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PJBE Office of the Editor

Editorial Notes

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The transition of the *PJBE* editorial office from Bloomsburg to Indiana University of Pennsylvania and on to Clarion, has been completed. Although there have been several bumps in the road, the continued efforts of the officers and editorial board have smoothed the way. There was a backlog of five papers that were accepted for the 1999 issue, but not published. These papers have been included in the current issue along with seven new articles. Many of the potential papers for publication have been submitted electronically. This has greatly facilitated the review process, and we would encourage all authors to submit their papers in this format. We have also adopted submission guidelines for the journal and encourage prospective paper authors to submit their work in the format found in the 2000 edition of *PJBE.*

PJBE has been experiencing an enormous influx of papers within the last several months. Ten papers have been submitted for the 2001 issue. Much of this flow may be due to increased pressures to publish, or perish. Accordingly, a heavy burden has been placed upon the shoulders of *PJBE* reviewers. These brave souls are the guardians of the intrinsic and extrinsic quality initiatives sanctioned by the journal. Most of the reviewers are generated from the 14 SSHE schools. Several non-SSHE reviewers have graciously aided in this process. The editors wish to thank our reviewers from outside SSHE, including Penn State Capital College, University of Pittsburgh at Johnstown, and Stockton University, New Jersey. These reviewers have filled the void, and gone beyond the call to duty in many instances.

It is through the efforts of all of the reviewers, that the revision and resubmission of papers have lead to improved quality standards. Hopefully, these improvements are visible in the Spring 2000 Issue of *PJBE.* The editors applaud the present reviewers for their continued excellent efforts and encourage the influx of new reviewers to share the burden. Unfortunately, papers for the Spring 2001 issue may face higher attrition rates than previously encountered. Acceptance rates may fall as quality standards improve.

The reader may notice some new changes to *PJBE.* Guideline submissions have been adopted and presented in the journal, as well as author bibliographies, editorial notes, listings of the office of the editors and officers of *PJBE,* and acknowledgment of reviewers. The editors are making arrangements for the journal to enter an electronic phase, and plan to have it available on a web site in the near future. There has also been some talk of reengineering the journal name as well as the "look and feel" of the published product. We would encourage the members of *PJBE* to consider a name change to the *Pennsylvania Journal of Business, Economics, and Information Technology.* Certainly, this proposed change is not a sanction of the relative importance of one business discipline, or functional area, over another. Rather, it is an acknowledgment of the impact of this area as a facilitator or enabler of all existing business disciplines. Accounting, finance, marketing, management, economics, and other areas have had to rethink the way that they do business as a result of information technology.

In all things, great and small, the editors strive to maintain *PJBE* for the benefit of our members. We encourage your inputs and concerns, and will endeavor to serve our constituents in as democratic a manner as is possible. In order to accomplish these ends we solicit your help and insights. Please help us to continue the improvement of quality standards of *PJBE* so that we can be proud of our product, our process and ourselves.

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Hindsight Bias and Auditors' Going-Concern Judgments: The Effects of Experience

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Abstract

This paper examines the effects of "hindsight bias" on auditor judgment and the degree to which the bias is influenced by experience. Hindsight bias is the tendency for individuals who have been provided the outcome of an event to overstate their abilities to have predicted that outcome in foresight (i.e., before receiving outcome information). Experimental results indicate that both experienced and inexperienced auditors are prone to hindsight bias. However, the bias neither intensifies nor diminishes with increased experience, but instead, it remains unchanged. Given that experience neither increases nor decreases hindsight bias and given that monetary incentives (Camerer et al., 1989; Hell et al., 1988) and accountability (Kennedy, 1995) have been found to be ineffective in counteracting the bias, it is important that public accounting firms employ debiasing strategies to effectively mitigate the bias at all experience levels. Both preoutcome (Anderson and Hoffman, 1999) and postoutcome (Kennedy, 1995) debiasing strategies have been found to be somewhat successful in reducing hindsight bias for both experienced and inexperienced auditors.

Introduction

This paper examines the effects of "hindsight bias" on auditor judgment and the degree to which the bias is influenced by experience. Hindsight bias is the tendency for individuals who have been provided with the outcome of an uncertain event to systematically overstate their abilities to have predicted that outcome in foresight. Further, individuals deny that knowledge of the event's actual outcome has affected their predictions. Hindsight bias has been found to influence several audit judgments, including internal control evaluations (Reimers & Butler, 1992), audit opinion decisions (Reimers & Butler, 1992), preliminary analytical review judgments (Biggs & Wild, 1985; Heintz & White, 1989; Kennedy, 1995; Kinney & Uecker, 1982; McDaniel & Kinney, 1994), and going-concern judgments (Anderson & Hoffman, 1999; Anderson, 1994; Kennedy, 1995).

The presence of hindsight bias in the context of going-concern judgments presents two important implications for the auditing profession. First, the "knew-it-all-along" attitude created by hindsight bias may impede feedback learning (Fischhoff, 1975), thereby reducing what auditors could potentially learn from the feedback provided by actual bankruptcies. If auditors believe they "knew all along" that a bankrupt company was going to fail, they may not learn what they should from the outcome and may believe more often than they should that they could have actually predicted the outcome. This overconfidence may lead auditors to believe they have little reason to re-evaluate and improve their decision making processes and evidence gathering strategies regarding going-concern judgments. Second, auditors who issue unqualified opinions to client companies that subsequently fail may be unfairly evaluated, in hindsight, by interested third parties such as the SEC, stockholders, expert witnesses, jurors, and peers (Kennedy, 1995; Lowe & Reckers, 1994). These third parties may be unable to ignore the outcome information they have (i.e., the company did indeed fail) that the auditors did not have at the time they made their opinion decision.

In an auditing experiment involving going-concern judgments, this paper investigates the effects of auditor experience on the degree of hindsight bias exhibited. Kennedy (1995) examined the extent to which auditor experience would decrease hindsight bias by conducting two experiments, one involving a going-concern judgment task and one involving an analytical review task. Using the creeping determinism explanation for hindsight bias as developed in the psychological literature (see Hawkins and Hastie 1990 for a review), this paper theorizes that auditor experience would increase hindsight bias. Consistent with Kennedy's findings, this study's results indicate that, in an auditing context, hindsight bias neither intensifies nor diminishes with experience, but instead remains unchanged. Kennedy (1995) concludes that the biasing effects of hindsight are "hardwired" in auditors and are therefore unaffected by experience. Given that experience neither increases nor decreases hindsight bias and given that monetary incentives (Camerer et al., 1989; Hell et al., 1988) and accountability (Kennedy, 1995) have been found to be ineffective in counteracting the bias, it is important that public accounting firms employ debiasing strategies to effectively mitigate the bias at all experience levels. Both preoutcome (Anderson & Hoffman, 1999) and postoutcome (Kennedy, 1995) debiasing strategies have been found to be somewhat successful in reducing hindsight bias for both experienced and inexperienced auditors.

The remainder of the paper is organized as follows. The next section presents the theory and hypotheses development. The methodology used to test the hypotheses is described in section III, followed by the results in section IV. The implications and limitations of the paper are summarized and discussed in section V.

Theory and Hypotheses Development

Presence of Hindsight Bias

Fischhoff (1975) coined the term "creeping determinism" to describe the process he believed was responsible for hindsight bias.[1] According to Fischhoff, "Upon receipt of outcome knowledge judges immediately assimilate it with what they already know about the event in question. In other words, the retrospective judge attempts to make sense, or a coherent whole, out of all that he knows about the event" (1975, p. 297). Because the process was hypothesized to be quick and unconscious, Fischhoff described the outcome information as "creeping" into the subject's mental representation of the event resulting in cognitive restructuring. The characteristic effect of creeping determinism is the proclivity to view a known outcome as nearly inevitable, as revealed in retrospective probability judgments, because of the seemingly unalterable sequence of events leading up to it (Hawkins & Hastie, 1990). The "creeping determinism" hypothesis is consistent with more of the hindsight literature results than any other explanation offered (Hawkins & Hastie, 1990).[2]

Prior research reveals the presence of hindsight bias in several accounting settings. Financial statement users asked to assess a company's viability have been found to be prone to hindsight bias (Buchman ,1985). Jurors (Lowe & Reckers, 1994) and judges (Anderson et al., 1993) asked to evaluate the actions of auditors have also been found to be prone to the bias.

Brown and Solomon (1992, 1987) found that capital-budgeting decisions are influenced by outcome information, and Lipe (1993) found that managerial decisions involving variance investigations are affected by outcomes. In an auditing study involving internal control evaluations and audit opinion decisions, Reimers and Butler (1992) found that auditors exhibit significant (insignificant) hindsight bias when provided with surprising (unsurprising) outcome information. Kennedy (1995) found that auditors are prone to hindsight bias when making both going-concern and analytical review judgments.

These findings suggest that auditors are prone to hindsight bias. As a result, the current study predicts that, despite instructions to ignore outcome information[3], auditors provided with outcome information will exhibit hindsight bias when making going-concern judgments. This leads to the following baseline hypothesis:

H1: Despite instructions to ignore outcome information, auditors with outcome information will judge the reported outcome as more likely to occur than will auditors not provided with outcome information.

Hindsight Bias and Experience Effects

Reducing hindsight bias. Attempts to eliminate or even reduce hindsight bias have been only moderately effective. Exhorting subjects to work hard and cautioning them about the bias have been ineffective (Fischhoff ,1982; Wood, 1978). Hasher et al. (1981) were successful in eliminating hindsight bias, but only by discrediting the outcome information in such a manner that subjects realized that it was totally unreliable. Wood (1978) found that preoutcome judgments can be used to decrease hindsight bias, but only if subjects were encouraged to remember their previous judgments when making their postoutcome judgments. In an experimental markets study, Camerer et al. (1989) found that feedback and monetary incentives alone had no effect on reducing hindsight bias; however, market forces reduced the bias by approximately one half.

A postoutcome debiasing strategy (i.e., instructing subjects to generate reasons for the alternative outcomes after the receipt of outcome information) has been found to significantly reduce, but not eliminate, hindsight bias in both the psychological (Davies, 1987; Slovic & Fischhoff, 1977; Arkes et al., 1988; Lowe & Reckers, 1994) and accounting (Kennedy, 1995) literature. A preoutcome debiasing strategy (i.e., instructing subjects to generate reasons for the alternative outcomes before the receipt of outcome information) has also been found to significantly reduce, but not eliminate, hindsight bias in the psychological literature (Davies, 1987). However, this preoutcome debiasing strategy produced asymmetrical effects in an auditing study (Anderson & Hoffman, 1999) increasing the bias for some outcomes and decreasing the bias for other outcomes.

Effects of experience. Direct comparisons between inexperienced and experienced judges have only recently been made in the hindsight literature (Kennedy 1995), and thus it has not been clear to what extent hindsight bias increases, decreases, or remains unchanged with experience and why. Davies reasoned, but did not empirically test, that experience might increase hindsight bias "because the greater knowledge base of the expert provides greater scope for the biasing of cognitive activity in hindsight, such as favoring evidence, reasons, and explanations which support the reported outcome" (1987, p. 66). Kennedy (1995) explored the extent to which experience decreases hindsight bias in both a going-concern judgment task and an analytical review task. Kennedy found that experience does not reduce hindsight bias due to the cognitive nature of the bias. This study theorizes that based on Fischhoff's creeping determinism explanation for hindsight bias, experience would be expected to increase hindsight bias.

Experience effects and creeping determinism. Based on Fischhoff's (1975) creeping determinism explanation, it seems plausible that the more susceptible an individual is to creeping determinism (i.e., the greater the cognitive restructuring upon receipt of outcome information), the greater the amount of hindsight bias exhibited. This is consistent with Schkade and Kilbourne's (1991) findings that surprising outcomes result in greater cognitive restructuring and thus greater hindsight bias; however, they manipulated the surprisingness of the outcome only and not the experience of the subjects. In an auditing context, the more adept auditors are at restructuring their mental representations of an event scenario to make it consistent with the actual outcome, the greater the difference between their foresight and hindsight perspectives, and thus, the greater the amount of hindsight bias. Based on both psychological and accounting memory research, to be discussed next, it is likely that experienced auditors would be more prone to creeping determinism and therefore would exhibit greater hindsight bias than would inexperienced auditors.

Experience effects and prior research. Prior auditing research (Libby & Frederick, 1990; Moeckel, 1990) has used theories of semantic memory networks to make predictions regarding the effects of experience on auditor judgment. According to semantic memory network models (e.g., Collins & Quillian, 1969; Collins & Loftus, 1975; Smith, 1978), memory is organized in a hierarchical structure comprised of networks of nodes and the links among them. The nodes are grouped into subsets called schemata that represent prototypes of complex concepts or episodes (Thorndyke & Hayes-Roth, 1979; Moeckel, 1990). When new information is encountered, memories representing possibly related concepts or episodes are accessed through a spreading of activation along the links among the nodes (Collins & Loftus, 1975). These activated schemata control all processing of the new information, including not only its comprehension and encoding, but also its subsequent storage in memory (Moeckel, 1990; also see, e.g., Alba & Hasher, 1983; Gibbins, 1984; Waller & Felix, 1984).

In an auditing study examining the effects of experience on memory errors, Moeckel (1990) reasoned that as experience increases, more elaborate schemata are developed, allowing more information to be stored in memory. In addition, with increasing experience, new situations similar to those encountered in the past would be more easily understood by referring to the richer, broader, more refined set of experiences already stored in memory (Bransford & Johnson, 1972; Schallert, 1976; Rumelhart & Ortony, 1977; Gibbins, 1984; Moeckel, 1990). Moeckel (1990) concluded that although experienced auditors' more elaborate schemata may facilitate encoding by decreasing cognitive effort, such schemata also increase the tendency to engage in reconstruction.

Reconstruction is a memory error whereby an individual alters the mental representation of information to make it consistent with existing knowledge or schemata (Moeckel, 1990). In an audit workpaper review task, Moeckel (1990) found that increased experience led to increased reconstruction. More specifically, experienced auditors altered their mental representations of workpapers they had reviewed to induce consistency between contradictory pieces of information within the workpapers.

If experienced auditors are more prone to committing reconstruction errors, it is likely that they are also more prone to creeping determinism. In other words, if experienced auditors are more likely to induce consistency between contradictory information in foresight, it follows that they would also be more likely to induce consistency between an event scenario and its reported outcome in hindsight. Experienced auditors would be better able to rewrite or reconstruct their mental representations of the case scenario by adding semantic links signifying causal relations between events in the case and the actual outcome. Prior research (e.g., Johnson & Kieras, 1983; Fiske & Taylor, 1984; Moeckel, 1990) indicates that experience promotes the development of more links among the items being encoded and with those already stored in memory.

Summary of hindsight bias and experience effects. In summary, when an auditor processes new information, a schema is evoked which guides the processing of this information. Prior to learning the actual outcome, the auditor will have formulated a foresight mental representation of the event. Upon receipt of outcome information, the foresight mental representation of the event will be updated (Loftus &Loftus, 1980; Davies 1987; Mazursky & Ofir, 1990) and reconstructed to make it consistent with the schema evoked by the new information (i.e., the actual outcome). The new hindsight mental representation of the event will differ from the old foresight mental representation due to the updating and reconstructing (i.e., due to creeping determinism).

This foresight-hindsight difference will be greater for experienced auditors due to their more elaborate schemata that enable greater updating and reconstruction. Because the old foresight mental representation is erased (Loftus & Loftus, 1980; Davies, 1987), when asked to ignore the outcome information and judge the outcome's probability as they would have in foresight, the auditors will use the representativeness and availability heuristics to reach their likelihood judgments (Fischhoff, 1975; Davies, 1987; Mazursky & Ofir, 1990). Due to the updating and reconstructing of memory, the features of the known outcome are likely to be perceived as matching or being representative of the salient features of the event, and scenarios leading to the known outcome should be more available in memory, thus leading to an overestimation of the known outcome's likelihood.

In short, experienced auditors' foresight-hindsight difference in their mental representations of the event will be greater than inexperienced auditors'. In addition, experienced auditors when relying on the representativeness and availability heuristics to judge the outcome's probability will have more scenarios and their related features stored in memory. As a result, it is predicted that experienced auditors will judge the known outcome more likely in hindsight than will inexperienced auditors, which leads to the following hypothesis:

H2: Experienced auditors will exhibit greater hindsight bias than will inexperienced auditors.

Research Method

Experimental Design

In order to test the proposed hypotheses, one experiment was conducted. The basic design employed is a 2X3 factorial. The two between factors are experience and outcome. The experience factor has two levels, high (i.e., managers and partners) and low (i.e., staff auditors). The outcome factor has three levels, no outcome (i.e., foresight condition), failure outcome (i.e., hindsight condition - occurrence of bankruptcy), and success outcome (i.e., hindsight condition - nonoccurrence of bankruptcy). The dependent variable is the auditor's going-concern probability judgment (hereafter referred to as a viability judgment).

Subjects and Procedure

The subjects were asked to judge the likelihood that a troubled company would or would not continue as a going concern. The sample of subjects consisted of 114 Big 6 auditors; 57 experienced (i.e., managers and partners) and 57 inexperienced (i.e., staff auditors). To obtain a sufficient number of subjects, it was necessary to administer the experiment at 14 different sessions over the course of four months. Responses to the debriefing questionnaire revealed the mean auditing experience for the experienced (inexperienced) auditors to be 9.4 (1.4) years.

Subjects were randomly assigned to experimental conditions. Each subject received a packet of materials, consisting of a sealed envelope, a page of general instructions, and either five or six pages of case data (including a case review task). After completing the case review task, the written instructions indicated that the subjects were to open the sealed envelope. The envelope contained: the outcome information (if provided), the viability judgment task, and the debriefing task. The subjects were not allowed to use reference materials and were required to work independently.

Tasks

The subjects were provided with a page of general instructions. They also received a narrative summary of pertinent information for a chemical manufacturer and three years of financial data. The narrative summary contained an equal number of adverse factors and mitigating factors.[4] The financial data included the financial statements, a summary of financial highlights, and a set of financial ratios.[5]

Case review task. Figure 1 illustrates the experimental tasks that the subjects were asked to perform. The subjects' first task was to review the case data for Alpha Chemical, Inc. They were instructed to assume the role of supervisor on the Alpha year-end audit. They were also told that the fieldwork had been completed, but the final audit opinion had not yet been written. They were to review Alpha's financial statements in an attempt to assess viability.

