will try to keep those links strong as a function of the potential benefits and the associated opportunity costs of loosing those associations.

Prior research (Royle, et al., 2008) suggests that increasing numbers of links exacerbates the potential for individuals to seek conditions of informal accountability for others. Tightly linked individuals are often aware of the informal accountability demands being placed upon them with respect to others, but wish to keep the web in which they function strong by not breaking any of its linkages. Individuals tend to do so because they believe that behaving in a manner that shows accountability for others helps ensure that other members enhance their performance (Royle et al., 2008). Additionally, ability to promote good performance in others augments organizational performance and may also strengthen the links themselves.

Fit is defined as employees' perceived compatibility or comfort with an organization and with their environment (Mitchell et al., 2001; Lee et al., 2004). According to embeddedness theory, individuals' personal values, career goals, and plans for the future should fit with values and culture of the organization as a whole and with elements of their job descriptions (e.g., knowledge, skills, and abilities) (Mitchell et al., 2001; Lee et al., 2004). Research shows that tighter fits increase the likelihood that individuals feel professionally and personally tied to an organization (Mitchell et al., 2001; Lee et al., 2004).

Studies of voluntary turnover (e.g., O'Reilly, Chatman, & Caldwell, 1991) suggest that "misfits" terminate faster than "fits." Chatman (1991) also reports that when organizational entry produces poor person-organization fit, employees are likely to leave. Similarly, Chan (1996) suggests that having one's personal attributes fit with one's job decreases turnover.

A tight fit indicates a shared sense of similarity and value congruence between individuals, other members, and the organization. Snyder and Ickes (1985) suggest that individuals choose to gain entrance to organizations and situations that affirm their self-concepts, attitudes, values and affinities. As such, it is likely that high levels of interpersonal affect exist between individuals who fit. Individuals who fit tightly usually interact more frequently with others, both formally and socially, in the organization. Royle et al.

(2008) note that under these conditions that individuals seek informal accountability for others because they may be friends with these people especially if such a behavior is consistent with established informal organizational norms.

Additionally, those who fit tightly may demonstrate their willingness to accept part of the blame for those close to them if those others fail in some aspect of work. Research suggests that individuals who fit tightly create predictable social environments, which then helps ensure behavioral consistency (Bowers, 1973; Ickes, Snyder, & Garcia, 1997). Thus, the strength of social alliances enjoyed by tightly fitting individuals helps reduce future uncertainty.

<u>Organization-Based Self-Esteem</u>

Pierce, Gardner, Cummings, and Dunham (1989) developed the concept of organization-based self-esteem (OBSE). Their research extends Coopersmith's (1967) contention that self-esteem reflects the extent to which individuals believe they are capable, significant, and worthy. Organization-based self-esteem therefore reflects individuals' feelings of personal adequacy and worthiness as employees. Thus, employees with high organization-based self-esteem believe that they are important, meaningful, and worthwhile. Organization-based self-esteem is one component of overall self-esteem that, in turn, is a facet of self-identity.

OBSE, however, differs from global self-esteem and self-identity in that it is more context-specific and, thus, is more responsive to proximal factors at play in organizations (Pierce, et al., 1989). For example, global self-esteem and self-identity are relatively stable individual differences, they are based in large part on primary (e.g., family members) socialization experiences (Coopersmith, 1967). On the other hand, OBSE evolves more slowly based on employees' cumulative experiences within specific organizations and thus changes when individuals move between employers.

According to Korman's (1970, 1976) self-consistency model of motivation, self-esteem is central to the explanation of employee motivation, attitudes, and behaviors. OBSE extends this reasoning by positing that experiences at work shape self-esteem beliefs, which in turn affect attitudes and behaviors. For example, individuals who perform well on a project will likely infer they are worthy and capable (Pierce et al., 1989). Similarly, when organizations acknowledge good performance (e.g., praise the work), it adds to the individuals' organization-based self-esteem and increases the likelihood of further beneficial, self-directed efforts. In essence, successes enact a spiral of esteem building situations. We suggest that this reciprocal interaction makes it more likely that individuals will seek to be informally accountable for others because it further promotes positive feelings individuals hold about themselves. Accountability for others may signal that individuals are responsible team players and the subsequent praise garnered may bolster their OBSE.

Other research shows high self-esteem individuals to be more tolerant of risk, and less likely to stick to conventional roles within an organization (Robbins, 2003). Those high in self-esteem are also likely to be high in self-efficacy (Bandura, 1977). At the organizational level, efficacy perceptions across situations lend themselves to OBSE (Pierce et al., 1989). According to Korman (1970, 1976) those high in OBSE believe themselves to be esteemed and competent and are motivated to engage in activities that validate these feelings. Further, according Royle et al. (2008), to the extent that organizational members believe that appearing nurturing, responsible, and protective of others, (all facets of how one who is informally accountable for others might act) is praiseworthy, those high in OBSE are motivated to exemplify these virtues because it enhances their sense of worth.