Steps	NO OUTCOME	FAILURE OUTCOME	SUCCESS OUTCOME
	/------------------CONDITIONS---------------/		
I	Review Case Data (Task #1)		
II	**No Outcome Given**	**Told Failure Outcome**	**Told Success Outcome**
III	Allowed to refer back to case data Viability Judgment (Task #2)		
IV	Debriefing Questionnaire (Task #3)		

FIGURE 1 Experimental Tasks

Viability judgment task. After reviewing the case data, subjects were instructed to begin the second task, the viability judgment. Before making their viability judgments, subjects in the failure outcome condition were informed that Alpha filed for bankruptcy during the last six months of the year subsequent to the year being audited. Subjects in the success outcome condition were informed that Alpha continued as a going concern throughout the year subsequent to the year being audited. Subjects in the no outcome condition were not provided with outcome information.

All subjects were instructed to assume that it was the last day of fieldwork for Alpha's year-end audit. At that time (when they would not have known what actually happened to Alpha), they were to estimate the likelihood that Alpha would or would not continue as a going concern throughout the year subsequent to the year being audited. The instructions in parentheses were not given to the subjects in the no outcome condition.

The subjects in the failure outcome and success outcome conditions were instructed to ignore the outcome information. All of the subjects were informed that they could refer back to the case data if necessary before making their viability judgments.

Subjects were asked to assess the probability, existing at year end, that the firm would continue as a going concern throughout the year subsequent to the year being audited by placing an "X" on a probability scale. Subjects were asked to express their judgment of Alpha's viability in terms of a probability between 0% and 100%, where 0% indicates that Alpha is certain NOT to continue as a going concern, and 100% indicates that Alpha is certain to continue as a going concern.

Debriefing task. The final task for all subjects was completing a one-page debriefing questionnaire. Subjects were asked to indicate their number of years and months of auditing work experience, their current rank within their firm, and the number of minutes they took in completing the experiment. They were also asked to indicate both the number of audit engagements they had been associated with in which substantial doubt existed regarding the client's ability to continue as a going-concern and their degree of involvement in the going-concern evaluation of these clients. In addition, they were asked to rate their degree of proficiency at evaluating a company's going-concern status. Finally, subjects in the failure outcome and success outcome conditions were asked to indicate the degree of influence, if any, the outcome information had on their viability judgments.

Results

H1 predicted that, despite instructions to ignore outcome information, auditors with outcome information would judge the reported outcome as more likely to occur than would auditors not provided with outcome information. More specifically, auditors informed that the case company failed (continued) would be more likely to judge the continued viability of the company as being less (more) likely than the auditors not provided with outcome information. H2 predicted that, due to creeping determinism, the degree of hindsight bias exhibited would be greater for the experienced auditors. The means and standard deviations for the viability judgment dependent variable are presented in Table 1.

ANOVA Results - Interaction Effects

To test the effect of outcome information and experience on auditors' viability judgments, a 2X3 (experience by outcome) ANOVA was performed. The experience factor has two levels (i.e., high and low), and the outcome factor has three levels (i.e., no, failure, and success).

The ANOVA results are presented in Table 2. The two-way interaction between experience and outcome is not significant (p=0.80); therefore, H2 is not supported; hindsight bias does not increase with experience. However, the main effect of outcome is significant (p=0.00).

TABLE 1 **Means and (Standard Deviations) of Viability Judgments by Experimental Conditions**

	OUTCOME		
	No	**Failure**	**Success**
EXPERIENCE			
High	**57.37%** **(17.19)** **n=19**	**55.05%** **(17.66)** **n=19**	**64.42%** **(18.67)** **n=19**
Low	**63.95%** **(17.12)** **n=19**	**53.68%** **(16.90)** **n=19**	**69.58%** **(17.00)** **n=19**

Simple Main Effect Tests. In order to determine the effect of outcome on auditor viability judgment, simple main effect tests consisting of a series of contrasts were conducted. The means contrasted are the combined means for the experienced and inexperienced auditors taken from Table 1.

The combined mean viability judgments are summarized below:

No Outcome.......60.66%
Failure Outcome..54.37%
Success Outcome..67.00%

In order to test H1, it was necessary to determine if the failure outcome mean viability judgment of 54.37% and the success outcome mean viability judgment of 67.00% are significantly different from the no outcome mean viability judgment of 60.66%. The failure outcome subjects' mean viability judgment of 54.37% is significantly less than the no outcome subjects' mean viability judgment of 60.66% (p=0.06, one-tailed probability). This indicates that, despite instructions to ignore the outcome information, being informed that the case company failed caused the subjects in the failure outcome condition to judge continued viability as less likely than did the no outcome subjects. In other words, the failure outcome subjects were prone to hindsight bias.

TABLE 2 ANOVA: Experience by Outcome on Viability Judgments

Source of Variation	SS	DF	MS	F	Sig. of F
Experience	0.038	1	.038	1.21	.272
Outcome	1.308	2	.654	20.91	.000
Experience by Outcome	0.014	2	.007	.22	.803

In addition, the success outcome subjects' mean viability judgment of 67.00% is significantly greater than the no outcome subjects' mean viability judgment of 60.66% ($p=0.059$, one-tailed probability). This indicates that, despite instructions to ignore the outcome information, being informed that the case company continued caused the subjects in the success outcome condition to judge continued viability as more likely than did the no outcome subjects. In short, both the failure outcome and the success outcome subjects were prone to hindsight bias. This provides support for H1; auditors with outcome information judged the reported outcome as more likely to occur than did auditors not provided with outcome information.

Discussion and Conclusion

The purpose of this study was to examine the effects of hindsight bias on auditor judgment and the degree to which the bias is influenced by experience. Consistent with prior auditing research (Kennedy, 1995; Reimers & Butler, 1992), the current study found that auditors are prone to hindsight bias when making probability judgments (H1). Contrary to H2, the current study did not find that hindsight bias increases with experience, but instead the bias remains unchanged with experience. This finding of no experience effect is consistent with prior auditing research (Kennedy, 1995).

The presence of hindsight bias in the context of going-concern judgments presents two important implications for the auditing profession. First, the "knew-it-all-along" attitude created by hindsight bias may impede feedback learning (Fischhoff, 1975), thereby reducing what auditors could potentially learn from the feedback provided by actual bankruptcies. The presence of hindsight bias is particularly troubling in the case of the failure outcome. As compared to success outcomes, auditors have limited actual experience with failure outcomes. Also, because inaccurately predicting the failure outcome (i.e., issuing an unqualified opinion to a troubled company that subsequently fails) poses more dire consequences for public accounting firms than does inaccurately predicting the success outcome (i.e., issuing a modified opinion to a troubled company that continues), it is imperative that auditors learn as much as they can from troubled companies that fail. This is especially important in light of auditors' increased reporting responsibilities for firm's experiencing going-concern problems (SAS No. 64, AICPA 1990a; SAS No. 59, AICPA 1988) and the mounting number of corporate bankruptcies resulting from the recession of the late 1980's and early 1990's (Pittsburgh Post Gazette, 1996; AICPA 1990b). A second important implication of the presence of hindsight bias in a going-concern context is that auditors who issue unqualified opinions to client companies that subsequently fail may be unfairly evaluated, in hindsight, by interested third parties such as the SEC, stockholders, expert witnesses, jurors, and peers (Kennedy, 1995; Lowe & Reckers, 1994). These third parties may be unable to ignore the outcome information they have (i.e., the company did indeed fail) that the auditors did not have at the time they made their opinion decision.

The current study predicted that experienced auditors would exhibit greater hindsight bias than would inexperienced auditors. Although the current study found that auditors are prone to hindsight bias, a significant experience effect was not found. It appears that the degree of hindsight bias exhibited by auditors remains unchanged with experience.

The primary explanation for not finding experience effects may be that the experienced subjects' foresight mental representations of the case did not substantially differ from the inexperienced subjects' foresight mental representations. In other words, the experienced subjects' going-concern schemata may not have been substantially more elaborate, and they may not have had significantly more adverse factors and mitigating factors stored in memory. If the inexperienced and experienced subjects' foresight mental representations of the case did not significantly differ, there is little reason to expect their hindsight mental representations of the case to differ. If the experienced subjects do not have more elaborate going-concern schemata, then, upon receipt of outcome information, the experienced subjects' degree of cognitive restructuring should not be greater than the inexperienced subjects', resulting in similar hindsight mental representations between the two groups. If the foresight-hindsight difference in mental representations of the case does not significantly differ between the inexperienced and experienced subjects, then the degree of hindsight bias between the two groups should not significantly differ.

The extent to which the experienced subjects' foresight mental representations of the case differed from the inexperienced subjects' can be determined by analyzing the subjects' self-generated lists of adverse factors and mitigating factors which were collected for analysis in a separate study on hindsight debiasing strategies (Anderson &Hoffman, 1999). In order to test the effectiveness of a preoutcome debiasing strategy (Anderson & Hoffman, 1999), another group of 114 Big 6 auditors (57 experienced and 57 inexperienced) were instructed to record as many adverse factors and mitigating factors as they could that they believed should be considered in determining the Alpha case company's viability and to rate the importance of each factor on a 4-point scale. They were provided with enough space to record as many as ten adverse factors and ten mitigating factors.

Because the lists of reasons were prepared prior to the receipt of outcome information, they represented a written record of the subject's foresight mental representation of the case data. It was theorized that because experienced auditors have more elaborate going-concern schemata and, as a result, have more adverse factors and mitigating factors stored in memory, they should be able to record significantly more factors than inexperienced auditors. However, this was not the case.

Based on t-tests, the mean number of adverse factors recorded by the experienced subjects of 6.82 is not significantly greater than the mean number of adverse factors recorded by the inexperienced subjects of

6.33 (p=0.10, one-tailed probability). The mean number of mitigating factors recorded by the experienced subjects of 5.19 is greater than the mean number of mitigating factors recorded by the inexperienced subjects of 4.65; however the difference is only marginally significant (p=0.07, one-tailed probability).

In addition, based on t-tests, the importance ratings assigned to the adverse factors and mitigating factors do not significantly differ between the inexperienced and experienced subjects. The inexperienced subjects' mean importance rating for the adverse factors of 3.18 is not significantly different from the experienced subjects' mean importance rating for the adverse factors of 3.23 (p=0.38, two-tailed probability). The inexperienced subjects' mean importance rating for the mitigating factors of 2.94 is not significantly different from the experienced subjects' mean importance rating for the mitigating factors of 2.89 (p=0.57, two-tailed probability).

Based on the foregoing analysis, it appears that the experienced subjects' foresight mental representations of the case were very similar to the inexperienced subjects' foresight mental representations. There are three plausible explanations that might account for these findings. First, although the experienced subjects were more experienced in terms of number of years employed as auditors, they were not substantially more experienced in terms of number of engagements worked on in which going-concern problems existed. One of the questions in the debriefing questionnaire asked, "On how many audit engagements that you have been associated with did substantial doubt exist regarding the client's ability to continue as a going concern?" Of the 228 auditors who participated in the study, the mean number of clients experiencing going-concern problems worked on by the inexperienced subjects was .93; for the experienced subjects, it was 4.59. However, the 4.59 average included 11 (9.6%) experienced subjects who had worked on 10 or more going-concern engagements (1 experienced subject had worked on 10 going-concern engagements, 1 on 12, 3 on 15, 3 on 20, 1 on 23, and 2 on 50). The mean number of going-concern clients for the remaining 103 (90.4%) experienced subjects was only 2.65.

Second, the degree and type of formal training auditors receive regarding going-concern situations may be so standardized and similar that all auditors, regardless of experience level, share a nearly identical going-concern schema or mental model. This schema may be so well learned and entrenched that actual experience with going-concern situations changes it only slightly. If auditors do share a universal going-concern schema, it would be expected that their foresight mental representations of a specific case would be similar.

Third, experienced auditors may have more elaborate going-concern schemata as compared to less experienced auditors. However, in the current study, the inexperienced and experienced subjects inherited the same specific case data, and they may have relied on the same foresight mental representations of this case data. According to Hawkins and Hastie (1990), the hindsight literature has not yet established whether outcome information alters an individual's mental representation of the specific case evidence or the mental representation of the general domain under consideration. It is possible that the inexperienced and experienced subjects' mental representations of the specific case scenario were altered and not their overall going-concern schemata (i.e., their mental representations of the general domain).

Although the current study predicted that experienced auditors would exhibit greater hindsight bias than would inexperienced auditors, the study's results indicated that the bias does not intensify or diminish with experience, but instead remains unchanged. One of the main contributions of this study is the potential need for continued, rather than reduced, reliance on training programs and decision aids as experience increases. Given that experience neither increases nor decreases hindsight bias and given that monetary incentives (Camerer et al., 1989; Hell et al., 1988) and accountability (Kennedy, 1995) have been found to be ineffective in counteracting the bias, it is important that public accounting firms employ debiasing strategies to effectively mitigate the bias at all experience levels. Both preoutcome (Anderson & Hoffman, 1999) and postoutcome (Kennedy, 1995) debiasing strategies have been found to be somewhat successful in reducing hindsight bias for both experienced and inexperienced auditors.

Another main contribution of the current study is that it further develops the creeping determinism explanation for hindsight bias and uses it to make predictions regarding the effects of experience on hindsight bias. In the past, hindsight researchers primarily used creeping determinism as a post hoc explanation for observed results rather than as a theoretical basis for making a priori predictions. Unless the creeping determinism explanation is subjected to rigorous empirical testing, the extent to which it accurately explains the mechanisms underlying hindsight bias will not be fully understood.

The results of the study must be interpreted in light of certain limitations. First, the study involves a sample of auditor subjects from international Big 6 public accounting firms which limits the generalizability of the results to smaller public accounting firms at the national, regional, and local levels. Second, it is difficult to determine whether the subjects were sufficiently motivated to concentrate on the experimental tasks and to complete the tasks as they would in practice. Third, the subjects did not have access to the array of information, resources, and consultations with others that would normally be available to them during an actual audit. Also, the subjects may not have been able to relate to many situations in practice in which they are required to ignore known outcomes and explicitly indicate what judgments they would have made at some point in the past.

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ENDNOTES

1 Fischhoff (1975) developed the standard paradigm of hindsight research in a study in which subjects were instructed to judge the outcomes of four obscure events (e.g., the outcome of the British-Gurka war). All subjects received a written description of the event followed by a list of four possible outcomes and instructions to judge the probability of occurrence for each one. At the end of the written description and prior to making the probability judgment, one of the four possible outcomes was randomly reported as the actual outcome to the subjects in the hindsight condition. The results revealed that the hindsight subjects estimated a significantly higher probability of occurrence for the reported outcome than did the foresight subjects who had no outcome information. Even when hindsight subjects were provided with explicit, unambiguous instructions to ignore the outcome information or when they were asked to respond as a peer would who did not know the outcome, the probability judgments revealed significant hindsight effects.

2 Creeping determinism is also consistent with Loftus and Loftus (1980) who suggested that memory for complex events will be erased and updated by new information when it is inefficient or inconsistent to retain two different memories. This update and erase view of memory maintains that the foresight state of mind cannot be recaptured in hindsight (Davies, 1987; Mazursky & Ofir, 1990). When instructed to

ignore outcome information and to judge the outcome of an event as if they did not know the outcome, hindsight judges have no memory of their initial foresight knowledge or uncertainty. Unable to recapture their foresight states, judges may use the representativeness or availability heuristics (Tversky & Kahneman, 1974) in making their likelihood judgments (Fischhoff, 1975).

3 True hindsight bias occurs when individuals with outcome information falsely believe that they would have predicted the outcome of an uncertain event (Hawkins & Hastie, 1990). It is a projection of new knowledge into the past accompanied by a denial that the outcome information has influenced judgment (Hawkins & Hastie, 1990). Lack of awareness of the effects of outcome information on likelihood estimates is a key component of hindsight bias (Fischhoff, 1975). Without this denial and lack of awareness, the task would simply represent learning from feedback (Fischhoff, 1975; Hawkins & Hastie, 1990). According to Hawkins and Hastie, if "the instructions to respond as if the outcome were still unknown were dropped, one would have a simple learning-from-outcome feedback task. In such a learning task, one would expect the subjects to alter their estimates of retrospective probabilities, and one would not call the adjustments a hindsight `bias'" (1990, p. 311-312).

4 The adverse factors and mitigating factors used in the current study were selected from the list of such factors developed by Kida (1984).

5 The current study used the same case company (but not the same narrative summary) as the one used by Maddocks' (1989) in her hindsight experiment.

Consumer Services and Advertising Appeals: An Analysis of Belize, Central America, Newspaper Advertisements

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Abstract

Consumer service appeals contained in newspaper advertisements were analyzed along four dimensions. The first dimension covered readership congruency and the related social and self-concepts. Socially congruent appeals were evaluated for the extent they supported cultural values of individualism or collectivism. Appeals analyzed in the combined social and self-concepts categories of the congruency dimension included value-expressive, utilitarian, episodic and semantic appeals. A second dimension identified and determined the strength of motivational stimuli. Based on previous research, Maslow's hierarchy of needs was divided into two parts--lower-level needs and upper-level needs. A third dimension of the analysis investigated language style and overall tone of the advertisement. Language style analysis looked at choice of action words and reader-oriented expressions. A fourth dimension analyzed the strength, variety, and overall effect of visual attractiveness, including color, graphic techniques, picture use, and font variation. The most frequently identified appeals were utilitarian which provided straight information about the service and stated cost saving advantages. The least frequently used appeals were those providing motivational stimuli, particularly in the lower-level needs area of Maslow's hierarchy. Strengths of advertisement appeals were relatively low in most areas. Results indicated advertising appeals targeted to a Western tourist and sojourner audience may need increased attention to appeal selection and strength for maximum promotional effects. Suggestions are presented for additional investigation of the Belize consumer audience and Western tourist audience, how these might differ, and how advertising appeals might adapt accordingly.

The type and strength of advertising appeals are key factors in determining whether or not an advertisement captures the consumer's attention and encourages an action to purchase. Savvy business advertisers are not only aware of this, they are also skilled in appeal design, selection, and use for specific markets.