Germane to this research is establishing a connection between embeddedness and organization-based self-esteem. Existing research on self-esteem identifies several antecedent conditions, which we believe connect it to higher levels of embeddedness. Both the notions of fit and links map well onto established concepts of self-esteem enhancement. For example, Coopersmith (1967) contends that the amount of one's self-esteem depends on the amount of respect, concern, and acceptance that individuals receive from significant others in their lives. Since the fit that individuals experience at work is a reflection of the degree to which they identify with the values of a firm and also the degree to which they believe it embraces them and their values, it seems reasonable to predict that high degrees of bolsters self-esteem because it denotes mutual acceptance.

Additionally, Coopersmith (1967) notes that self-esteem is enhanced by a "history of success." By this it is meant that status and position enhance self-esteem. Clearly, the links of highly embedded individuals in organizations speak to this history. Highly linked individuals are defined by the importance of their roles in the firm, the number of individuals they manage, and the number of other high profile organizational contacts they possess. They are also, as our data suggest more tenured organizational members. Not surprisingly, we reason that linked individuals are provided opportunities to demonstrate and further accumulate self-esteem within their organizations. Further, we argue that as self-esteem accumulates, individuals seek more avenues to demonstrate their worth by seeking IAFO because it shows them to be proactive organizational members, better leaders (or potential leaders) and active career risk managers (Baruch, 2004).

Embeddedness also predicts organization-based self-esteem in that it is a reflection of individuals' "pretentions." As early as 1890 William James recognized that self-esteem is a function of individuals' successes divided by their pretentions. In other words, self-esteem is a relative measure of how well individuals evaluate their success in a particular endeavor relative to its importance to them. As James (1890) notes, highly ranked boxers are likely to feel some lack of self-esteem until they are champions. However, these individual are less likely to feel such devaluation should they fail to learn a new language (or anything else that is relatively unimportant to them). Considering that most employees think their careers are important (Baruch, 2004), it is likely that highly embedded individuals experience relatively more organization-based self-esteem based, de facto, on their many linkages and positions which are reflections of their desired career advancements.

Self-Regulation Theory

Baumeister and his colleagues (Baumeister, Brataslavsky, Muraven, & Tice, 1998) note that actions involving conscious, deliberate, and controlled responses by the self are disproportionately important to one's health, success, and happiness. Existing scholarship suggests (e.g., Baumeister et al., 1998; Carver & Scheier, 1981, 1982; Carver, 2004) that the domain of self-regulation is rooted in self-awareness. Vohs and Baumeister (2004) contend that self-regulation constitutes a conscious effort to align behaviors with established or preferred standards for conduct. Essentially, this involves directing behaviors toward the achievement of a-priori goals (Baumeister et al., 1998). These researchers also argue that another reason to practice self-regulation is to reduce current and future uncertainty.

Self-regulation offers important insights regarding the decision to become informally accountability for others. In light of the fact that individuals may be accountable to multiple constituencies with possibly conflicting agendas (Carnevale, 1985; Green, Visser, & Tetlock, 2000), there can be a disparity in pressures. This discrepancy requires individuals to attend to cues that they consider most important even though that might contribute to "ego-depletion." In other words, individuals may deplete their stores of energy due to the strain that balancing multiple obligations creates. Answering for others may constitute one such obligation. Nonetheless, individuals may wish to embrace informal accountability for others when it is organizationally desired conduct because it offers perceived personal benefits (e.g., perceived leadership ability, team member status, and uncertainty reduction). In order to obtain positive responses across constituents, it is suggested that individuals must regulate their behaviors to curb ego depletion

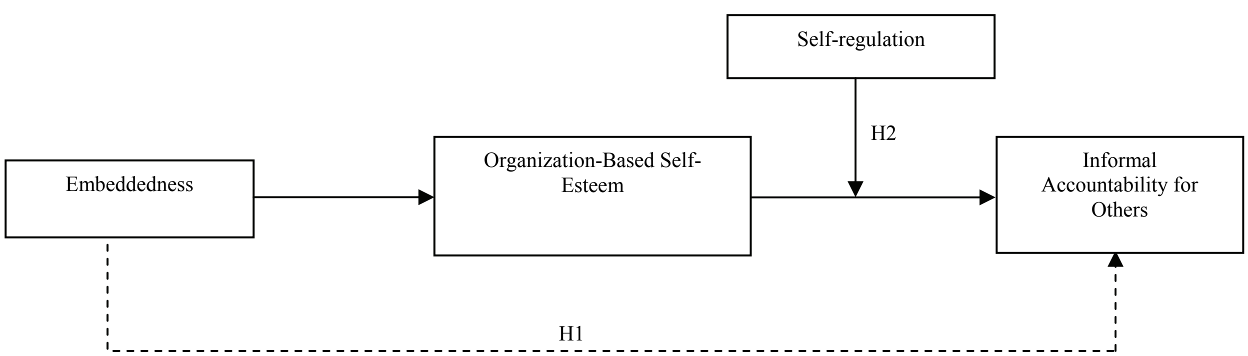
(Baumeister et al., 1998), which is described as the exhaustion of self-generated resources (i.e., energy, effort, and attention).

Reactions to accountability conditions frequently include cognitively complex attempts (e.g., integrative decision making) (Lerner & Tetlock, 1999) to secure positive evaluations (Green et al., 2000). Therefore, seeking informal accountability for others demands the dedication of more resources than does avoiding it. Of course, avoiding informal accountability for others precludes individuals from using it as a springboard to more responsibility, the potential for promotion, and ultimately, from reducing worries about their futures.

Unfortunately, energy resources are generally expended more rapidly than they are replenished (Baumeister et al., 1998). Furthermore, accountability conditions (i.e., informal and formal) do not always allow individuals to pause to restore resources, but instead may place them in a condition of constant scrutiny. As a result, resource-accumulating activities (e.g., securing control over decision making) that are self-generated help ensure that ego-depletion does not drag individuals below a minimal threshold for adequate functioning.

We suggest that answering for the attitudes and behaviors of others might strain individuals, thus depleting ego reserves. However, the possible attendant loss of reserves can be mitigated by self-regulation. For example, if individuals are able to effectively prioritize how they accomplish tasks, they become more efficient. This frees up their time to advise others. Further, if they are able to make time for others, they may pass along important information, which may translate into an organizationally beneficial action by those who receive it. Individuals who seek informal accountability for others, and possess adequate amounts of control, are not likely to feel strained or depleted because they are simultaneously engaged in resource accumulation that offsets losses. Namely, the compliance others give to their direction becomes an additional resource. Additionally, these behaviors help build coalitions. Research indicates that employees who are members of strong coalitions are able to undermine some attempts at unwanted, uncertainty evoking changes devised by top management or ownership (Deluga, 1988). The mediating and moderating relationships discussed below are shown in Figure 1.

Figure 1: The Relationship of Organization-Based Self-esteem, Self-regulation, and Informal Accountability for Others



This is the model of informal accountability tested in this research. Hypothesis 1 states that embeddedness contributes to individuals' senses of organization-based self-esteem, which in turn fosters their beliefs that they informally answer for the attitudes and behaviors of others at work. Hypothesis 2 states that self-regulation moderates the relationship between organization-based self-esteem and informal accountability for others.

The Mediating Effect of Organization-Based Self-esteem on the Embeddedness and Informal Accountability for Others Relationship

In this paper we intend to build the body of literature with respect to potential relationships that exist between both informal aspects of accountability, feelings of self-worth, and the positions and relationships that individuals hold within organizations. Extant research reports strong positive associations between embeddedness and satisfaction, commitment, and negative relationships to turnover (Mitchell et al., 2001). Furthermore, Royle et al. (2008) note that embeddedness predicts informal accountability for others. However, research does not examine whether or not embeddedness predicts OBSE, which then promotes IAFO in a step-wise fashion.

Hight (2004) suggests that relatively higher levels of self-esteem for individuals exist for those who have positive relationships with their peers and values congruence between themselves and their organizations. We therefore investigate whether embeddedness promotes a sense of self-worth, which then inclines individuals to seek informal accountability for others out of sense of both duty and opportunity. This is particularly true if individuals believe that answering for others gains them favor. Indeed, scholarship on the varied topics of social exchange (Van Dyne & Ang, 1998), norms of reciprocity (Gouldner, 1960), perceived organizational support (Rhoades & Eisenberger, 2002), and work-status congruence (Holtom, Lee, & Tidd, 2002) all indicate that individuals feel obligated or want to aid others in organizations who help them.

Hypothesis 1: Organization-based self-esteem mediates the relationship between embeddedness and informal accountability for others.

The Moderating Effect of Control on the Organization-Based Self-esteem and Informal Accountability for Others Relationship

Prominent in exchange perspectives such as those mentioned above is the concept of unspecified obligations. That is, when one party does a favor for another, there is an expectation of some future return. However, exactly when that favor needs to be returned and what form it will take is often unclear (Kaufman, Stamper, & Tesluk, 2001; Wayne, Shore, & Liden, 1997).