The purpose of this study was a) to determine the type and strength of appeals used in print media by Belize advertisers for consumer services, and b) to determine whether Belize advertisers were designing, selecting, and using appeals in a manner likely to be effective for specific consumer audiences such as Western tourists and

Belize nationals. Results were expected to provide the basis for a seminar whereby business advertisers have an opportunity to expand their knowledge and to further develop advertising techniques, thus attracting an increased number of customers both nationally and internationally. A previous study by the authors (Brandenburg & Dudt, 1997) reported on their investigation of advertising appeals used for tangible goods and products. Analysis of tangible goods and products were published in a separate article because the characteristics of service advertisements and the businesses which do service advertising are likely to be substantially different than those of tangible products.

Belize Culture

Belize is a small developing country about the size of Massachusetts and bordered by Mexico, Guatemala, and the Caribbean Sea. The population (200,000) is diverse: 40% Creoles, 33% Mestizos (Spanish and Indian mix), 9.5% Mayans, 8% Carinagu (Caribbean and African mix), and the remaining 9.5% are African, European, North American, Chinese, Arab, or Mennonite.

For more than 100 years Belize was ruled by Great Britian, but in 1981 Belize became a sovereign nation. In 1993 Britain withdrew its last troops, leaving Belize to independently establish economic and political stability. Belize is a democratic nation and her economy is based in agriculture, including forest products. Tourism, however, is the fastest growing source of income, and Westerners are the primary tourists and sojourners within the nation. English is the official language, and Belize emulates Western ways and customs and celebrates most Western holidays. These features are especially attractive to Western tourists and sojourners (CulturGram '95).

Because Belize businesses are generally aware of the financial rewards of attracting the business of Westerners, as well as nationals, business advertisers have expressed interest in increasing the effectiveness of their advertising campaigns (Personal conversations with Belize business persons, spring 1996). Additionally, advertisers have expressed concern that advertising investments fall short of desired results (Personal conversations, 1996). Skillful design, selection, and use of advertising appeals for a targeted audience are especially important because Belize faces stiff competition from large foreign businesses operating within the Belize nation, as well as from international competitors where Belize services are promoted internationally.

With the encouragement of the Belize Institute of Management, an advertising analysis was conducted and seminar developed to present the results of this study and provide training. The outcome of the study and seminar were expected to attract additional tourist and sojourner sales, as well as national and international business sales. The remainder of this report presents a background of the study of advertising appeals, methods used to analyze Belize service advertisements, findings of the investigation, and sections on discussion, implications and recommendations.

Literature Review

No existing literature was located which analyzed advertising practices in Belize for consumer services. The literature presented in this section is that which is known about advertising appeals in general and their use for the advertisement of consumer products or services. Accordingly, four dimensions of appeal analysis are reviewed.

According to Moriaty and Sayre (1982), persuasive advertising appeals feature readership congruency, motivational stimuli, effective language style, and visual attractiveness.

Readership Congruency

Readership congruency is the fit between the appeal of a persuasive message and an audience's culturally based social and self-concepts. A core dimension of social congruency is cultural orientation toward collectivism or individualism, which is likely to be expressed in consumer product and service advertising as well as in other facets of a culture's activities. Collectivism emphasizes interdependency, harmony, family security, social hierarchies, cooperation, and low levels of competition. Individualism emphasizes independence, personal achievement, freedom, pleasure, and competition (Han & Shavitt, 1994; Davidson, Jaccard, Triandis, Morales, & Diaz-Guerrero, 1976; and Glenn, Witmeyer, & Stevenson, 1977). Han & Shavitt (1994) for example, found that more favorable attitude ratings were given by Japanese consumers when product promotions were consistent with the collectivistic orientation of their culture. Likewise, more favorable attitude ratings were given by United States consumers when promotions were consistent with the individualistic orientation of the United States. Results of the Davidson, et al. (1976) study indicated that social norms, roles, and values are weighted more heavily among collectivistic consumers while perceived costs and benefits are more heavily weighted among consumers of individualistic cultures. Glenn, et al. (1977) found that consumers are most likely to favor messages consistent with the expectations, experience, and needs reinforced within their culture.

In addition to social congruency, self-congruency plays an important role in use of advertising appeals. Self-congruency is defined as the psychological process of recognizing source cues which are consistent with, or match, the self-concept (Johar & Sirgy, 1991). The stronger the match, the greater the possibility of message persuasion. Therefore, effective appeals will include source cues which are readily recognized by the consumer and consistent with the consumer's self-concept.

Among the categories studied within the concepts of social and self-congruencies and appropriate for designing and using advertising appeals are value-expressive appeals, utilitarian appeals, episodic memory appeals, and semantic memory appeals. Value-expressive appeals report the relationship between self-concept and a stereotype consumers have of the typical product user, while utilitarian appeals focus on basic product or service information and cost savings (Johar & Sirgy, 1991). Episodic memory appeals suggest an event or episode and related emotions. Semantic memory appeals refer to categories which we hold for things as well as rules about which things usually go together. Thorson (1984) found that storage of information about episodic events plays a significant role in advertising effects and both episodic and semantic memories are involved in a successful persuasive message leading to purchase.

In addition to meeting appropriate congruency needs of a consumer audience, advertisers will apply motivational stimuli to solicit consumer responses.

Motivational Stimuli

If a message is appropriately designed to motivate a targeted consumer, it must relate to the consumer's interests, needs, goals, or problems; for the reasons behind any purchase are the benefits or satisfaction the consumer receives (Mueller, 1986). A well-known model for identifying benefits and satisfaction in relationship to human needs is Maslow's hierarchy which includes, in order of importance, physiological needs, safety needs, social needs, esteem needs, and self-actualization needs. Maslow's theory of motivation is based on the premise that a) a person will have many needs, b) these needs will vary in importance and can, therefore, be ranked in a hierarchy, c) the person will seek to satisfy the most important need first, d) when a need is satisfied it will cease being a motivator, and e) the person will then turn to the next important need (Maslow, 1954).

Maslow's theory has been refined and applied to the development of advertising appeals. Secrist (1988), for example, named four minimal classifications of motivation to consider at the time persuasive messages are created. Two of these appeal to consumers who seek to satisfy Maslow's lower levels needs for food, clothing, shelter, and safety. The remaining two relate to Maslow's upper-level needs for social appeal and ego-attitude support and include a) the social appeals which promote prestige, love, acceptance, and relational rewards, and b) appeals which support ego-attitude by bolstering self-image and helping to define one's own role and recognize one's own worth without undue concern for the approval of others. Research based on motivation theory and appeals suggests that effective appeals are consistent with the general need levels of targeted consumers (Zacker, 1967; Secrist, 1988).

Language Style

Language style refers to the choice of words, word combinations, and level of formality which collectively create an overall tone for a message; for it is not so much what is said as how it is said that generates a certain effect (Zikmund & d'Amico, 1995). Two common types of word choice are action words and reader-oriented expressions. Action words give force to a message to indicate succeeding, doing, achieving, or actively benefiting from a product or service (Bovee & Thill, 1995; Guddey, 1995). Reader-oriented expressions bring the reader directly into focus and describe reader benefits, needs, and interests (Bovee & Thill, 1995; Guffey, 1995; Zikmund & d'Amico, 1995). The use of action words (verbs) and reader-oriented expressions help put the reader directly in the picture. The reader is thus encouraged to identify with the service as the means to satisfy needs and derive benefits.

Visual Attractiveness

Advertisements should be created to visually grab the reader's attention (Zikmund & d'Amico, 1995), as visual appeal may be the first element of an advertisement that draws the consumer's attention. Visual appeals that grab the consumer's attention and set the mood and effect of the message will do so through use of color, graphics techniques, pictures, and font variation. As is true with other appeal criteria, visual appeal should be consistent with the expectations, norms, and values of the identified consumer group.

The appeals analysis model presented in Figure 1 clarifies and illustrates the four dimensions for analyzing advertising appeals and the associated appeal categories supported in the literature reviewed and relevant to this study.

Figure 1. Four Dimensions of Advertising Appeals.

Readership Congruency

(Social Congruency)
- ➢ Collectivism
- ➢ Individualism

(Social and/or Self-Congruencies)
- ➢ Value-expressive
- ➢ Utilitarian
- ➢ Episodic memory
- ➢ Semantic memory

Motivational Stimuli

(Satisfaction of lower-level needs)
- ➢ Rational appeals
  - Factual information
  - Cost, time economies
- ➢ Sensory appeals
- Taste, smell, feeling food

(Satisfaction of Upper-level needs)
- ➢ Social appeals
- Prestige, acceptance
- Relational rewards, role definition

Language Style

- ➢ Overall tone
  - Word choice--
Action words
Reader orientation
- ➢ Formality

Visual Attractiveness

- ➢ Color
- ➢ Graphics
- ➢ Pictures
- ➢ Font variety
- ➢ Overall visual impact

Based on extant research which 1) supports the development of an appeals analysis model (see Figure 1) and 2) provides evidence that advertising appeals will (a) be congruent with consumers' social and self-concepts, (b) motivate consumers to satisfy needs through purchase of the advertising services, (c) use language which describes action and involvement with the service, and (d) apply attractive visual cues; and based on the absence of previous studies which analyze Belize advertising practices, the following research questions are stated:

4. Do Belize advertising appeals, which are used to promote services, appear to be congruent with social and self-concepts of consumer audiences, as defined by social collectivism or individualism and indicated by an emphasis on personal or individual use services?

2. Do Belize advertising appeals, which are used to promote services, apply motivational theory to encourage consumers to satisfy lower and/or upper level needs?

3. To what extent do Belize advertising appeals used to promote services incorporate action words and consumer-oriented expressions?

4. What are the common visual cues of Belize service advertisements which might initially draw then retain the consumer's attention?

Methodology

Appeals analysis included the identity of appeal types as well as appeal strengths for consumer services advertised in nationally distributed Belize newspapers. The sample consistsed of 38 unique service advertisements spanning all five of the nationally distributed newspapers during a two week period. All national newspapers were used and all advertisements therein because Belize is a small nation and the quantity of newspapers and unique service advertisements are not extensive. The study is considered exploratory because of the small sample size of service advertisements (n=38) and the absence of literature describing Belize cultural characteristics and Belize advertising practices in particular. Belize service advertisements appeared in Reporter, 28(1); Alkebulan, 2(8); Amandala, 1330; Amandala, 1329; The San Pedro Sun, 5(9); and the People's Pulse, 8(8). The following types of services were among those advertised in the newspapers and included in the analysis:

Banking and investment
Clothes tailoring
Fitness and spas
Bible study, crusade activities
Communications
Medical care
Childcare
Computer training
Rentals for vehicles, other
Cleaning and pest control
Entertainment & travel
Vehicle care, repair

The appeals analysis included a frequency count for number of times an appeal was identified among the set of advertisements analyzed and an intensity rating for strength of appeal, as perceived by trained research assistants. Three raters independently identified types of appeals and determined appeal intensity ratings. Raters received one hour of training prior to analyzing Belize advertisements. Only appeals that could be explicitly identified by all raters were counted as data. An ordinal scale of 1 to 10 was used to record appeal strength. A value of 1 indicated a weak, barely discernible appeal; whereas a value of 10 indicated a strong, aggressive appeal. Inter-rater reliability was based on percentage of agreement between raters and ranged from .78 to .96 for all categories combined. As differences among raters occurred, they worked to resolve the differences and reach a conclusion regarding the final recorded rating. Data for the following twelve categories were recorded:

Readership Congruency

(Social congruency)

1. Individual use or collective use services which may reflect the advertisers' experiences in meeting consumer preferences for individualistic or collectivistic values.

(Social and self-congruencies)

2. Value-expressive appeals, which represent the match between self-image and the image of an ideal service consumer.
3. Utilitarian appeals, which include basic service information and cost savings (especially consistent with an individualistic cultural orientation).
4. Episodic and semantic appeals, suggesting events and related emotions, as well as categories in which things and events are placed.

Motivational stimuli

5. Maslow's lower-level needs, which includes physiological (basic human needs, food, clothing, shelter) and safety needs.

6. Maslow's upper-level needs, consisting of social approval and belongingness as well as ego-attitude support which would bolster self-image, define one's role, or recognize one's worth.

Language use

7. Action words to suggest doing, achieving, benefiting.
8. Reader-oriented expressions to help the reader directly identify with the service as a means to satisfy needs and derive benefits.

Visual cues

9. Color, including gray tones.
10. Graphics, including use of white space, art, and design.
11. Pictures.
12. Font variety.

Findings

Table 1 presents the mean appeal strengths and frequencies of occurrence for each of the four appeal dimensions and their related categories. The appeals analyzed were those located in 38 unique service promotions printed in nationally distributed newspapers of Belize over a two week period.

Findings for social congruency indicated that 65.8 percent of the advertised services emphasized individual users, such as fitness and spas, medical care, and computer training. Only 34.2 percent of the advertisements emphasized services for shared use, such as communication devices (cellular phone and beeper services, vehicle rental, entertainment and travel). All services advertised were classified as emphasizing or appropriate for either individual or shared use. These results, with an emphasis on individual users, may reflect an individualistic orientation within the Belize culture.

Findings in the combined social and self-congruencies category, congruencies which might be classified as social or self or both, showed that utilitarian appeals appeared in all advertisements to some extent; but episodic and semantic appeals appeared in only 29 percent (n=11) of the advertisements. Further analysis of utilitarian appeals indicated preferences for providing straight factual information and service descriptions (97.4%, n=37).
Appeals to economy or cost savings, also a part of the utilitarian category, were identified in 55.3 percent (n=21) of the service advertisements. The utilitarian category and particularly the subcategories for factual information, strict description, and economy and cost savings are consistent with those of an individualistic cultural orientation (Davidson, et al, 1976). The exclusion of value-expressive appeals in Table 1 can be explained by the fact that Belizian self-concepts and perceptions of the ideal consumer of specified services were not yet defined. Value-expressive values and their applications for advertising to Western tourists is addressed in the discussion section of this report.

A second dimension of appeals analysis considered type and strength of motivational stimuli. Findings showed that upper-level appeals were nearly three times more frequently used (45%, n=17) than lower-level appeals (15.8%, n=6) for advertised services. Mean strengths of motivation appeals for upper- and lower-level motivation were similar (4.35 compared to 4.25), and mode and range were identical

A second dimension of appeals analysis considered type and strength of motivational stimuli. Findings showed that upper-level appeals were nearly three times more frequently used (45%, n=17) than lower-level appeals (15.8%, n=6) for advertised services. Mean strengths of

motivation appeals for upper- and lower-level motivation were similar (4.35 compared to 4.25), and mode and range were identical

A third dimension of appeals analysis considered language style and tone, which showed 81.6 percent (n=31) of the advertisements included action words for doing, achieving, and/or benefiting. Mean strength for action words was 4.02, indicating moderately low application of action expressions (scale 1 low, 10 high). Fewer service advertisements made use of reader-oriented words (60.5%, n=23) such as you, yours, ours, etc. Strength of this category was a low 1.4, indicating barely discernable direct references to the reader.

The fourth, and final, dimension of appeals analysis was the use of visual criteria to create an attractive service advertisement. The overall strength rating of this dimension of analysis was 4.61, slightly under midrange on a scale of 1 to 10. Within this category, font variety showed the highest mean (4.61) while color showed the lowest (2.08). Graphics showed a mean of 4.4, while picture use indicated a low mean strength of 2.5. Further analysis of the type pictures used in advertisements revealed that most pictures were of signs, symbols, or geographic markers. Few advertisements included pictures of people; only 5 of the 38 service advertisements (13%) depicted women or children.

Table 1
Frequency of Appeal Occurances and Mean Appeal Strengths
For Each of Four Appeal Dimensions

Appeal Dimensions And Related Categories	Occurrence (as % of total set of 38)	Strength (scale 1 very weak - 10 aggressive) Mean	Mode	SD	Range
Readership congruency					
(Social congruency appeals)					
Personal-use services	65.8 (25)				
Shared-use services	34.2 (13)				
(Social and self-congruency appeals)					
Utilitarian (basic info, cost savings)	100 (18)	4.81	6	1.71	1 - 7
Episodic and semantic	29.0 (11)	1.98	3	1.05	1 - 6
Motivational appeals					
Maslow's lower level	15.8 (6)	4.25	5	1.71	1 - 7
Maslow's upper level	45.0 (17)	4.35	5	2.06	1 - 7
Language style and tone					
Action words	81.6 (31)	4.02	5	3.01	1 - 10
Reader-oriented expressions	6.5 (23)	1.40	1	1.59	1 - 5
Visual cues					
Color (including gray shading)	89.5 (34)	2.08	2	1.28	1 - 6
Graphics	97.4 (37)	4.40	6	1.69	1 - 7
Pictures	68.4 (26)	2.50	2	2.10	1 - 6
Font variety	100 (38)	4.60	4	1.39	2 - 7
Overall appearance impact	100 (38)	4.61	6	1.24	2 - 6

Discussion

The first question this study sought to answer was, "Do Belize advertising appeals which are used to promote services appear to be congruent with social and self-concepts of consumer audiences, as defined by social collectivism or individualism and indicated by an emphasis on personal or individual use services? Conclusions about advertising appeals and their congruency with Belizian social and self-concepts can only be tentative. No previous research was located which provided cultural information about these concepts for the Belize culture, nor did the present study adequately investigate these issues. However, Belize culture may be individualistically oriented, based on advertising preferences shown toward personal use services. If so, the congruency dimensions identified within the service advertisements would appear to be appropriate for a Belizian audience. The Western tourist or sojourner of the United States is known for individualistic values, and for that reason the advertisements may be appropriate for this consumer group as well.

An additional part of the first question covered social and self-congruency combinations including value-expressive appeals, utilitarian appeals, as well as episodic and semantic memory appeals. Conclusions cannot be stated about congruencies of value-expressiveness appeals for Belizians, again because of the lack of available literature on this topic. However, the value-expressive appeals, as identified in this study, would probably not be very effective with Western tourists and sojourners. As Glenn, et al. (1977) indicates, a consumer's expectations, experiences, and needs are culturally bounded; and in order to persuade a consumer to action, effective advertisement appeals will be anchored to culturally held values. Western consumers, however, will seldom find people, occasions, or Western values in Belizian advertisements with which they can identify. If social and self-congruencies were included in advertisements targeted toward the Western audience, Westerners might more readily identify with an ideal service user, relate the services to personal benefits as action words and reader-oriented language are read, and be further motivated to a purchase action.