Much of the research on reciprocity involves defining the informal rules related to the exchange of gifts (Blau, 1977). Although gifts (in this case the "gift" involves imparting social or technical information and sticking one's neck out for another), ostensibly, are given voluntarily, they are actually proffered and repaid under obligation. The currency of exchange is not only goods or material gifts, but also services, favors, and assistance (Mauss, 1954; Blau, 1977). Members who fail to comply with expectations of reciprocity risk being distrusted in future interactions or being socially castigated (Gouldner, 1960). The implications of this for informal accountability for others are clear. Those who willingly answer for others expect something in return. Namely, the party that is answerable expects some compliance to demands and goal directed effort to be reciprocated.

Existing research indicates that those high in self-esteem prefer non-routine interaction with others and are more tolerant of risk (Pierce et al., 1993; Robbins, 2003). Those high in self-esteem also seek outlets to engage in behaviors that both validate and reinforce these feelings (Pierce, et al., 1993). Appearing nurturing, responsible, and protective of others, (all facets of how one who is informally accountable for others might act) is suggested as praiseworthy (Royle et al., 2008) and, thus, something those high in OBSE are likely to embrace. However, answering on the behalf of others for their behaviors is not uniformly tenable for all individuals. Specifically, those who lack self-control are not likely to seek IAFO even if it seems attractive.

We argue that informal accountability may be stressful and thus deplete ego reserves. Individuals offset such losses by regulating themselves. For example, if they are able to effectively prioritize how they accomplish tasks, they become more efficient. If they are able to make time for others, they may pass along important information. Individuals, who possess larger amounts of control, are not likely to feel strained or depleted because they are simultaneously engaged in resource accumulation that offsets losses. The resources they accumulate are the positive perceptions others might have of them as well as the kinds accumulated favors owed them as set forth in prominent theories of social exchange (e.g., Kaufman, Stamper, & Tesluk, 2001; Blau, 1977; Gouldner, 1960).

Hypothesis 2: Higher levels of informal accountability for others will be associated with higher levels of OBSE for individuals reporting high levels of control. Alternatively, there will be a negative relationship between informal accountability for others and OBSE for those low in control.

METHOD

Participants and Procedures

Our sample consists of working adults. Students involved in an extra credit assignment gave our survey to individuals they knew to be employed full-time. A group of 75 students distributed up to five surveys each for extra credit. Ultimately, a total of 375 surveys were made available to students. Of these, a usable sample of 185 was returned. This constitutes a response rate of 49%. Granted, this response rate could be higher, but some students failed to distribute these surveys ostensibly because they felt they needed no extra credit, or because they were not interested in participating.

The survey took respondents approximately 15 minutes to complete. The students submitted most of the surveys directly to subjects. However, we also provided an electronic copy of the survey. In this case, responses were either faxed or emailed directly to us. Contact information was collected for all individuals in order to verify that the proper respondents had actually completed the survey.

Respondent occupations include accountants, human resources administrators, sales professionals, marketing directors, and food service personnel. The average age of respondents is 37 and the average organizational tenure is 7 years. The sample includes 98 females (55%).

Measures

Organization-based Self-esteem (OBSE) (α = .92) is measured using a scale developed by Pierce et al. (1989). Sample items include, "I count in this organization" and "I am a valuable member of this organization." The 10-item scale uses a five-point response scale (1 = *strongly disagree* to 5 = *strongly agree*).

Embeddedness (α = .83) is measured using an 11-item amended scale developed by Mitchell et al. (2001). It focuses only on the fit and links dimensions of embeddedness. Sample items from each subset include, "I feel like I am a good match for this company," "I fit with the company's culture," "Many employees are dependent on me at work," and "I am on many teams in this organization." Five items measure fit and six measure links. The scale employs a five-point response format (1 = *strongly disagree* to 5 = *strongly agree*).

Informal accountability for others (α = .85) is measured using amendments to Deluga's (1988) five-item scale, which is derived from Ivancevich and Matteson's (1980) "Responsibility for people" portion of their Stress Diagnostic Survey. Sample items include "I am accountable for the development of other employees although it is not part of my formal job duties" and "I am accountable for counseling and consulting with peers and/or helping them solve their problems although I do not have to." The scale employs a five-point response format (1 = *strongly disagree* to 5 = *strongly agree*).

Self-regulation (α = .81) is measured using a scale created by Luszczynska, Diehl, Gutiérrez-Doña, Kuusinen, and Schwarzer (2004). Sample items include "I stay focused on my goal and don't allow anything to distract me from my plan of action" and "If I am distracted from one activity, I don't have any problems coming back to it." The scale employs a five-point response format (1 = *strongly disagree* to 5 = *strongly agree*). In addition to the key research variables, four control variables are included - organizational tenure, age, gender, and race.

RESULTS

Table 1 provides the means, standard deviations, and intercorrelations amongst study variables for both of this study's samples. Age was related to a number of the outcome variables, thus providing additional support for its inclusion in this study as a control variable. In only one case did the correlations between any of the study variables exceed the .60 - benchmark for suspected co-linearity noted by Cohen, Cohen, West, and Aiken (2003). Nevertheless, the high positive correlation between embeddedness and OBSE (r =.62, p<.001) is germane to our discussion. Admittedly this correlation is high. However, it is consistent previous research (e.g., Sun & Hui, 2007), and is not surprising given that these constructs, although distinct, share some conceptual similarities.

The dimensionality of the scales was also demonstrated. The results of the confirmatory factor analysis indicate good fit (Hu & Bentler, 1999; Hair, Anderson, Tatham, & Black, 1998). Analyses indicated a one-dimensional factor structure for OBSE (eigenvalue = 5.85, proportion of explained variance = .59), IAFO (eigenvalue = 3.93, proportion of explained variance = .62), and self-regulation (eigenvalue = 2.00, proportion of explained variances = .50). A two-factor structure was supported for embeddedness (eigenvalues = 3.51 and 1.59 for links and fit respectively, proportion of explained variance = .47)

Table 1: Means, Standard Deviations, and Intercorrelations among Study Variables

Variable	M	SD	1	2	3	4	5	6	7
1. Age	36.51	13.42	---						
2. Gender	---	---	-.08	---					
3. Org. Tenure	7.37	8.02	.57*	-.10	---				
4. IAFO	3.49	.88	.05	-.05	.04	---			
5. OBSE	4.20	.89	.26*	.01	.13	.44*	---		
6. Self-regulation	3.88	.53	.17*	.07	.04	.23*	.41*	---	
7. Embeddedness	3.75	.56	.50*	-.09	.10	.48*	.62*	.37*	---

**indicates significance levels of p < .05 or higher*

In our factor analysis we tested the dimensionality of the constructs using principal component analysis with an orthogonal (Varimax) rotation. We applied Kaiser's Rule (retained only factors with eigenvalues over 1.00), and examined the amount of variance extracted in the construct by the first factor relative to others (Pallant, 2004; Kaiser, 1974). We did not delete any items in any scales in of our analyses.

Regression Results

To test Hypothesis 1, we performed the three-step procedure as recommended by Baron and Kenny (1986) to test for mediation. In each of the three steps, the control variables of tenure and gender were included due to their potential impact on the dependent variables and to provide a more stringent test of the relationships. Overall, gender was not significantly related to any of the other study variables. Unsurprisingly, organizational tenure was significantly related to only one of the other control variables, age. Age was significantly ($p < .05$ or higher) related positively to embeddedness and OBSE. In general, the control variables explained very little variance (|.01|), but their inclusion strengthened our test of the model.

The three panes in Table 2 provide the regression results using the method recommended by Baron and Kenny (1986). The first pane contains the results for the first step, showing that the independent variable – embeddedness, was significantly related to the mediating variable - organization-based self esteem ($p <$ .001). Thus, we proceeded to the second step. The second pane provides the results for this step and shows that embeddedness was significantly related ($p < .001$) to the dependent variable – IFAO. Further, embeddedness explained 22% of the variance in informal accountability for others.

Table 2: Mediation Analysis

Variable	F	df	Adjusted R^2	β (Standard)
Panel A: Mediator Variable Regressed on the Independent Variable				
Mediator: OBSE	26.20***	5	.40	
Embeddedness				.60***
Panel B: Dependent Variable Regressed on Independent Variable				
Dep. Var.: IAFO	11.36***	5	.22	
Embeddedness				.48***
Panel C: Dependent Variable Regressed on Mediator (OBSE) with the Independent Variable Included				
Dep. Var.: IAFO	11.31***	6	.25	
OBSE				.25**
Embeddedness				.33***

N = 187
Significance levels are indicated as follows: *$p < .05$, **$p < .01$, ***$p < .001$. *All results include age, race, gender, tenure, as control variables. The panels of Table 2 show the mediation steps suggested by Baron and Kenny (1986). The direct relationship between embeddedness and IAFO is excluded from the table, because it must exist to even perform mediation analysis. The results suggest that the relationship weakens substantially in the presence of OBSE, implying partial mediation.*