Utilitarian appeals were frequently identified throughout the service promotions analyzed. If Belizians do indeed value individualism as a cultural value, cost savings and strict factual information, which are characteristic of the utilitarian appeals category, would represent congruent values for this group. Utilitarian appeals would appear to offer definite congruency for a Western audience based on the apparent consistency with individualistic values (Davidson, et al., 1976).

Episodic and semantic memory appeals, however, were little used for service advertising in Belize. A few advertisements referenced a national Belizian holiday, but no advertisement referenced a holiday or occasion and associated emotions common to a general Western audience. Additional use of memory appeals might increase the probability of a sale to visitors of Belize as a result of advertising. As Thorson (1984) as suggested, both episodic and semantic memories are involved in a successful message leading to purchase.

A second question of this study asked, "Do Belize advertising appeals which are used to promote services apply motivational theory to encourage consumers to satisfy lower and/or upper level needs?" Upper-level appeals were more predominant than lower-level appeals in the results (45% for upper-level as compared to 15.8% for lower-level need appeals). Appeals to upper-level need satisfaction are consistent with an individualistic culture such as the United States (and possibly Belize) where individuals aspire to accomplish, be admired by others, and readily compete for personal rewards or honors. However, the upper-level appeals of Belizian advertisements were only moderately strong and, for a Western audience at least, should be increased to strengthen their persuasive power.

Question 3 sought to answer, "To what extent do Belize advertising appeals used to promote services incorporate action words and consumer-oriented expressions?" The Belize advertisements used only a moderate amount of action words, and those were generally not directed to the consumer. For example, expressions such as "deposits grow to...", and "XY services will solve problems caused from..." contain action words grow and solve, but they do little to support the individualistic, competitive, recreation or fun seeking Western audience. While the advertisements may be appropriate for Belizian consumers, they may have little persuasive affect with Westerners consumers. Since Belizian input was not included in this study, appropriateness of the quantity of action words for Belizians consumers can only be speculative.

Reader-oriented expressions contained in the service advertisements were barely discernable (mean 1.4 on a scale of 1 low to 10 high). Persuasive messages will generally build desire, conviction, and lead to action on the part of the consumer, ending with a "I've gotta' have this" attitude about the service. In order to accomplish this for the Western audience, Belizian advertisers would do well to include a direct reader orientation through deliberate and careful selection of words and expressions. Generally, Westerners experience strong persuasive elements and stimulating appeals in the advertisements of the United States and will look for these qualities in advertisements targeted toward them by out-of-the-country advertisers as well (Brandenburg & Dudt, 1997).

The final question this study sought to answer was, "What are the common visual cues of Belize service advertisements which might initially draw then retain the consumer's attention?" Picture use was primarily limited to things and places and included few people. Because little information has been published and made available about the Belizians and their culture, a conclusion about effectiveness of visual advertisment cues would be premature. Westerners, however, live in a visually oriented society which offers a wide variety of color and pictorial displays, including those of product and service advertisements. Therefore, compared to the daily exposure to visual stimuli for Westerners, Belizian advertisements may appear non-lustrous and dull. When an advertised service is targeted for the Western audience, the Belize advertiser may have best results with a pepped up promotion that skillfully incorporates the use of color, graphics, pictures, and fonts.

Overall, Belize advertisements for services make their strongest appeals in the utilitarian category by appealing to cost savings and by providing straight forward information about the service. However, the advertisements are generally not directly focused on the reader's needs, interests, or values, but are, instead, general announcements of what is available.

While the researchers can only speculate about congruency and appropriateness of appeals and appeal strengths in regard to Belizian consumers, more definite statements can be offered regarding Western consumers. Results indicate that Belize appeals used in service advertisements may not be as effective as they might be for a Western audience of tourists and sojourners. This audience may be substantial and represent considerable income potential for Belize businesses. During the past year (1996-1997), for example, ______ Westerner tourists or sojourners traveled to Belize. For maximum sales and return on the advertising investment, the design, selection, and use of advertising appeals must be socially and self-congruent, motivating, interesting to read, and attractive according to the perceptions of the targeted consumer audience. Belize advertisements may be falling short of this goal, at least for the Western consumer group. Ancillary investigations of United States appeals within US advertisements and targeted toward general US readers-consumers indicated stronger and more dominate appeals in all appeal categories, as compared to Belize advertisements.

As a result of this study, three suggestions are offered. First, Belize advertisers must clearly identify the different consumer audiences and develop appeals specifically designed for success with the identified group. Second, appeals seminars should be developed with the Belize Institute of Management to provide Belize advertisers the opportunity to expand their knowledge and to further develop advertising appeals which are most likely to be effective with specific consumer groups. Third, service advertisements should include more variety, such as increased use of people who are doing, achieving, and benefiting from advertised services, or otherwise experiencing happy times and creating pleasant memories. Additionally, service advertisements targeted to Western tourists and sojourners will be most effective if they show strong appeals in the value-expressive, episodic and semantic memories and reader-oriented categories (Han & Shavitt, 1994; Glenn, et al. 1977). As Glenn, et al. (1977) states, consumers are most likely to favor messages consistent with their expectatons, experiences, and needs reinforced within their own culture.

Future research should include Belizian input and should also further investigate the criteria pointing to whether Belize tends to be individualistic or collectivistic in nature and to what degree the Belize culture supports values similar to those of the Western world to which she aspires. Such information would be especially helpful for business advertisers and would also benefit international business partners in situations were knowledge of cultural similarities and differences are critical to success.

Valuable information may also be gathered if this study were later replicated or if a longitudinal study were to be launched to identify evolving trends in Belize advertising practices and effects. Caution should be taken in generalizing these findings. Possibly, one or more events during the time frame in which the present study was conducted influenced particular advertisements and the appeals they contained. Replicated or longitudinal investigations would further test the present findings.

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The Influence of the Student-Managed Investment Program on Shippensburg University

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Abstract

The experience of designing and implementing a student-managed investment program at Shippensburg University will be presented herein. Starting with the suggestion, made by a potential donor, that students manage some donated funds, seminars were held which designed and tested the program. A literature search showed that there was ample experience in similar programs at other universities. Recommendations were made concerning curriculum modification and the involvement of the wider university community. The final design, as implemented, provided for a continuous development of student skills and experience throughout their university career.

Introduction

Business programs are often criticized for a lack of practical, real-world training opportunities for students. During the summer of 1993, a discussion took place between the finance faculty at Shippensburg University and a potential donor who suggested that funds held by the Shippensburg University Foundation could provide just such a training opportunity for a select group of students of finance. This discussion, coordinated by the SU Foundation, centered on the idea that students as a regular part of the finance curriculum should manage a portion of Foundation funds.

The remainder of 1993 found the finance faculty, together with the administration of the John Grove College of Business at SU, in discussions on how to meet this challenge. It was decided that, since students would manage the funds, students should design the managerial system to do so, and that this was to be the first phase of the project. To that end, a section of Special Topics in Finance was scheduled for the Spring Semester of 1994. Admission to this class was severely restricted, since the responsibilities would be great and the class format would be unstructured, at least at first. The senior class in finance was invited to apply for admission, with the finance faculty serving as the admissions board. Eleven finance majors were selected on the basis of attributes such as dependability, leadership, special skills, and, of course, academic record.

This first class was held as a seminar, with the finance faculty voluntarily attending, even though only one would serve as the "professor of record" for the course. This "professor of record" would be rotated among the finance faculty as the class was held in successive years, but the guidance of all finance professors would be available for each class. In fact, successive classes would find it necessary to seek expertise from the wider academic community. The basic assignment given these first students was to design the academic system within which a significant dollar amount from the SU Foundation could be managed with students acting as fiduciary. This design had to include the manner in which future classes would organize themselves, come to decisions, and make presentations to various segments of Shippensburg University, including the Board of Trustees of the SU Foundation, which would hold final responsibility for oversight of the funds. No text was found appropriate, but the end product might resemble a text or manual for operations of future classes. Assignments were to be determined by the class on an as needed basis, where research or analysis was found necessary in a given area.

The First Class

There is often a temptation to begin a project in the middle, rather than at its beginning. The students in this first class were generally in their final semester of a finance curriculum in which they had been exposed to the full range of theory concerning the valuation of securities and their combination into an investment portfolio. They came to this seminar expecting to design a method of picking securities and determining how much of each to include in the portfolio. This did not occur to any appreciable extent until the next year's class was well under way. Instead, this first class had to design the process by which successive classes would begin their work. As a result, much of what was done resembled a management class, rather than a finance class.

This is Not a New Idea?

One obvious question was whether other universities had attempted such an approach, and, if so, how did they do it. An initial assignment the students gave themselves was, therefore, to research this question, identify those schools having such a program, and contact those schools to learn more about their program.

The idea of letting undergraduate students manage such assets would appear so radical that it might be thought few other schools would have done such a thing. As it turns out, there are many schools who have students manage investments in some way or other, and dollar amounts in the millions are not uncommon. Belt (1975) describes the experience at Texas Christian University, beginning in 1973, and Lawrence (1990) cites TCU's program as having a fund value of $1,100,000 in 1988. Lawrence also lists 22 operating student investment funds at universities in the United States by 1988. By 1990, Ohio State is cited by Brammer (1992) as having a $5 million program managed by students. The first lesson for the students was, therefore, that however bold and innovative an idea may seem, there are probably many people who have had experience doing something very similar.

How Did They Do It?

The next lesson required more work for the students. In this step, they assigned each the task of contacting one of the schools with such a program and attempting to learn more about it. Obviously some contacts were successful and some were not, giving an intermediate lesson in human behavior. This step did, together with the original literature search, begin to bring things into focus, a bit, though.

While the students found a great variety of approaches to student-managed funds, their research taught them that there was much more to the process than simply picking stocks for a portfolio. They became aware of the need for an organizational structure within which to work. This structure would cover those segments of the university community outside the class as well as a detailed structure within the class. Block and French (1991) provided good guidelines for their effort. The class agreed to devote a major portion of the remainder of the semester developing a complete program manual for future classes to use.

Internal Class Organization

This first class designed a basic internal structure having four specific groups, including Portfolio, Administrative, Information and Accounting, and Marketing groups. This internal class structure is diagrammed in Figure 1. Each group will perform the specific tasks listed below, in addition, each group will be assigned extra necessary tasks.

Portfolio Group (whole class) - to implement the investment strategy for the fund.

The duties for the whole class as a group are:

- To set up a portfolio in accordance with the investment objectives.
- To ensure the investment objectives and constraints are followed.
- To facilitate transactions.
- To conduct voting for selecting the securities for the portfolio.
- To conduct voting procedure for amendments.
- To disperse profits of portfolios as decided.

The duties for individuals are:

- To be responsible for the analysis of the industry and security analyses.
- To be responsible for the analysis of chosen securities.
- To be responsible for the presentation of securities.
- To be responsible for continuous monitoring of selected stocks.
- To be responsible for relevant information to bring to classes.

Administrative Group (1/3 class)

- To conduct meetings.
- To coordinate class activities and discussions.
- To maintain records of meetings and new business.
- To document decisions concluded during class.
- To maintain amendments to core structure
- To schedule guest speakers if necessary.
- To collect and organize information for annual report.

Information and Accounting Group (1/3 class)

- To maintain portfolio records.
- To prepare budgets.
- To monitor safeguards.
- To track all disbursements and payments.
- To prepare once a week progress reports.
- To perform accounting duties as necessary for the group.

Maintain Broker Relationship

Marketing Group (1/3 class)

- To give outside presentations to interested individuals.
- To keep track of other schools' portfolio management classes.
- To gather information from outside groups and sources.
- To arrange guest speakers if necessary.
- To organize donor meetings.

The External Support

One of the more exciting results of the process was the realization that the broader academic environment must undergo some change to support future classes. The original seminar was to become a regular finance elective, held every Spring, and named the Investment Management Program. This group of select students was to act as a board of trustees. As such, it was recognized that the board would graduate every year and would be replaced the following year. To avoid the new board's having to always start from scratch, with no prior experience with the process, the first class suggested that the curriculum in finance be altered to give all finance majors some exposure to the process, and to provide continuity as long-term investments were made. The select group of students in the Investment Management Program class would act as mentors and trustees for the activities of students in the earlier stages of the program.

To this end, the curriculum in finance was officially altered so that all finance majors would take a two credit hour applied course in their Junior year, followed by a one credit hour applied course their Senior year. In addition, the design called for official coordination with an extra-curricular activity, the Investment Club. The existing library skills work required of all business majors was to undergo modification for those majoring in finance so that there was more exposure to the financial information in the Ezra Lehman Library at Shippensburg University. The result was an initial design for the supporting group containing three sub-groups, including Investment club members, junior, and senior student groups. The members of these three sub-groups will also serve as mentors to freshmen and sophomores in completing the library skills workbook with an additional supplement covering information on economy, industries, and companies. Each of these three sub-groups will perform the specific tasks listed below.

Junior Group (Finance major)

Perform market, industry, and company analysis while enrolled in 2 credit hours project in FIN331, Applied Market and Company Analysis.

Senior Group (Finance major)

Perform security analysis while enrolled in 1 credit hour project in FIN332, Applied Security Analysis.

Investment Club Group (Invited members of Investment Club)

Investigate and provide necessary information and materials to the Junior and Senior Groups. Also, perform the three analyses, i.e. economic and industry, company, and security analysis.

In this way, finance majors gain experience with investment analysis throughout their undergraduate career. As freshmen, they fulfill their library training by completing a specialized program aimed more specifically at the library sources of financial information. Throughout their stay at Shippensburg University they can take part in Investment Club activities. In their junior year they must apply their broader financial training to economic, industry, and company analysis. The first semester of their senior year exposes them to both the theory and practice of security analysis. Finally, those students who show both interest and ability will be chosen to take the Investment Management Program as a course where they will act as members of the board of trustees and guide those students who are coming along behind them. This produces continuity to the program and has been one of the more exciting features, which the first class incorporated into their initial design.

The Second Class

The Spring Semester, 1994, saw the first class produce the initial design for the Investment Management Program at the John Grove College of Business at Shippensburg University. No real money was available for investing, but the class presented their recommendations to the university community on various occasions, and the response was always enthusiastic. As a result, efforts to test an implementation of the design began soon after. The faculty began discussions with library staff concerning the necessary modifications to the library skills program required of the students. The process of proposing, and gaining approval of the curriculum changes was also initiated in the late summer-early fall of 1994. Of course, discussions between the faculty and the SU Foundation continued, with the added result that both groups continued to learn from the other. A process such as this will, of course, have many undocumented rewards for all involved.

A second Special Topics in Finance offering in the Spring, 1995, Semester was scheduled to test the implementation of the design. Fourteen very talented seniors in finance were selected and given the report and other materials produced by the first class. In addition, the Shippensburg University Foundation, at the request of the Dean, John Grove College of Business, allocated $15,000 of existing liquid funds for the students to invest. While this would be the first time that real money would be controlled by students at Shippensburg University, there did not appear to be any reservations to it on the part of the administration or faculty. If anything, the students appeared to take this responsibility with more anxiety than anyone else.

The first order of business, after reviewing the prior materials, was to have this class organize itself in the manner recommended above. To the surprise of most, the voluntary splitting of the class into the three groups, administrative, information and accounting, and marketing, went smoothly with only minor adjustments negotiated by the students to produce approximately equal numbers in each group. The portfolio group was, as recommended, made up of the whole class.

The next several class meetings were devoted to outside speakers from various organizations dealing with investments. This phase concluded with a presentation by the Ezra Lehman Library staff in which a draft of the modified library skills workbook was given to the students to test for possible use in the new finance curriculum. The remainder of the semester was then devoted to a real-money test of the design produced by the previous class. While this test was most successful, the experience gained from it was valuable.

Small Group Dynamics

Fourteen highly-talented finance majors at Shippensburg University may possess impressive qualifications in financial analysis and, as individuals, will be skilled in decision-making. When asked to work together in small groups, however, they soon learned that individual initiative and a forceful personality were not always positive attributes. The initial result was, therefore, a period when their attempts to work in groups were dysfunctional, at best. Fortunately, the business program is both large enough to have the broad, fully qualified faculty of an AACSB program and small enough that these students, with some facilitating by the finance faculty, could find management faculty willing to volunteer some training sessions on small group techniques. This brought yet another unexpected benefit, and the end-of-semester analysis included the student opinion that the group work with the management faculty was probably the most valuable part of the course.

These small group techniques were thought to be so valuable that the Management Department modified the core Management course to include them. By the spring of 1998, the improvement in efficiency of the Investment Management Class was readily seen. Thus, the core business courses at Shippensburg University were improved as well.

Not-for-Profit Investing

While the Shippensburg University Foundation did not impose itself on this process in any way, the organization remained open to both students and faculty should help be needed. This, again, provided an interesting added benefit. Finance majors, both faculty and student, tend to concentrate on profit-making situations, subject to taxes and dealing with funds generated by corporate activity. The opportunity for both faculty and student to learn the various rules and techniques necessary to solicit funds, obey the rules of investing donated funds, and consider the effect that the tax-exempt status has on an investment strategy outweighed the possible lack of realism caused by neglecting tax effects. This benefit came naturally to the process as the need for contact with the Foundation arose. The students, for the most part, maintained primary contact, with faculty involvement occurring only in the rare instance when rules required official action.

Risk-Averse Students

One concern about student-managed portfolios might be that young people tend to take more risks than their elders. The process of selecting the initial securities for the portfolio brought the conclusion that such is not necessarily the case. Each student selected one or two companies to research and present recommendations on. These students had been through a required course in security analysis the previous semester. In that course, they had been assigned a theoretical portfolio to manage, and had already learned the dangers of speculative investing. This, together with the very select nature of student in the seminar, produced recommendations which tended to be more conservative than their professors might have rendered.

Another conclusion arose during this process. The curriculum revisions necessary to implement the necessary external support, while well under way, was not completed to a point where other students could be doing the necessary analysis. Thus, all supporting analysis had to be done by the fourteen students alone. This reinforced the wisdom of the design concerning the need for other students in other courses to be taking part in the overall program. Again, by the spring, 1998, class, the students were benefiting from the new courses where they had been following the companies in the portfolio for at least two semesters. Therefore, they had a good bit of the initial analysis completed prior to starting the Investment Management Program.