Finally, we proceeded to the third step of Baron and Kenny's (1986) procedure. In this step, the mediating variable should be related to the dependent variable with the independent variable included in the equation. The third pane in Table 2 provides results from the last step. As can be seen, embeddedness was still significantly ($p < .01$) related to IAFO, as was OBSE. Because the beta weight of the independent variable (i.e., embeddedness) remains significant with the mediator (i.e., OBSE) included in the equation, a case of full mediation does not exist. However, if there is a reduction in the strength and significance levels of the standardized beta weights for the independent variable (i.e., embeddedness) between steps two and three, partial mediation exists (Baron & Kenny, 1986). Because the standardized beta weigh for embeddedness was .48 ($p < .001$) in step two and dropped to .33 ($p < .01$) with the inclusion of OBSE in step three. This suggested the potential for a partially mediated relationship. Therefore, we employed Sobel's test to assess partial mediation. The results of Sobel's test are significant ($p < .01$), which suggests that there is a significant change in the direct path coefficient once the mediator is included in the model. Therefore, partial mediation is supported.

We tested Hypothesis 2 using hierarchical moderated regression analyses to determine the influence of control (i.e., self-regulation) on the OBSE – IAFO relationship. In the first step, we entered the control variables (i.e., age, organizational tenure, gender). We then entered the predictor variables in step 2. The interaction term was included in the third step. An incremental change in criterion variance (i.e., ΔR^2)

indicates a significant interaction term (Cohen & Cohen, 1983). We found that self-regulation moderated the OBSE – IAFO ($\beta = 1.86$, $p < .05$, $\Delta R^2 = .02$) relationship and that the proposed model explained 20% of the total variance in informal accountability for others. Consistent with Stone and Hollenbeck (1989), we plotted high and low levels of self-regulation one standard deviation above and below the mean across the range of perceived OBSE scores. We illustrate the significant interactive relationships (i.e., IAFO and OBSE) in Figure 2.

Table 3: Hierarchical Moderated Regression for Testing the Effects of Independent Variables on Informal Accountability for Others

Step and Variable	β	ΔR²	R²
Step 1:			
Age	-.10		
Gender	-.05		
Organizational Tenure	.02		
Race	-.09	.01	.01
Step 2:			
Self-Regulation	-1.08**		
Org-based Self Esteem	-.63	.17	.18
Step 3:			
Self-Reg. x OBSE	1.86**	.02	.20

*N = 187, Significance levels are indicated as follows: *p < .10, ** p < .05, ***p < .01. All beta coefficients are standardized. Table 3 shows the results of the hierarchical moderated regression. The results suggest that, while controlling for age, gender, organizational tenure and race, those who are high in self-regulation and OBSE tend to seek IAFO, while those who are high in self-regulation and low in OBSE tend to avoid IAFO.*

Figure 2: Informal Accountability for Others Scores Regressed on Organization-Based Self-esteem and Self-regulation for Organizational Sample

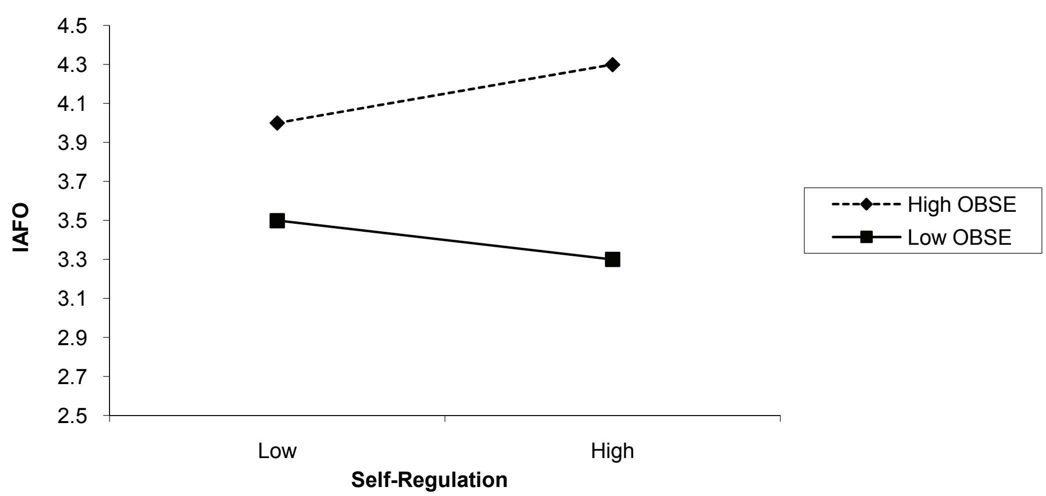


Figure 2 plots the mean scores of IAFO relative to organization-based self-esteem and self-regulation. Those high in self-esteem who also possessed higher levels of attention control were likely to feel more informal accountability for others. In contrast, those with low self-esteem were less likely to feel informally accountable for others even under conditions of strong self-regulation.

DISCUSSION

The current investigation corroborates the influence of embeddedness, organization-based self-esteem on informal accountability for others. In addition self-regulation, the ability to attend to only relevant cues in the organizational context, is also demonstrated to moderate the OBSE-IAFO relationship. These findings help augment the development of several bodies of literature. For example, understanding that being structurally linked to and familiar with colleagues in various positions within an organization, can help predict favorable levels of both the value individuals place in themselves at work and the level to which they are willing to answer for the actions of others, enhances accountability research.

Heretofore, research has not examined the extent to which individuals' abilities to ignore extemporaneous social information impacts the level to which they feel answerable to others for the actions of their constituents. Consequently, accountability research is extended with the awareness that self-regulation can serve as a variable that makes the creation of feelings of worth about oneself at work even more important. By examining the influence of structural and individual factors (i.e., the links and fit dimensions of embeddedness) simultaneously, we can be more confident that dimensions relevant to informal accountability for others are tapped in the current study.

Contributions to Theory and Practice

Mossholder and his colleagues (Mossholder, Bedeian, & Armenakis, 1981, 1982) suggest that self-esteem predicts abilities in organizational contexts. In this case, we contend that one such ability is that which allows organizational members to become informally accountable for others. Mossholder et al. (1982) demonstrate that those low in self-esteem seek peer group interaction more than high self-esteem individuals. Doubtless, IAFO involves peer interaction, but more directly it indicates individuals' willingness to answer for others based on their perceptions of their own skills, capabilities, and their understanding of the likelihood that any performance enhancing information they give will be taken and used appropriately. Signaling one's informal accountability is a very forward look behavior. As such, it is consistent with Mossholder et al.'s (1982) findings that those higher in self-esteem are more likely to proactively seek solutions to problems individually.

Existing scholarship (i.e., Lerner and Tetlock, 1999) notes that accountability is the implicit or explicit expectation that individuals may be called on to justify their beliefs, feelings, or actions to others. Ferris, Mitchell, Canavan, Frink, and Hopper (1995), consider accountability to be a function of how much a person is observed and evaluated by powerful others who have reward or sanctioning power, and the extent to which individuals either fear or value these outcomes. It is thus conceivable that some individuals might find being accountable for others either desirable or stressful. Our results support the view that self-regulation, in the form of attention control, has important neutralizing properties for stressful social situations (Aspinwall, 2001; Hobfoll & Shirom, 2001).

Finally, this study helps further validate the energetic-control framework (Hockey, 1993), which contends that individuals' senses of well-being is better ensured when they mobilize their cognitive/attention resources. Hockey (1997, p. 78) notes that, "management of effort allows individuals to control the effectiveness of task behavior in relation to competing concurrent goals, changing demands, and current levels of energetic resources." Since being informally accountable for others may cause changing or competing demands and agendas to occur, higher levels of self-regulatory capabilities are important in facilitating higher individual levels of IAFO.

Implications of this study for both managers and subordinates are also important. According to Greenhaus, Callahan, and Godshalk (2000: 85), in order to make progress in the landscape of contemporary career structures, individuals must possess not only adequate skills, but also extend their work involvement, build their images, develop and support alliances, and successfully manage organizational politics. Embracing informal accountability for others potentially involves engaging in all of those additional behaviors at numerous levels in organizations. Thus, if managed well, IAFO offers employees enhanced career mobility.

Another managerial implication of this research involves the transformation of organizational structures themselves. Most experienced managers understand the benefits of cooperative relationships that reflect identification with the organization (Organ, 1997). These notions are central to pursuing informal accountability for others. The practical implication of this research relates to the flattening of organizational structures and increasing spans of control (Cascio, 1995). When organizations flatten their structures, accountability becomes more important due to a lack of authority and answerability relative to position power. Given that accountability is shown to enhance the quality of decisions and the levels, directions, and persistence of work related efforts (Tetlock, 1985, 1992), firms should attempt to recruit and retain individuals who fit with the organization's mission and are linked to other people within the organization, due to their likely pursuit and acceptance of IAFO as an informal mechanism of corporate governance and potential for enhanced performance.

Strengths, Limitations and Directions for Future Research

There are both strengths and limitations in our research that warrant comment. Common criticisms of prior research have centered on the design of the studies; namely, laboratory experiments. Generally, the problem involves a lack of realism and, concomitantly, the findings tend to lack external validity (Frink & Klimoski, 1998, 2004). Specifically, prior research does not investigate real employees in actual organizations (Frink & Klimoski, 1998, 2004). The main strength of this research is that our data help obviate this problem because they focus on real working adults in a wide range of occupations across actual organizations.