Design Confirmed

The beginning of 1995 found many financial "experts" voicing caution about the markets. Some were even predicting a correction. Against this background, the students had to produce a portfolio which, by virtue of its small size, could not be well diversified. Still, implementation of the basic design, after the afore-mentioned activities, proved successful. The students, using small-group techniques, selected six common stocks, one mutual fund, and two corporate bonds. As luck would have it, this portfolio sailed into the teeth of the bull market of 1995.

One lesson for future reference came from the investment in corporate bonds. The students had analyzed Chrysler Corporation and had correctly concluded that, although it was now a financially strong company, an investment in its stock might suffer as the auto industry's sales softened. They decided to invest in Chrysler bonds. They located one on the secondary market with a relatively short maturity and a respectable yield. This purchase was made just hours before Kirk Kerkorian's unexpected takeover bid! The result was that, as financial theory might predict, the stock rose and the bond fell in value. Fortunately, the continued decline in interest rates, together with the failure of the takeover allowed this to be a respectable investment anyway. The lesson is that any amount of solid analysis can be wiped out at any time by the unexpected event. When students appear concerned the day after such an event, faculty must be ready to assure them that they did nothing incorrectly.

Program Launch

The success of this second class and the approval by the university of the proposed changes in the curriculum made it possible to officially launch the Investment Management Program as a continuing part of the finance curriculum. FIN331, Applied Market and Company Analysis, was scheduled for its first offering in the Spring, 1996, to provide the Junior Group support for that semester's offering of the Investment Management Program (FIN433). FIN332, Applied Security Analysis, was scheduled for the Fall, 1996, to compliment the existing offering of FIN312, Investments, for that semester. Of course, any curriculum change faces the problem that students currently in the major must be grandfathered to the old program. The support offered by these courses would, therefore, start at less than 100% and build up as the new curriculum requirements phased in.

The needs for continuity could begin to be met. The need to continually provide an experienced pool of potential students for the Investment Management Program would only begin to be met with the Spring, 1997, offering of the course, although the Investment Club has been found to aid this process already. Further, the ability of the College of Business to include such a program in its promotions to perspective students has enhanced the attractiveness of the finance program and Shippensburg University.

The need to continually follow the now existing portfolio during periods other than the Spring Semester (when the student trustees can follow it) is met in several ways. First, a part of the investment objective has been to structure the portfolio with the understanding that no adjustments should normally need to be made until the next spring's offering of the course. Only severe and unexpected problems should create the need for action during this time. Second, the Fall semester's offering of the now required courses of FIN332, Applied Security Analysis, and FIN312, Investments, provides a structure within which any unexpected problems can be brought to the attention of the students. At present, the Summer will be covered by the Shippensburg University Foundation, and a decision to respond to a surprise development in the market will be theirs during this time.

Added Funds

The initial portfolio, starting from only $15,000, has made proper diversification very difficult. While the portfolio value has appreciated to the $20,000 range in less than a year, it is still far short of the $100,000 which the original discussions took as an appropriate level of funding for such a program. Thus, one of the next goals is that of securing additional funds for investment.

Fortunately, the potential donor who made the original suggestion initiating this program had also followed the process and had been impressed with the quality of work done by the students. During his annual tax planning, he discovered four stocks in which he had capital gains. With the help of the SU Foundation, a plan was worked out by which he could donate these stocks for management by the Investment Management Program, avoid capital gains taxes, and enjoy a tax deduction based on the current market value of the stocks. While this represented an addition to the existing portfolio of only twelve to thirteen thousand dollars, it also presented an opportunity for experience dealing with an existing investment, made by a different selection process and following a different investment objective.

The student selection process for a given Spring's offering of the Investment Management Program takes place during the preceding Fall Semester, and the students will be enrolled in major finance courses at that time. Communication with these students is, therefore, convenient and allowed news of the pending additional donation of funds to be announced in these classes. Further, preparation for the upcoming Spring Semester class could be initiated. Those students selected to begin the Investment Management Program in the Spring of 1996 had copies of the manual as updated by the 1995 class, information on the existing portfolio the 1995 class had created, and a list of the four additional stocks which would be donated in January, 1996. They were in a position to assume their responsibilities promptly at the beginning of the following semester. By February 6, 1998, the Investment Management Program's home page (http://www.ship.edu/~invest/) showed the investment had grown to $58,984.12, or about 120% since 1995.

Summary

The student-managed Investment Management Program was fully launched as an on-going program at Shippensburg University in the Spring of 1996. Starting with the suggestion, made by a potential donor to the Shippensburg University Foundation, that some donated funds should be managed by students, an initial seminar was held which produced a design for the program. The curriculum in both finance and management was modified to facilitate the process. The literature search showed that there was ample experience in similar programs at other universities, providing a good background to build on.

During the following years, the design was successfully tested. The value of paying attention to the need for continuity was confirmed. The further value of extending the involvement to other segments of the academic community, such as the SU Foundation, the library, and faculty specializing in other areas of business was brought out. The work with management faculty to develop the student's small group skills was especially valuable.

Throughout these initial phases, there is the continuous process by which students become involved in the program, from initial interest in the Investment Club as an extra-curricular activity, and the modified library training, through the applied finance courses now required of all finance majors, and the small group skills added to management, and the final selection of the few students who were to manage the portfolio. This element of continuity has proven, initially, to be basic to the success of the program.

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Tax Liability and Relief for an Innocent Spouse-Legislation: Past, Present, and Future*

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Abstract

When married couples file a joint return, both are liable for the tax due regardless of their income level. In other words, they are individually and severally liable for the tax due. However, to allow tax relief to an innocent spouse, Section 6013(e) of the Internal Revenue Code (IRS) was enacted in 1971. But to the dismay of innocent spouses, both the IRS and the Courts have historically applied the provisions of Section 6013(e) very stringently. As a result, it was difficult for the innocent spouse to seek tax relief under the provisions of this Act. Recently, the Court of Appeals in Fifth Circuit took up this issue in Reserr v. Commissioner, CA 5, No 96-60393, 5-12-97. The Fifth Circuit has jurisdiction over Mississippi, Louisiana, and Texas. The precedent set in the decision of the Fifth Circuit has now made it easier for many taxpayers to claim innocent spouse relief under Section 6013(e). In addition, a new provision, namely, Section 6015 has been enacted as part of the IRS Restructuring and Reform Act of 1998. It is still too early to say how the provisions of the act will be applied to provide relief to an innocent spouse. This paper intends to discuss the past, present, and future direction of this contentious issue.

Introduction

For married taxpayers, joint and severally liable principle applies as a price for the privilege of filing a joint return. Thus, one spouse may be subject to joint liability for the omissions from income or erroneous deductions, credits and bases of the other spouse. In some cases, one spouse intentionally has not reported income or has claimed false deductions or credits and concealed the facts from the other spouse. One example of such understatement could be business income where one spouse is more dominant than the other. The question then becomes whether the innocent spouse, who merely signed a joint return, should be held liable for errors on the return attributable to the actions of the other spouse. The answer is especially critical if the couple has divorced and the innocent spouse is the only source of collection for the unpaid tax.

Legislative History: Past

Code Sec. 6013(e) was enacted in 1971 in response to Judicial pleas for statutory language enabling relief from liability in situation where the result of joint and several liability was particularly harsh and inequitable. The original Act of 1971 allowed relief for understatement of tax from unreported income only. The rules for granting relief were amended by the Tax Reform Act of 1984 when relief was also granted for understatement of tax due to deduction, credits and bases. Under this old law it was very difficult for spouses to claim tax relief because of the AGI threshold and very restrictive requirements of the law. The AGI threshold made the relief available only if the understatement of tax was substantial. The Code and the Courts allowed the relief on the basis of a broad standard of whether the innocent spouse "knew or should have known" of the tax understatement.

Under Sec. 6013(e), an Innocent Spouse was relieved of liabilities for tax (including interest, penalties, and other amounts), if: (a) a joint return is filed; (b) a substantial understatement of tax is attributable to grossly erroneous items of the other spouse; (c) the innocent spouse didn't know and had no reason to know that there was a substantial understatement; (d) it is inequitable to hold the innocent spouse liable for the substantial understatement.

Grossly erroneous was defined as: (a) omission of gross income, or (b) erroneous deductions or credits claimed.

Substantial understatement was defined as: (a) understatement of taxes exceeding $500, and also (b) understatement of taxes exceeding the greater of (1) understated tax liability exceeding 10% of the innocent spouse's AGI, if the innocent spouse's AGI is $20,000 or less, or (2) understated tax liability exceeding 25% of the innocent spouse's AGI, if the innocent spouse's AGI is greater than $20,000.

But to the dismay of innocent spouses, both the IRS and Tax Court have historically applied the provisions of Section 6013 (e) very stringently. As a result, it was difficult for the innocent spouse to seek tax relief under the provisions of this act. To alleviate the situation, a provision (Code Sec. 6015) was enacted by the legislature in its IRS Restructuring and Reform Act of 1998. The provisions of this code are explained in the next section.

Legislative History: Present

Code Sec. 6015 was enacted by the IRS Restructuring and Reform Act of 1998. The provision in Code Sec. 6015 apply to any tax liability arising after July 22, 1998 and any tax liability arising on or before July 22, 1998 remaining unpaid as of that date.

Under Code Sec. 6015, a spouse may qualify for relief from joint and several liability if: (a) a joint return has been made for the tax year; (b) on the return there is an understatement of tax attributable to erroneous items of one of the individuals filing the joint return; (c) the innocent spouse establishes that in signing the return he or she did not know or have reason to know of the understatement; (d) under all the facts and circumstances, it would be inequitable to hold the innocent spouse liable for the deficiency in tax resulting from the understatement; and (e) the other individual properly elects this relief, using form 8857, within two years after the date the IRS has begun collection activities with respect to the individual making the election.

If a spouse qualifies, relief extends to the tax (including interest, penalties and other amounts) attributable to the understatement.

Although new Code Sec. 6015 continues many rules contained in former Code Sec. 6013(e), it contains significant provisions designed to protect married taxpayers from the tax misdeeds of their spouses.

The provisions of the new law can be divided into: (a) relief for an innocent spouse from the understatement of tax; (b) separate liability election for an innocent spouse; and (c) relief for an innocent spouse from the understatement of tax.

To obtain relief the innocent spouse must establish that in signing the return he or she did not know or have reason to know of the understatement. The new rules did not change this broad standard of whether the innocent spouse "knew or should have known" of the understatement of tax, thus the old Court Cases will still apply to the new rules.

The Courts have applied the 'knowledge' test based on: (a) whether an innocent spouse had sufficient knowledge of or had reason to know of an understatement; (b) business acumen of the innocent spouse; (c) educational level of the innocent spouse; (d) family's lavish and unusual expenditures compared to the past; (e) innocent spouse's involvement in the family's financial affairs; (f) the culpable spouse's evasiveness and deceits concerning the couple's finances; and other relevant factors.

Relief Available For All Understatements

Under the new rules it is not necessary for an understatement to be "substantial", which eliminates the $500 minimum and the minimums based on the innocent spouse's AGI. In addition, it is no longer necessary for the items of the other spouse to which an understatement is attributable to be "grossly" erroneous.

Partial Relief Available

If the spouse establishes that, in signing the return, he or she did not know, and had no reason to know, the *extent* of the understatement, innocent spouse relief is available on an apportioned basis. In such a case, the spouse is relieved of liability to the extent it is attributable to the portion of the understatement that the spouse did not know or have reason to know.

Notice To Other Joint Filer

The IRS must give a joint filer notice of, and an opportunity to participate in, any administrative proceeding with respect to the other joint filer's election of innocent spouse relief. Also, in order to make married taxpayers more aware of the legal consequences of filing a joint return, the IRS is required to notify joint filers of their joint and several liability and send any notice relating to a joint return separately to each individual on the return.

Tax Court Review

If a joint filer is denied an election for innocent spouse relief or separate liability, the taxpayer may petition the Tax Court for review. The petition must be filed (1) within 90 days following date on which the IRS mails a determination to the taxpayer or (2) six months after the election was filed, whichever is later.

Restriction of Collection Activity

The IRS may not begin or proceed with a levy or collection action for an assessment to which an election for innocent spouse relief or separate liability relates until the 90-day period for petitioning the Tax Court has expired or a Tax Court decision becomes final.

Separate Liability Election For An Innocent Spouse

Despite filing a joint return for a tax year, certain taxpayers may elect to limit their liability for any deficiency assessed with respect to the return. In general, liability is limited to the amount of deficiency arising from items that would have been allocable to the electing taxpayer if he or she had filed a separate return for the tax year.

The "actual knowledge" standard for separate liability is narrower than the "knew or should have known" broad standard for innocent spouse relief, which may make separate liability available under circumstances in which innocent spouse relief is not.

A taxpayer may elect separate liability under a joint return if: (a) at the time of the election, the taxpayer is no longer married to or is legally separated from the person with whom the taxpayer filed the joint return; or (b) the taxpayer was not living in the same household as the person with whom the taxpayer filed the joint return at any time during the 12 months preceding the election.

Taxpayers are entitled to elect separate liability up to two years after the date the IRS begins collection activities with respect to the electing taxpayer.

Knowledge of Electing Taxpayer

An election to limit liability under a joint return is invalid with respect to a deficiency (or portion of a deficiency) if the IRS demonstrates that, at the time he or she signed the return, the taxpayer making the election had "actual knowledge" of any item giving rise to the deficiency (or portion thereof). This "actual knowledge" provision does not apply if the electing taxpayer establishes that he or she signed the return under duress. The "actual knowledge" must be established by the "evidence" and shall not be inferred based on indications that the electing spouse had "reason to know".

Electing Taxpayer's Portion of Deficiency

An electing taxpayer's liability generally is limited to the portion of the deficiency that is attributable to items allocable to the taxpayer. Any item giving rise to a deficiency generally is allocated in the manner it would have been allocated if the taxpayers had filed separate returns.

Conclusion and Future of Innocent Spouse Relief Provision

It is too early to say what future holds for the provision of this contentious issue. Some professionals voiced concern that tax and divorce lawyers may have separate strategies for tax relief offered to innocent spouses under the 1998 IRS Restructuring and Reform Act (Donmoyer, 1998). Divorce lawyers who advise clients to elect separate liability at the moment of separation may raise suspicion in the IRS and increase the chance of a tax audit. Tax lawyers on the other hand, advise clients to wait until the IRS has begun collection proceedings before electing separate liability. If past can be used as predictor of future, taxpayers should be wary of this provision and be advised that they should be aware of their potential liability before they sign on the dotted line.

* Earlier Versions of the Paper were presented at the 16th Annual Meeting of the Southwest Business Symposium Edmond, Oklahoma April , 1999 and at the 1999 Annual meeting of the Association of Pennsylvania University Business and Economics Faculty.

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Marketing Main Street: An Exploratory Study of Stakeholder Perceptions

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Abstract

This article describes a market research approach used to address the challenges of marketing the struggling downtown area of a small American city. The project was designed to create a baseline "snapshot" of the situation from the perspective of a downtown's major stakeholder groups: shoppers and businesses. The approach is derived from the literature on a research technique known as "triangulation," and has yielded a large quantitative study of shopper needs as well as ongoing quantitative and qualitative studies of business needs. This approach could provide a helpful template for other communities to pursue similar projects as a first step toward tackling the problems facing their downtown business districts. The approach used in this project is applicable to small communities throughout the U.S.

Introduction/Background

This article discusses a market research study that was conducted in Johnstown, Pennsylvania, a city located in a mountainous, largely rural area of west-central Pennsylvania, approximately 70 miles east of Pittsburgh. The population of the Johnstown SMSA is 241,247, ranking it 176th among the nation's SMSAs (U.S. Census, 1990.) Historically, the Johnstown area was a major center of coal and steel production. But like many such areas, the region encountered severe economic dislocations during the massive restructuring of the U.S. coal and steel industries during the 1970s and 1980s. The result is a fragile, post-industrial economy heavily dependent on a diverse population of small businesses.

In recent years, Johnstown's central business district has faced the same problems which are occurring nationally: the flight of retail and support businesses to suburban malls and shopping strips, which offer superior access to free parking. The central business district once supported two full service department stores and a large number of specialty retail establishments. Now the district suffers from a high level of retail space vacancy; both department stores are closed, and many of the specialty merchants have either ceased operations or moved to the suburban shopping areas in an effort to survive.

Recognizing the seriousness of the situation, the State of Pennsylvania in 1994 provided funding for the creation of a Main Street Manager program for the Johnstown central business district. A coalition of local businesses was also formed, and a manager/coordinator position filled. By 1995, the group realized that one of the first steps toward recovery was the need to identify the strengths and weaknesses of the downtown vs. other shopping areas. They turned to the authors of this paper, who recommended a market research study to measure the perceptions of shoppers This paper examines the steps which were taken, and which are still underway, to create a baseline market research report for Johnstown's central business district.

Literature Review

The research in the area of downtown shopping districts is apparently still in its infancy. When the authors investigated the literature to date on the subject, no empirical study could be found. However, there is a considerable body of literature available to help guide the research design for such a study.

"Triangulation" is the key word summarizing the research approach used by the study. The term has been defined as "the combination of methodologies in the study of the same phenomenon" (Denzin, 1978) and represents the simultaneous use of qualitative and quantitative techniques. Use of the approach can be traced back to the late 1950s when Campbell and Fisk used an approach they called "multiple operationalism" (Campbell & Fisk, 1959) in their psychological research. Since that time, its use has grown and been extended into other fields including empirical social research, and research in business administration-related areas, as illustrated by Jick: triangulation "allows researchers to be more comfortable of their results" (Jick, 1979). This approach has also been recognized as a complementary way for the strengths of quantitative techniques to help offset the weaknesses of qualitative techniques, and vice-a-versa (Van Mannen, 1979).

The combination of qualitative and quantitative methods can be a particularly powerful form of triangulation (Kaplan & Duchon, 1988; Lee, 1989). For example, results from the survey will become much more meaningful when they are interpreted in light of qualitative interview data. On the other hand, qualitative data based on a statistically small number of interviews becomes more compelling when it is supported by quantitative survey data.

The research approach is also consistent with one of the seven key steps which have been outlined for constructing public communication campaigns, namely the need to "survey the sociocultural situation" including the use of "anthropology and sociology procedures such as participant observation, open-ended interviews, questionnaire surveys, and interviews with informed observers." (McGuire, 1989).

Methodology

Informed by the literature noted above, the "Shopper Needs" study was fielded in Spring, 1996. It addressed three key areas identified by the Main Street Manager Program as the most relevant information required to develop revival strategies for the downtown:

1) Shopping Motivators for area residents (i.e., which factors do they consider when making a decision about which shopping district to visit)
2) Perceptions of Downtown Johnstown vs. other shopping districts in relation to each of the shopping motivators noted above, including real and perceived barriers to considering Downtown Johnstown as a place to shop

3) Suggested improvements to Downtown Johnstown which would attract shoppers

In addition to these three major areas of information, the study also provided the Main Street Manager Program with relevant demographic and functional data.

Primary data for the study was collected from a sample population of approximately 23,500 local residents in nine zip codes surrounding the Johnstown business district.

A written questionnaire instrument was used because the authors felt that a large, quantitative sample could provide a more representative description of the desired project objectives than qualitative methods like focus groups alone.

The questionnaire was delivered to potential respondents through insertion of the instruments into home delivery copies of The Johnstown Tribune-Democrat, the only major daily newspaper serving the region. The instrument was designed to encourage response by maintaining confidentiality for respondents, employing simplicity in survey design, and providing a pre-paid response mechanism. Faxed responses were also encouraged. Although the authors realized that this would create a substantial bias in the responses, they proceeded with this delivery vehicle because of its large reach (23,500 homes), and low cost (free).

To provide a more detailed picture of the market situation, the sample was divided into two segments:

1) Current downtown shoppers
2) Current downtown non-shoppers

Consistent with the direction of triangulation literature noted earlier, these quantitative approaches were complemented by qualitative techniques, specifically, a number of one-on-one interviews with a cross-section of some of the largest employers in the downtown shopping district conducted in late 1997.

Study Results

Response

Response was strong for the study: approximately 14% of all shopper surveys mailed or delivered to prospective respondents were returned providing for a sample size of approximately 3,300. Sample sizes for the segments of the study are noted in table 1 below:

Table 1
Response to Shopper Needs Study

Current Shoppers	924
Current Non-Shoppers	2,376
Total	3,300

Based on this sample size, the authors feel somewhat confident that the findings of this study provide a reasonably accurate reflection of actual local consumer perceptions.

Because of the modest size of the Johnstown area and the limited resources of the Main Street Manager Program, one obvious constraint placed upon the study was low cost implementation. To address the research challenge while working within strict budget constraints, the following tactics were employed:

1) Questionnaire design and pre-testing among Main Street Manager officials.

2) Questionnaire printing free of charge as a public service of a local bank which has an in-house printing shop and a headquarters in the central business district.
3) Questionnaire distribution to respondents using The Johnstown Tribune-Democrat___daily home newspaper delivery and advertising invoice mailings.
4) Questionnaire return mail (via postage paid mail), underwritten as a public service by another local bank with headquarters in the central business district.
5) Questionnaire tabulation by volunteer members of the Retired Senior Volunteer Program (RSVP) at the Johnstown Senior Center, located downtown.

Specific Findings

Results of the study indicated clear choices for the Main Street Manager Program.

The results of the study were communicated to the Executive Committee of the group, and then to a town meeting of downtown shoppers and business owners in October, 1996. Results of the qualitative portion of the business study are still being tabulated and analyzed, so they will not be discussed here. Specific findings in each of the three key areas of inquiry noted above for the shopper study were as follows:

Shopping Motivators

Five factors emerged as the most important motivators for area residents in selecting a place to shop. "Value" was the response with the highest ranking for both the current shopper and non-shopper segments. Four other factors received the next highest ratings from both shoppers and non-shoppers, "Convenient Location," "Quality of Stores," "Variety of Stores," and "Easy, Convenient Parking" (see table 2 for data on the top five responses).

Table 2
Top Five Motivators For Area Residents

Factors described as "most important" by respondents	Study Segments: Current Shoppers Response (%)	Study Segments: Non-Shoppers Response (%)
1) Value	26	28
2) Location	17	10
3) Quality	13	11
4) Variety	12	15
5) Parking	7	13

Perceptions of Downtown Johnstown vs. Other Shopping Districts

Results in this area of inquiry were intended to provide decision-makers with a set of "competitive" strengths and weaknesses for the central business district based on the same motivating factors noted above.

Strengths._"Location" emerged as by far the strongest factor in the downtown's favor. The district received positive ratings in this regard from both shoppers and non-shoppers, suggesting it still has a significant potential to draw visitors.

Four other factors received the next highest ratings but there was significant disparity in the views of shoppers vs. non-shoppers. For example, current shoppers rated "Convenient Hours," "Friendly Service," "Value," and "Variety of Places to Eat" most positively while current non-shoppers rated "Friendly Service," "Unique Buildings," "Interesting Promotions & Events," and "Variety of Places to Eat" most positively (see table 3 for data on the top five responses).

The non-shopper perceptions suggest a possible opportunity to build upon the historical nature of the downtown area (many of the buildings there survived the Johnstown Flood of 1889), perhaps in conjunction with historically-themed promotion events.

Table 3
Top Five Strengths of Central Business District

Study Segments			
Current Shoppers		Non-Shoppers	
Factors rated "excellent"	% Rating	Factors rated "excellent"	% Rating
1) Location	20	1) Location	15
2) Convenient hours	11	2) Friendly service	11
3) Friendly service	11	3) Unique setting	10
4) Value	9	4) Interesting promo events	10
5) Variety of places to eat	8	5) Variety of places to eat	8

Weaknesses. "Variety" and "Parking" emerged as by far the most detrimental factors about the central business district from both shoppers and non-shoppers, suggesting that these are major weaknesses which must be addressed by decision-makers.

Very negative respondent ratings of other factors all fell below 10% of responses, indicating that the downtown has the potential to overcome other weaknesses if the "variety" and "parking" issues are addressed (see table 4 for data on the top two responses).

Table 4
Top Two Weaknesses of Central Business District

Study Segments			
Current Shoppers		Non-Shoppers	
Factors rated "terrible"	% Response	Factors rated "terrible"	% Response
1) Variety of stores	22	1) Variety of stores	17
2) Convenient parking	18	2) Convenient parking	17

Suggested Improvements to Downtown Johnstown

Results in this area of inquiry were intended to provide decision-makers with a list of priority items to pursue as part of their revitalization efforts. The study design provided for two broad areas of input: "retailers most in demand," to provide program managers with data to help attract potential new retailers; and "changes most in demand," which covered a wide range of physical attributes ranging from parking to the condition of storefronts and parks.

Retail Demand. A "Full Service Department Store" emerged as by far the most demanded retail establishment by both shoppers and non-shoppers, suggesting a significant potential to draw visitors. Practically speaking, however, large new malls in suburban areas surrounding the central business district make this prospect relatively impractical challenge, at least in the short term.

Perhaps more interesting, therefore, was shopper input on the types of smaller specialty retailers they would most like to see. Six types of retailers received the highest ratings but there was again significant disparity in the views of shoppers vs. non-shoppers.

For example, current shoppers rated "Discount Outlet," "Women's Store," "Shoe Store," "Grocery Store," and "Movie Theaters" most in demand while current non-shoppers rated "Shoe Store," "Women's Store," "Movie Theater" and "Discount Outlet," as most in demand (see table 5 for data on the top responses).

Physical Changes Demanded. "90 Minute Free Parking" emerged as by far the most demanded physical change by both shoppers and non-shoppers, suggesting that the existing metered parking policy in the central business district is a significant barrier to drawing visitors. Other parking issues also emerged as the next three of four most demanded changes by current downtown shoppers and four out of four for current non-shoppers (see table 6 for data on the top responses).

Table 5
Top Retailers in Demand

Study Segments			
Current Shoppers		Non-Shoppers	
Retailers which would "definitely attract me"	%	Retailers which would "definitely attract me"	%
1) Department store	27	1) Department store	38
2) Discount store	21	2) Shoe store	23
3) Women's store	20	3) Women's store	22
4) Shoe store	18	4) Movie theater	19
5) Movie theater	16		

Table 6
Top Physical Changes in Demand

Study Segments			
Current Shoppers		Non-Shoppers	
Changes which would "definitely attract me"	%	Changes which would "definitely attract me"	%
1) 90 minute free parking	54	1) 90 minute free parking	66
2) Lower parking meter rates	49	2) More on-street parking	49
3) More promotional events	46	3) Lower parking meter rates	48
4) More on-street parking	40	4) Lower parking garage rates	40

Research Implications

Using the approach outlined in this article, local central business district coalitions in small communities can provide their stakeholders with timely, relevant, and low cost feedback on the relative strengths and weaknesses of their downtowns. Using this input, local decision-makers can plan future marketing efforts, including public campaigns to attract new retail tenants and efforts to plan downtown promotion events.

However, the authors realize there are serious limitations to our research approach.

First, the samples for both the shopper and businesses studies are simply convenience in nature, and not randomly chosen. This weakness adds a significant and undesirable bias. For example, non-subscribers and non-advertisers in The Johnstown Tribune-Democrat newspaper were clearly left out of the sample. This could represent a significant voice that is not being represented. Second, both studies are purely descriptive in nature and do not attempt to draw any causal relationships between variables such as shopper perceptions and shopping behavior. Third both studies are cross-sectional in nature. This static approach has limitations in both the collection and analysis of data. A longitudinal approach would provide a more dynamic view of the situation.

In any event, our approach may provide a potentially helpful contribution toward future research in this field. Other researchers can build on our study by comparing the factors and relationships we found. Additional studies should contribute additional factors and provide further insights into ways the model can be improved. Accumulation of such studies should eventually lead to a more precise theoretical model which accurately describes the dynamics of downtown shopping districts.

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End-User Workstation Ergonomics

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Abstract

The workplace is changing at an accelerated pace. Management styles, new technologies, work force dynamics, health issues and environmental concerns are bringing ergonomic awareness to the forefront. Ergonomic awareness driven by the escalating rates of back injuries and repetitive strain injuries (RSI) is forcing organizations to look at how work is completed. Organizations are beginning to realize that they can suffer great losses by failing to give employees ergonomically sound environments.

This study sought to ascertain end-user ergonomic awareness in the office environment in an educational setting. This study was an exploratory and descriptive investigation of the status of end-user workstation ergonomics among university support staff personnel (administrative assistants and clerical workers) at two universities in Pennsylvania. The purpose of this study was to examine a variety of ergonomic issues associated with workstation activities completed by university support staff personnel.

Introduction

The workplace is changing at an accelerated pace. Management styles, new technologies, work force dynamics, health issues and environmental concerns are bringing ergonomic awareness to the forefront. Ergonomic awareness driven by the escalating rates of back injuries and repetitive strain injuries (RSI) is forcing organizations to look at how work is completed. Organizations are beginning to realize that they can suffer great losses by failing to give employees ergonomically sound environments (Fernberg, 1994; Leavitt, 1994; Mallory, 1989; Springer, 1994; Spring, 1993; Williams, 1991; Wood, 1995).

Purpose

This study was an exploratory and descriptive investigation of the status of end-user workstation ergonomics among university support staff personnel (administrative assistants and clerical workers) at two universities in Pennsylvania. The purpose of this study was to examine a variety of ergonomic issues associated with workstation activities completed by university support staff personnel.

To add to the body of knowledge related to workstation ergonomics, the investigators formulated the following research questions:

1. Are university support staff personnel aware of an ergonomically designed workstation and workstation environment? To address this question, research questions relating to the workstation, equipment, accessories, and the environment were asked.
2. Are university support staff personnel aware of and using measures to prevent workplace injury related to workstation activities performed? To address this question, research questions relating to work habits and organization were asked.
3. Are university support staff personnel having pain or discomfort associated with the workstation activities they are required to do on the job? To address this question, research questions related to employee comfort specifically discomfort, numbness, or pain related to body parts while at work were asked.

Review of Literature

A study that ascertains end-user ergonomic awareness in the office environment in an educational setting may be of great value. Mallory et al, (1989) state that most motion injury cases are likely to come in offices where more than twenty-eight million people work at computers. Alexander (1994) suggests that research should be conducted in the educational arena to determine if computer users are aware of hazards associated with computer use and the ergonomic designs and resources that are available. Cornell (1995) points out that poor posture often occurs when office workers are unaware or untrained in the proper adjustment of their office furniture. Neuborne (1997) reports of growing concern about adverse health effects from increased computer use.

With the number of workplace injuries/problems associated with extensive computer usage and cost of such problems rising annually, it is felt that if computer users would use ergonomically designed equipment and accessories, they could help prevent workplace injuries/problems (Chong, 1993; Goldoftas, 1991; Johnson, 1993; Lesin, 1994; Schafer, 1993).

Methodology

This study followed a descriptive research design using survey method. In deciding which survey method is best suited for a particular piece of research, Nachmias and Nachmias (1987) stated that it is necessary to evaluate which criteria are most significant to the research objective.

The design was a cross-sectional survey. Babbie (1990) stated that the cross-sectional design is the most frequently used study design; he supports the use of this type of survey when data are collected at one point in time from a sample selected to describe some larger population at that time. Such a survey can be used not only for purposes of description but also for the determination of relationships between variables at the time of study (p. 62).

The survey method is one of the most important data collection methods in the social sciences, and as such, it is used extensively to collect information on many subjects of research (Nachmias & Nachmias, 1987).

If the researcher's aim is a single-time description, then a cross-sectional survey is the most appropriate. As Babbie (1990) states, the researcher would identify the population relevant to his interests, select a sample of respondents from the population, and conduct his survey (p. 68).

This study modeled Babbie's statement. One survey instrument was employed: A forced-choice survey instrument entitled, "End-User Workstation Ergonomics." When employing survey research, one must be aware of the advantages and disadvantages of this type of research. Nachmias and Nachmias (1987), when discussing the survey method, offered its major advantages are lower costs, relatively small biasing error, greater anonymity, and accessibility. Its disadvantages are a low response rate, opportunity for probing, and the lack of control over who fills out the questionnaire (p. 248).

To reduce the disadvantages of using the survey methods with above-mentioned instruments, the "total design method" (TDM) suggested by Dillman (1978) was used as a guide. Dillman (1978) defined the TDM as, consisting of two parts. The first [part] identify each aspect of the survey process that may affect either the quality or quantity of response and to shape each of them so the best possible responses are obtained. The second [part] organize the survey efforts so that the design intentions are carried out in complete detail (p. 12).

Using the Dillman's TDM will help to reduce the problems of response quantity and quality. In other words, this is nothing more than the identification of each and every aspect of the survey process that may affect response quantity or quality and shaping them in way that may encourage good response (p. 2).

The data in this descriptive study was collected using standard mail survey procedures as described by Dillman (1978). Each of the potential participants received a coded survey packet containing the following items:

1. Cover letter describing the study to the potential participant and the procedures to be followed in completing the forms in the survey packet.
2. The survey with a section on demographics (brief questions asking for biographical and demographic information). A scantron answer sheet was also provided.
3. An interoffice self-addressed envelope. A self-addressed envelope was included for the convenience of the respondent to encourage greater participation (Dillman, 1978).

To preserve the confidentiality of all survey respondents, each packet mailed was assigned a code number to be used only for follow-up purposes. This coding insured that all survey packets would remain private.

Population

The population for the study consisted of 470 university support staff personnel (administrative assistants and clerical workers) at two public-supported state universities in the State of Pennsylvania during the 1996-97 academic year. The human resource department at each institution provided the population.

Sample and the Sampling Techniques

The entire population at both institutions (470) was surveyed. The population for this study consisted of university support staff personnel employed at two universities in Pennsylvania. The population job classifications include Clerk Typist I; Clerk Typist/Steno I; Clerk Typist II; Clerk Typist/Steno II; Clerk Typist III; Clerk Typist/Steno III; and Administrative Assistant I.

Instrumentation

In designing this descriptive study, it was decided that the most logical method for collecting the data would be by using a questionnaire. A review of literature was conducted focusing on topics such as ergonomics, office education, end-user computing, workplace technology, workstation design, office equipment and accessories and office design and layout. The review included research studies, journal articles, and textbooks. In addition, questions were listed based upon the researchers' ergonomics experiences and workplace site observations.

Using the information provided by these sources, a questionnaire was developed and created concerning workstation ergonomics. After the survey was created a jury of eleven members were asked to review the survey. This process consisted of checking and ranking those questions about workstation ergonomics they believed would be most appropriate to obtain information on end-user workstation ergonomics.

Reliability. Reliability of the survey was determined through a pilot study. Ten randomly selected university support staff personnel were asked to review the instrument for clarity of directions, concepts, and definitions. In addition, subjects were asked to complete the instrument. Follow-up phone calls and in-person interviews were performed with some pilot study participants for reactions. From the pilot study, minor changes in format and content wording were made.

Validity. Medley, Coker, and Soar (1984) suggest that content validity may be derived from three separate sources: expert consensus, theory, and research. The content validity of the survey used in this study is shown in the sources previously cited. Second, creation of the survey was based on the work of Osgood, Suci, and Tannenbaum (1971), and Dillman (1978), and through jury review. Lastly, the instrument was examined by the panel of eleven jury members to verify both construct and content validity.

Data Analysis

Statistical analyses were performed on all data collected to consider the information from multiple perspectives. The Statistical Package for the Social Sciences for Windows (SPSS+ microcomputer version, release 4.0) was used to conduct these tests. A descriptive analysis was performed on the data collected.

Results

The subjects in this study represented those university support staff personnel who completed the survey completely. Out of individuals surveyed, 262 university support staff personnel (administrative assistants and clerical workers) completed the entire survey. This translated into a 56% participation rate. Six broad categories of workstation ergonomics made up the survey. These included: demographics; workstation; equipment and accessories; environment; work habits and organization; and employee comfort. Only major responses to the category will be reported by the researchers. Thus, the number of respondents may not equal 262 and the percentages may not equal 100.

Categories: Workstation, Equipment and Accessories

The responses in these categories come from general questions relating to the workstation, equipment and accessories.