A potential concern in this research involves the level of participation. We initially anticipated a relatively low response rate of only 30%, which is common in organizational research (Dillman, 2000). In fact, we found a response rate of 57%. Although that is encouraging, non-response bias (the potential that respondents differ in motivation and ability from non-respondents) cannot be entirely ruled out (Schwab, 1999).

This study is also limited to cross-sectional data. A frequent lament on the part of organizational researchers is the lack of longitudinal research design in field studies. Cross-sectional studies diminish the researchers' abilities to make more definitive statements of causality (Schwab, 1999). However, the cross-sectional analysis in this research takes a necessary step forward from contrived laboratory findings to more generalized findings.

A fundamental step in the future of research on informal accountability for others relates to the gathering of longitudinal data. One important question that longitudinal designs would help answer is whether or not IAFO remains constant once the decision to signal is made.

Another pertinent avenue for future research is to consider the effects of culture, both organizational and national. Given the significant main effects of organization-based self-esteem and embeddedness on IAFO, a comparative study of cultures and organization types might be useful. For example, future research might look at the number of layers (i.e., level of bureaucracy) as a predictor of linkages. Assuming that those in flatter organizations are called upon to perform more varied task and are thus accountable for more outcomes and proximally linked to others (Cascio, 1995; Kirkman & Shapiro, 1997), a logical next step would be to test if individuals are more inclined to seek additional informal accountability for others due to structural pressures.

Research opportunities that exist at the level of organizational and national culture help flesh out another fundamental question. How does culture shape individuals' views of informal accountability for others and enable it in terms of its social acceptability? Specifically, an application of Hofstede's (1980, 2001) dimensions of work-related values could be informative when studying IAFO in culturally diverse samples. Indeed, this has been a popular framework through which to view cultural differences. Applying this view of organizational culture, we might expect that a social influence tactic such as signaling IAFO is effective only to the degree that it is in keeping with the basic values of a given culture.

Furthermore, many of Hofstede's (1980, 2001) dimensions may shed light on the relative desirability of seeking informal accountability for others. It is possible that each dimension differentially predicts informal accountability for others. For example, in cultures that are masculine and individualistic, perhaps seeking IAFO is appropriate because the culture values personal initiative, recognition, and assertiveness. Shankar, Ansari, and Saxena (1999) suggest that such authoritarian organizational climates are more conducive to assertive behaviors. Future research would be well served to determine how cultural constraints shape individuals' beliefs about IAFO as a tool of social influence and whether it too becomes a desirable and acceptable mechanism for employees to promote themselves.
Collectivistic and feminine cultures, on the other hand, tend to value the overall good of the group, quality of life, and the maintenance of positive, mutually beneficial interpersonal relationships (Hofstede, 1980, 2001). Shankar et al. (1999) note that in collectivist societies where participative climates are more common, ingratiatory behaviors are desirable. Future research might address the role of culture in making attributions of intentions in order to determine if individuals who pursue informal accountability for others are considered good stewards or politically minded self-promoters.

Research might also compare individuals who seek informal accountability for others across organizations (or nations) along standards of time orientation (Bond, 1986; Hofstede, 1980). Scholars may be able to determine the extent to which individuals that prefer thrift and persistence (i.e., short-term orientation) to immediate results differentially seek informal accountability for others. For example, it is plausible that IAFO is more commonly used as an influence technique in cultures where individuals attempt to realize immediate status gains. On the other hand, it is also possible that those who are culturally disposed to persistence (i.e., long-term orientation) seek informal accountability for others because they are accustomed to the notion that interactions between coworkers is the evolution of a relationship rather than a series of discreet transactions (Francesco & Gold, 2005). Informal accountability for others operates on this notion of reciprocal interaction (Gouldner, 1960).

Finally, future scholars might wish to draw comparisons along Hofstede's (1980, 2001) uncertainty avoidance dimension. We frame uncertainty reduction as a driver of individuals' decisions about seeking informal accountability for others. We assume that, regardless of culture, each individual has some trepidation about the future. However, the average magnitude of these fears might be differentially predictive of informal accountability for others. Given that IAFO is positioned as a means by which individuals reduce uncertainty, it seems logical that those in environments characterized by high uncertainty avoidance are most likely to seek IAFO. Still, further inquiry should validate this assumption. Considering that cultures with strong uncertainty avoidance usually develop explicit rules of behavior (both written and unwritten) with stringent penalties for those who break them (Francesco & Gold, 2005), it may be that individuals in low uncertainty cultures would be more likely to seek IAFO because social interaction is more flexible and unstructured (Francesco & Gold, 2005). Ultimately, what needs to be examined is the overarching question of the extent to which culture directs individuals to seek informal accountability for others for different reasons.

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