When asked their overall impression of their workstation 157 (60%) of the respondents indicated their workstation was adequate. When asked their overall impression of their workstation arrangement, 120 (46%) of the respondents indicated a convenient arrangement of their workstation while 109 (42%) indicated an inconvenient arrangement.

When asked to indicate the types of equipment used at their workstation, all respondents (100%) use the telephone, 169 (65%) use a typewriter, 259(99%) use a personal computer, 240 (92%) use a printer, and 193 (74%) use a calculator. Other office equipment like the dictator/transcriber microfilm viewer, and fax are used by only by a small number with 16 (6%), 18 (7%), and 98 (37%) respectively.

Windows 3.1 is the operating system is the operating system used by 110 (42%) of the respondents and the IBM or compatible (Windows 3.1) is the most often used computer technology 230 (88%). In addition, Windows '95 is being used by 94 (36%) of the respondents.

The monitor is an important part of the workstation and should be ergonomically arranged. One-hundred and eighty-nine (72%) of the respondents indicated the monitor is directly in front of them while they are at the keyboard, 200 (76%) indicated that the monitor is at or below eye level, 189 (72%) indicated that the monitor is an arm's length away, and 248 (95%) indicated that there is a contrast or brightness control adjustment on their monitor. Participants (171 or 65%) indicated that they can position their monitor to reduce glare and reflections, since many (170 or 65%) do not have an anti-glare filter on their monitor screen.

Most all (247 or 94%) of the respondents have and use a mouse. Participants (209 or 80%) indicated that the mouse is within a comfortable reach.

When responding to questions relating to the keyboard, participants (187 or 71%) indicated that their keyboard does not rest on an articulating arm. However, there seems ample clearance under the keyboard to allow for knee and leg movement in most participants' (214 or 82%) workstations.

One hundred and eighty (71%) of the respondents indicated that their backrest does tilt to accommodate their body movement, 161 (61%) indicated they can adjust the angle and tension of their chair, 256 (90%) can adjust the height of their chairs, 244 (93%) indicated their seats are an appropriate size, 239 (91%) indicated that their seat is well rounded. An overwhelming percentage (90% or 236) of the participants indicated their seats are upholstered, they swivel, have casters and chair adjustments. Most participants (213 or 81%) indicated that their chair is comfortable.

Nearly half (130 or 50%)of the participants use a document holder and 123 (47%) indicated that the document holder is as close to the computer screen as possible.

Category: Workstation Environment

The responses in this category come from general questions relating to the workstation environment.

One hundred and fifty-nine (61%)of the respondents have window exposure in their office. One-hundred and fifty-six (60%) indicated that there is adequate ventilation, 110 (42%) indicated that the air circulation is too low, and 219 (84%) indicated that their furniture and office equipment have noticeable dust.

One hundred and nineteen (45%) of the respondents indicated that there are noise levels in the environment that interfere with conversation or the performance of their jobs.

When asked about the noise level of their workplace, ninety-two (35%) indicated that the level of workplace noise was noisy while 136 (60%) indicated that the noise level was adequate and 31 (12%) indicated the noise level was quiet.

One hundred and seventy-two (66%) indicated that the temperature or humidity level is frequently uncomfortable and interferes with their jobs.

Participants were asked to indicate the frequency of certain types of physical sensations while working at their workstation. One hundred and forty-eight (56%) have headaches, 111 (42%) have burning sensations-eyes, 50 (19%) have burning sensations-nose, 48 (18%) have burning sensations-throat, and 16 (6%) experience nausea.

One hundred and fifty-three (58%)indicated that their overall impression of their workplace lighting was adequate. Two hundred and seven (79%) indicated that they did not have much privacy in their workplace.

Category: Work Habits and Organization

The following section of the survey asked about work habits and organization. One hundred and eighty-seven participants (64%) never use macros to eliminate keystrokes. Two hundred and nine participants (80%) vary tasks during the day so they are not at the computer for long periods. Over half (147 or 56%) of the respondents sit with their head and neck in an upright position while on the telephone and over half (150 or 57%) adjust the keyboard and chair height to keep forearms, wrists, and hands in a straight position while using the keyboard. One hundred and fifty (57%) respondents use the backrest of their chairs to provide full support to their lower back and 197 (74%) indicated that they adjust the height of their chairs to achieve proper posture. Only 51 (19%)use task lights to illuminate documents, while 134 (51%) reduce glare by decreasing the overhead lighting. A good percentage (82% or 214) of the respondents clean their monitors often and 192 (73%) adjust screen contrast and brightness to achieve maximum clarity of the characters. An overwhelming percentage (239 or 91%) of the respondents occasionally take breaks, look away from their screen, stretch, or get up and move around while they are at their workstation. One hundred and thirty-four (51%) do not occasionally rest their eyes by focusing on a fixed point in the distance and more than 96% (252) of the participants tell their eye care specialist about the kind of work they do.

Eighty-four (32%) of the respondents spend 1 - 2 hours at their workstations without changing their body position or routine, 90 (34%) spend 15 minutes to 1 hour without change, and 48 (18%) spend between 2 and 4 hours without any change.

Category: Employee Comfort

The last section of the survey asked about employee comfort. Participants were asked whether they experience numbness, or pain in certain body parts while at work or when they go home.

Participants experience these conditions often with their shoulders (73 or 28%), upper back (50 or 19%), forearm (26 or 10%), elbows (13 or 5%), hip (31 or 12%), neck (63 or 24%), eye strain (73 or 28%), dry/sore eyes (60 or 23%), wrist (42 or 16%), knees (21 or 8%) and lower body (31 or 12%).

Participants experience these conditions occasionally with their shoulders (115 or 44%), upper back (121 or 46%), forearm (92 or 35%), elbows (55 or 21%), hip

(84 or 32%), neck (115 or 44%), eye strain (139 or 53%), dry/sore eyes (105 or 40%), wrist (42 or 16%), knees (21 or 8%) and lower body (110 or 42%).

Conclusions

Based upon the findings of this study, the following conclusions were drawn:

1. Overall, university support staff personnel are aware of an ergonomically designed workstation and workstation environment.
2. Overall, university support staff personnel are aware of and using measures to prevent workplace injury related to workstation activities they do.
3. However, despite their awareness of proper workstation design, university support staff personnel are having pain or discomfort associated with the workstation activities they are required to do on the job.
4. IBM/compatible personal computers and the Windows operating system are dominant in the university support staff personnel work environment.
5. Most of the respondents do not have an articulating arm for their keyboard. This may have been a factor for certain discomforts.
6. Most of the respondents find their chair to be comfortable and easily adjustable.
7. The lack of a document holder by half of the respondents may have been a factor for certain discomforts.
8. The noticeable dust on the respondents' furniture and equipment may have been a reason for certain discomforts.
9. An uncomfortable temperature or humidity level may be an area that needs to be addressed.
10. Workplace privacy may be an area that needs to be addressed.

Implications

The information contained from this study could be used to develop ergonomic training programs for administrative/ purchasing personnel.

The information contained from this study could be used to develop ergonomic training programs for university support staff personnel specifically focusing on alleviating body discomfort while at the workstation.

Summary

The results from this study seem to indicate that university support staff personnel are aware of and for the most part properly using correct workstation ergonomics. However, on-going ergonomic training must be provided as new technology continues to enter the workplace.

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Adults' Differential Ethical Sensitivity to Equivalent Company Actions Targeting Minors Versus Adults: A Proposed Methodology And Preliminary Results

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Abstract

Business ethics concerns and research are largely focused on company actions impacting adult consumers. Ethicists are only beginning to address how business ethics principles can be modified to meet the needs of non-adult consumers. It was hypothesized that young adults would be differentially sensitive to the ethical implications of business activities when minors (adolescents, children, or youth aged 17 and under) versus adults were the targets of equivalent unethical company actions. A set of twelve short scenarios describing mildly unethical company actions were developed to test this hypothesis. Two equivalent versions of each scenario were written one where the primary target was children or youth and one where the target was adults. The scenarios were revised following review by colleagues at a conference. They were then incorporated in four forms of the Ethical Actions In Business Questionnaire (EABQ). The EABQ was administered to a total of 59 male and 39 female business students at The Richard Stockton College of New Jersey. Specific hypotheses related to the phenomenon of differential ethical sensitivity were tested. The results suggest that such sensitivity existed in this sample and that it was sufficiently powerful to raise important concerns for business decision makers.

In recent years interest in business ethics has burgeoned. A search of Amazon.com reveals almost 1,000 books under the general title of "business ethics," and most of these have been published within the last ten years. However, this interest has primarily been focused on the implied and explicit contracts between companies and adult consumers. Little attention has been paid to the possibility that the standard tenets of business ethics may need to be modified to better fit situations impacting on children and youth (C&Y).

Within the literature on business ethics, examples involving children are largely grouped together with those concerning adults. Recent casebooks, for example, typically include a few well-known examples like Beechnut's adulteration of apple juice, Joe Camel and the marketing of cigarettes to teens, and the sale of Nestle infant formula in Third World nations (Hartley, 1993, Valasquez,, 1998). A notable exception is Jennings (1996) who describes a variety of short examples directly dealing with minors. Those cases examine topics such as questionable rock music lyrics, potentially dangerous ATVs (all terrain vehicles), ads depicting Bungee jumping, and products glorifying violence (cards, novels and video games). The first consumer behavior text addressing these issues in some depth became available in 1998 (Hawkins *et al.*).

Only recently have practitioners in this area begun to explore the unique ethical issues children and youth raise for companies. The major business books on marketing to children (McNeal, 1984, 1992; Guber & Berry, 1993) do not explicitly address ethical issues. Del Vecchio (1997) was the first to include a separate chapter titled "Attain Standards and Ethics." In the first major text on the psychology of marketing to children, Acuff (1997) has included a minor emphasis on the importance of ethics when marketing to children. Marketing practitioners assume that marketing to children, like marketing to adults, reflects a range of ethical behavior from moral (girls selling Girl Scout Cookies to their friends) to immoral (promoting a damaging product such as cigarettes to teenagers).

More specialized volumes are appearing which analyze ethical issues in specific industries. For example, Lord (1994) raised a wide variety of issues in the marketing of Barbie by Mattel and Cross (1997) published a detailed analysis of trends in the toy industry in general. Molnar (1996) presented a scathing denunciation of the increasing commercialization of American schools. These efforts join the growing literature on the marketing of cigarettes to children, the impact of TV violence, and the exploitation of youth by industries operating in the Third World. Presentations concerning ethical questions related to marketing to minors are also beginning to appear at business and academic conferences (Stewart *et al.*, 1997; Paine *et al.*, 1998b).

Most discussions of business ethics and minors continue to appear in the popular press. Media decision makers and politicians know the power of any controversy involving business and children. As Senator James Jeffords (1998) pointed out, "Kids are the one subject that gets everyone's juices flowing." Companies such as RJR and Nike are discovering that the public relations stakes are often higher when their actions impact on children and youth.

In areas related to ethics, a great deal of work has been done on the unique needs of children. Religious ethicists talk of "childlikeness," the innocence, trust and openness of young children which makes them vulnerable to adult manipulation (Harrison, 1992). The rights of children is also an expanding area of domestic and international law and involves a developing sense of the inherent rights of children combined with a sensitivity as to how those rights are uniquely vulnerable. Hillary Clinton eloquently stated the fundamental legal issue in 1973 as:

> The basic rationale for depriving people of rights in a dependency relationship is that certain individuals are incapable or undeserving of the right to take care of themselves and consequently need social institutions specifically designed to safeguard their position. The relative powerlessness of children makes them uniquely vulnerable to this rationale.

Domestic US law in this area is growing rapidly (Jacobs, 1985; ABA Presidential Working Group on the Unmet Legal Needs of Children and Their Families, 1993). Internationally, the United Nations has recently taken the lead in protecting children worldwide, particularly from economic exploitation. Most important in this context is the 1989 declaration which grew out of the United Nations Convention on the Rights of the Child (http://childhouse.uio.no/ childrens_rights /dci_home.html) and the development of SA 8000, an international standard for ethical sourcing (Carter, 1997).

Unfortunately, universal support for protecting the rights of children has been difficult to achieve. The situation has changed markedly since Clinton pointed out in 1973 that "The causes of younger children have not fared well, partly because these representatives have loyalties diluted by conflicts between children's rights and their own institutional and professional goals" (p. 493).

These conflicts are reflected in the philosophical bases of some common objections to an expanded business ethics for minors. One objection, based on individualistic philosophies, is that childhood buying experiences are a form of consumer boot camp. Thus children should suffer unethical business behavior in order to learn how to become experienced consumers. While this position reflects the fact that children learn from experience, turning the purchasing experience into an avoidance object is clearly not in the best interest of business (Schiffman & Kanuk, 1997). This philosophy also takes a very passive view of the responsibility of business to act ethically.

A second objection is that parents have primary responsibility for protecting their children from unethical business behavior. No other protection is needed. For example, US ratification of the UN principles on the rights of the child has been blocked by the Religious Right on the basis that they represent undue interference with parental rights and responsibilities (Drinan, 1996). Unfortunately, the lifestyles of many parents, combined with the unsupervised access of children to the media, peers, the Internet and a host of goods and services, make this a less than viable position in today's society. Recent court decisions support the latter view (Jacobs, 1985).

A third position, which appears to be the philosophy of many business ethicists, is that the principles of business ethics are already sufficiently encompassing to include any concerns about children and youth. While possibly theoretically correct, this position ignores the fact that many companies lack the expertise to correctly apply basic business ethics principles to this segment. While business ethics principles may be generalizable, the unique developmental issues associated with the target population (Bornstein & Lamb, 1992) require major modifications in the ways in which those principles are applied to children and youth. A century of research into the physical, emotional, ethical, cognitive and social development of children has, of course, documented the many ways in which children differ significantly from adults (Bornstein & Lamb, 1992).

To further explore this area, preliminary analysis of the need for an expanded business ethics to cover consumers under age eighteen was recently prepared by a team at the Center for Business, Ethics and Kids at Richard Stockton College of NJ (Paine, et al., 1998b). That analysis suggests that due to developmental issues there is a basic need to treat the various segments of minors with a different standard of care and protection than that which is required for adults.

Developmental psychologists generally identify five main areas of human development: a) physical; b) intellectual/ cognitive; c) moral/ethical; d) emotional/ affective; and e) social/interpersonal. While conceptually distinct, all five areas continually interact as a child develops and all raise different ethical issues for business.

Piaget was the first to systematically document that as children age their behavior changes in predictable ways that he believed were essentially inviolate. More recent analyses of human development have modified Piaget's theory in ways that have profound implications for business ethicists (Bornstein & Lamb, 1992). Those modifications include the following.

Rates of development are not uniform. While children typically evolve over time in a fairly systematic way, at any one point they are working on different developmental issues. Sometimes change and reorganization occur rapidly, and sometimes this process is slow. Particularly when under stress, children are also likely to regress back to earlier stages for some period of time.

Individual differences matter. A group of children who were born in the same year actually represent a heterogeneous melange of developmental stages. The age of onset of puberty is a clear example of how varied children can be on even the physical level.

Transitional stages exist. Between one developmental stage and another there are often intermediate stages where children can appear to be behaving according to both the old and the new "rules."

Development involves different areas of functioning. Children do not develop as homogeneous, integrated units. Different areas of development accelerate, slow down, and interact in complex ways. At any given point in time a child may be ahead or behind his or her chronological age in one or more areas of development.

From a developmental perspective, a company's actions may be unethical when they impact negatively on one or more of the five developmental areas discussed earlier in one or more of the following ways: a) Developmental differences are not respected; b) Development is inappropriately accelerated; c) Development is retarded; d) Development is distorted; e) Developmental processes are manipulated.

Thus it may be assumed that children and competent adults function differently in the marketplace. *Caveat emptor*, for example, inherently implies that consumers have both the ability and the will to protect themselves in business transactions and neither assumption is necessarily valid for minors. The question remains: How extensive is the concern of the general public about this phenomenon and how does it influence purchase decision-making? Little data on this point is available, although Kelly (1996), publisher of *Business Ethics Magazine*, recently reported on a study by the Walker Group which showed that almost 90 percent of consumers indicated a preference for purchases from socially responsible companies. In addition, half of the 75 percent of heads of households nationwide who indicated they were boycotting certain products did so because of concerns about unethical business practices.

Method

A review of the literature indicated that no systematic test of the extent to which adults may be differentially sensitive to unethical actions by businesses depending on the age of target segments has been done. Such a phenomenon is plausible due to the considerations noted above. Basically, it is assumed that adults typically recognize that children and youth have:

1. A more limited capacity for decision making;
2. A more restricted range of appropriate reactions;
3. Different physical vulnerabilities;
4. Partial moral development;
5. An enhanced sensitivity to the opinions of peers combined with a relative lack of relevant experience when compared to adults in general.
6. Basic rights such as the right to privacy and the right to unimpeded emotional, cognitive, and physical development.

It seems reasonable to assume that company actions involving children and youth which adults perceive as unethical involve the disregard or manipulation of the above characteristics and rights in a manner that harm them. Such company actions may generate negative reactions which ultimately reduce the willingness of adults to buy goods and services from the companies engaged in those actions. Furthermore, the negative attitudes resulting from perceptions of unethical company actions are likely to be stronger when children and youth are the target than when adults bear the main impacts of those actions. This supposition can be tested in the form of the following four hypotheses:

> Hypothesis 1: The degree to which a business action is perceived as unethical will be greater when that action impacts on children and youth rather than only on adults.

> Hypothesis 2: Company actions perceived as unethical will have a direct negative impact on purchase intention. This impact will be greater when children or youth are the target of that action. (The assumption here is that adults are less likely to buy from companies that they view as behaving unethically, particularly if children are involved.)

> Hypothesis 3: Purchase intentions will reflect the degree to which a specific company action, the company itself, and the product or service category is perceived to be unethical. The impacts will be greater when children or youth are the target of the action.

> Hypothesis 4: Business majors perceptions of how ethical a company's actions are will be independent of their feelings about the level of ethics of business in general. (Presumably their training will have developed their ability to discriminate between the actions of specific companies and the general business environment.)

The Ethical Actions In Business Questionnaire

No procedure existed to systematically test the above hypotheses. So a new instrument, The Ethical Actions In Business Questionnaire (EABQ), was developed by the authors. The EABQ was designed to test reactions to business scenarios--typical business situations modeling "reasonable" unethical situations which might impact children of different ages in the five major areas of development. Dramatically unethical situations such as the Beechnut apple juice situation were avoided because, while they do occur, they are not representative of the typical operations of companies.

Two versions of each of twelve scenarios were developed--the first version targeted minors and the second version targeted adults. The equivalent forms of each scenario differed mainly in terms of whether minors or adults were the primary target of the described business action. While the actions of the companies were equivalent in form, they were diverse in their intended target market, reflecting the point of the study. It is only when the target market differs that very similar situations become differentially unethical.

Since twenty-four scenarios are too many to give as a set because of time constraints, they were placed into four alternative forms with each made up of six scenarios. Each form included a different set of three adult and three children scenarios (Forms A1/A2 and B1/B2). No form contained both the adult and child versions of the same situation in order to disguise the purpose of this study. One set of scenarios follows as an example.

Adult - #231 A cosmetics company has launched its new "Look Like A Star" program for women. Ten established female models, TV actresses, singers, and movie stars (all in their 30's) have licensed their names to this effort. Women send in a picture of themselves and their measurements and receive specific advice on how to use makeup, new hairstyles or wigs, and the sexy and cool clothing (including figure shaping underwear) which are unique to this promotion. This promotion is intended to enable the women to look more like "their" star. They also receive discount coupons on the cosmetics, wigs, and specific clothing associated with each star, and these are also available by mail through an 800 number.	Child - #232 A cosmetics company has launched its new "Look Like A Teen Star" program for preadolescent girls. Ten leading female models, TV actresses, rock and country singers, and movie stars (all in their teens) have licensed their names to this effort. Preteen girls are invited to send in a picture of themselves and their measurements and receive specific advice on how to use makeup, new hairstyles or wigs, and the sexy and cool clothing (including figure enhancing underwear) which are specific to this promotion. This unique promotion is intended to help the participant to look more like "their" star. They also receive discount coupons on the cosmetics, wigs, and specific clothing associated with each star, and these are also available by mail through an 800 number.

In response to continuing ethical controversies, two scenarios related to tobacco and alcohol were added. The initial set of scenarios was presented at an academic conference in order to obtain feedback on how they should be modified (Stewart, et al., 1997). The scenarios in the revised set are briefly described in Table I.

Rating Scales

Five scales were used to evaluate reactions to each scenario in the questionnaire. For each scenario, each respondent was asked to indicate the following:

1. **Age** of target--the most likely age of the consumer of the good or service in the scenario.

2. **Unethical Action Ratings**--An unbalanced eight point unethical action rating scale was developed for this study. The scale was:

0	1	2	3	4	5	6	7
Ethical	Not Sure	Somewhat Unethical		Highly Unethical		Very Highly Unethical	

This Unethical Actions Scale was used to rate the:

a. **Company Action**--The extent to which the company action described in the scenario was perceived to be ethical or unethical.

b. **Company**--The general level of company ethics assuming that the scenario described a typical action for this company.

c. **Category/Industry** --The general level of ethics in the industry or category.

3. Future Selection Intention. One basic hypothesis of the study was that companies are likely to pay a greater price when an unethical action impacts on children rather than on adults. Obviously such an assumption cannot be tested directly except in those relatively rare cases (cigarettes, TV violence, etc.) involving a dramatic company action. Under those circumstances impacts on sales or other consequences such as legal damages or the costs of regulatory scrutiny can be directly measured. However, an indirect and limited test can be done by asking respondents to indicate their willingness to select needed products in the future from a company that is perceived as unethical. In this study this was assessed for each scenario by asking participants to indicate the probability of their "selecting a needed or wanted product or service from the company" in the scenario given the assumption that:

"If this company made other products or services that you or your family had a need or want for, and the cost was acceptable, what is the probability (0 - 100%) that you would select a product or service from this company as opposed to selecting an equivalent alternative from a competitor?"

Selection probability was conceptualized as an indicator of purchase intention.

The three ethics scales and the purchase intention measure are generally consistent with the Fishbein behavioral intention model (FBI). The FBI postulates that attitudes (in this case attitudes related to business ethics) operate as an immediate antecedent of behavior (purchase intention). In addition, this model assumes that attitudinal and normative influences must be situation specific as to action, target, context, and time factors to have valid results (Chang, Burns, et al., 1996). Within the questionnaire each scenario encompasses a specific action (purchase intention), a specified context for each scenario, an identified target (child or adult), but no time frame.

The inherent limitations of purchase intention scales are well known. The basic difficulty is that many events intervene between an expressed intention and an actual behavior (Ajzen & Fishbein, 1977; Fishbein & Ajzen, 1975). The artificial nature of the experimental situation used in this study may or may not reflect how these consumers will actually operate in the marketplace. Despite these limitations, it was assumed that a scale such as the one used here would be a potentially useful indicator of the relative impacts of unethical company actions. The hypothesized link between ethics ratings and purchase probability is consonant with the requirement that attitude measures should be expected to predict only behaviors closely related to the specific attitude under consideration (Fishbein & Ajzen, 1975).

Perceptions of Business Ethics. Finally, some items were added at the end of the EABQ to determine if general attitudes toward business ethics affected the reactions of business majors to the scenarios. Participants rated:

1. The general level of business ethics of firms in the United States using the same 8 point scale.
2. How quickly the general level of business ethics of firms is changing using a 7 point balanced rapidly improving/rapidly worsening scale.
3. How often in the last year an unethical business action had a direct impact on them or on someone close to them.

The Study

The design of the questionnaire supports a relatively simple experimental design to test five main hypotheses.

Administration of the Instrument

The Ethical Actions In Business Questionnaire is basically self-administrating. It was distributed in college business studies classes and no problems were encountered with any of the four forms. The forms were administered late in 1997. Typically, students were able to complete the questionnaire in 20-25 minutes.

Subjects

The instrument was given in both upper class undergraduate and graduate marketing and management classes at The Richard Stockton College of New Jersey. A total of 59 males and 39 females participated. This relatively homogeneous group consisted of 6.2% sophomores, 73.2% seniors and 20.6% graduate students.

Statistical Analysis

To facilitate the analysis, the 0-7 scales were recoded as 1-8. Chronbach Alpha statistics were calculated on the three main unethical ratings (company action, company, category). Initially, it was decided to utilize a very conservative approach and test for differences between adult and child scenario means using a two-sample "t" test for unequal variances. Additional regression analyses were done once this technique indicated that the hypothesized patterns were occurring. Sophisticated multivariate statistical techniques were not used in the analysis since this study was mainly intended to document the phenomenon of differential sensitivity and identify which scenarios needed to be modified.

A "t" test is not the optimal statistical technique but, given the relatively limited sample size, it was selected to answer the basic questions driving this study. A more extensive future study will utilize complex multivariate ANOVA designs to allow for the investigation of interactions and for the more complete analysis of each scenario.

Preliminary regression analyses were also done to begin to define the relationships between the three ethics ratings and purchase probability. Because of the design of the EABQ, the sample was divided in half to allow for the computation of separate regression analyses for the C&Y and adult scenarios.

Results

Table I presents a summary description of each scenario, the mean perceived age of the main user in each, and the scenario means for action (Q2a: ethics rating of specific action) and purchase (Q3: probability of selecting a product or service from the company in the example). These are the most important variables in this study since they document the manipulation of the main independent variable (age of targeted user) and the effects of that manipulation on two dependent variables (ethics rating and purchase probability).

Reliability. A fundamental question is the reliability of the measurement scales. As Table II indicates, the Chronbach Alphas for the measures of company action, company, and category across all scenarios are acceptably high at between .85 and .95. The rating of the ethics of the category is the most reliable; and the ethics ratings of the company are the least reliable. When the C&Y and adult scenarios are analyzed separately, the reliability estimates are generally similar (Table II).

The significant and high correlation of this scale with the reliable ratings of action, company, and category suggests that this scale is adequately reliable. The use of only one selection intention measure did not allow for a direct estimation of scale reliability.

Age of Target. The first and most important question was whether or not the respondents appropriately identified the age of the intended target of the company actions described in each scenario. As Table I indicates, in all cases the identified "age of the main user" was different for the equivalent child and adult scenarios. Over all 12 scenarios, the average age for the adult scenarios was 21.9 years. The average age for the child scenarios was 13.0. This difference is well above the critical value ($p<.05$) of 1.04 for Tukey's Studentized Range statistic.

A conservative analysis of the data across scenarios used a two sample "t" test assuming unequal variances to test for differences on the mean age ratings for the entire set of adult and child scenarios. This is an appropriate analysis since no respondent completed both the adult and child forms of the same scenario. The "t" value of 16.76 (df = 413.4) was significant at the .0001 level (Table III). This result occurred despite the fact that for three of the scenarios (#431/2: Cool athletic shoes, #421/2: "Learning video" and #531/2: Gang Fight video game) the differences were small (Table I). A small difference is appropriate for the "learning" video since it involves marketing a child's product to mothers versus marketing it directly to children and thus the small age difference is to be expected. The other two scenarios apparently need to be rewritten to focus more on the ages of the targets.

Unethical Actions Ratings . The means for the action, company and category ratings of these scenarios were all in the moderately unethical range (between 3 and 5 on the eight-point scale). For all three scales the unethical action ratings for the adult scenarios were lower (less unethical) than those for the equivalent child and youth scenarios (Table III).

An analysis of the mean differences across the twelve scenarios indicated that the difference between the adult and minor scenarios was significant at the .05 level for all three scales (Table IV).

The three unethical rating scales are highly intercorrelated for both the adult and child scenarios (Table V i, ii). All correlations were significant. The correlations between the ratings of the action and the company involved were higher than the correlations between either with the ratings of the category.

Table I
Study Scenarios: Age, Action and Purchase Means

Developmental Area	FORM A1	FORM A2	FORM B1	FORM B2
Physical/ Mortal	122 – CH (7.5) Physically dangerous sports-related toy Action: 3.95 Purchase: 31.2%	121: AD (23.5) Physically dangerous sports-related product Action: 3.90 Purchase: 45.8%:	131: AD (24.2) High sugar and caffeine Maxi-Power herbal sports drink Action: 4.30 Purchase: 36.0%	132: CH (13.8) High sugar and caffeine Maxi-Power herbal sports drink for boys Action: 5.00 Purchase: 29.2%
Intellectual/ Cognitive	322: CH (12.2) Language learning 900 number for children and youth Action: 3.95 Purchase: 24.1%	321: AD (27.6) Language learning 900 number for Adults Action: 1.37 Purchase: 43.4%	331: AD (27.0) Chemical manufacturer providing environmental booklets to colleges Action: 2.23 Purchase: 51.8%	332: CH (12.2) Chemical manufacturer providing cartoon environmental booklets to schools Action: 3.13 Purchase: 30.7%
Moral/ Ethical	231: AD (26.7) Look Like A Star – an integrated marketing program for women Action: 1.60 Purchase: 51.8%	232: CH (13.1) Look Like A Teen Star – an integrated marketing program for girls Action: 3.35 Purchase:: 32.6%	532: CH (16.2) Gang Fight simulation game Action: 3.50 Purchase: 36.2%	531: AD (17.2) Gang Fight simulation game Action: 3.59 Purchase: 41.2%
Emotional/ Affective	521: AD (25.5) Make your own caricature web site and be put on mailing lists Action: 3.40 Purchase: 47.3%	522: CH (11.1) Make your own cartoon web site and be put on mailing lists Action: 3.55 Purchase: 34.2%	222: CH (12.3) Animated soap opera focusing on emotionally significant situations Action: 3.48 Purchase: 40.7%	221: AD (24.9) Soap opera focusing on emotionally significant situations Action: 2.70 Purchase: 45.0%
Social/ Interpersonal	432: CH (16.1) Cool athletic shoes promoted by teen peers Action: 3.50 Purchase: 46.5%	431: AD (18.6) Cool athletic shoes promoted by adult peers Action: 2.10 Purchase: 62.3%	422: CH (8.9) "Learning" video game marketing Action: 2.37 Purchase: 61.9%	421: AD (9.6) "Learning" video game marketing Action: 1.90 Purchase: 61.4%

Key – Scenario number followed by CH (children) or AD (adult) with **average age in parentheses**; **action** = rating on ethics scale where 0 = ethical and 7 = very highly unethical; **purchase** reflects % of respondents willing to buy from this company.

Table II

Chronbach Alpha Reliability Analyses Using Standardized Variables

Rating	Adult Scenarios	Children & Youth Scenarios	Combined Scenarios
Rating of Action	.872184	.857795	.871428
Rating of Company	.836411	.836788	.845194
Rating of Category	.944286	.959309	.954494

Table III

Mean Scores For Ethics and Purchase Probability Ratings By Type Of Scenario

Rating	Adult Scenarios	Children & Youth Scenarios
Rating of Action	3.81	4.81
Rating of Company	3.90	4.85
Rating of Category	3.77	4.65
Selection Probability	47.92	35.22

Table IV

Unequal Variance t tests of Unethical Actions Ratings of Adult and Child/Youth Scenarios

Rating	t	df	P
Rating of Action	-5.5887	571.8	0.0001
Rating of Company	-5.3495	572.0	0.0001
Rating of Category	-4.9917	570.7	0.0001
Selection Probability	4.5665	561.8	0.0001

Table V*i*

Pearson Correlation Coefficients – Unethical Actions Ratings, C&Y Scenarios

Rating	Action	Company	Category	Selection Probability
Action	1.00			
Company	0.92132***	1.00		
Category	0.71664***	0.74931***	1.00	
Selection Probability	-0.52108***	-0.53636***	-0.42009***	1.00

*p <.05, **p < .01, ***p < .001

Table V*ii*

Pearson Correlation Coefficients – Unethical Actions Ratings, Adult Scenarios

Rating	Action	Company	Category	Selection Probability
Action	1.00			
Company	0.89432***	1.00		
Category	0.71643***	0.77254***	1.00	
Selection Probability	-0.47704***	-0.49622***	-0.38846***	1.00

*p <.05, **p < .01, ***p < .001

Selection Probability

As Table III indicates, over the 12 scenarios the probability of selecting a "needed or wanted product from this company" drops from a mean of 47.9% (adult scenarios) to 35.2% (children scenarios). Both sets of scenarios exhibited similar large standard deviations (Adult = 34.21, Child = 31.90). The unequal variance "t" test indicates that this is a significant difference (Table IV).

If the adult scenarios are taken as the baseline, this is a proportional drop of 26.5% for the C&Y situations. To put this difference in perspective, the critical range for the Student-Newman-Keuls test was 5.46%, less than half of the obtained difference.

General Ratings

There were three measured perceptions of business ethics: 1) general level of US business ethics; 2) degree and direction of change in that level; and 3) personal direct impacts of unethical business actions (Table VI iii). The general level of ethics was seen essentially at the "Somewhat Ethical" level, but on average these consumers were "Not Sure" whether that level was improving or worsening. They did report that unethical business actions had a direct impact on them or someone close to them an average of three times in the last year.

The three general ratings were not significantly correlated with each other (Table VI i and ii). Only for the C&Y scenarios was there a correlation which approached significance and that was between Personal Impact and the other two variables.

Despite the significant correlations between the unethical ratings items, only ratings of the category (industry) were significant as a predictor of the probability of later selection of a good or service from the companies in the scenarios (Table VII). This effect is somewhat stronger for the adult scenarios than for the children's scenarios. However, when perceptions of the general level of ethics of US businesses and changes in that level were added to the model, they became the only significant predictors of selection probability for both the adult and C&Y scenarios. Again, this effect is stronger for the adult scenarios.

Table VI*i*
General Ratings Of Business Ethics – Adult Scenarios

Rating	Change In General Level	General Level	Personal Impact
Change In General Level	1.00000		
General Level	0.08994	1.00000	
Personal Impact	-0.09514	-0.19674	1.00000

Table VI*ii*
General Ratings Of Business Ethics – C&Y Scenarios

Rating	Change In General Level	General Level	Personal Impact
Change In General Level	1.00000		
General Level	0.07494	1.00000	
Personal Impact	0.23953	0.27583	1.00000

Table VII
Regression Of Adult and C&Y Scenario Unethical Actions Ratings On Selection Probability

	Adult	Scenarios	C&Y	Scenarios
	T for Ho:	P < |T|	T for Ho:	P > |T|
Action	0.851	0.3953	0.548	0.5839
Company	-0538	0.5908	-0.374	0.7086
Category	3.716	0.0002	2.943	0.0035

Discussion of Results

Obviously, the documentation of the hypothesized differential sensitivity requires both reliable measures of unethical company actions and a clearly perceived age difference between the C&Y and adult scenarios.

Reliability. The Chronbach Alpha analysis indicated that the three unethical rating scales showed a high degree of internal consistency and thus were used reliably by these participants.

The use of one purchase intention scale precluded any direct reliability analysis. While selection intention was not the primary focus of this research, it should be a key concern in future studies of the effects of differential sensitivity. In the future, a three-item purchase intention behavioral differential measure should be used to assess purchase intention (Gotlieb & Sarel, 1991; Yi, 1990). Following Yi (1990) the anchors should be "likely/unlikely"; "possible/impossible"; and "probable/ improbable." The alpha coefficients for these scales are typically around 0.9.

Age of Target. For nine of the twelve scenarios respondents clearly differentiated the adult and child scenarios in terms of the age of the intended target. One scenario was equivocal because of the way in which the item was written, and two should to be rewritten to sharpen the age differences. However, in general, the respondents clearly saw the adult and children scenarios as targeted to different age groups (Table I) with, on average, a nearly 9-year age gap. The "t" test for scenarios supports this conclusion.

Since the intended target age was the major difference between the C&Y and adult scenarios, any differences in the ethics and purchase ratings found between the two sets can be assumed to reflect this variable. In effect, it operates as an independent variable.

Ethics Ratings. The research design goal of creating scenarios which were unethical but not dramatically so appears to have been achieved. This set averages close to the "somewhat unethical" scale point. This is an important finding because any other effects found can be assumed to reflect the different reactions to the child/adult scenarios and moral outrage over particularly egregious company actions directed against inexperienced children. To these participants, these scenarios were close to the "real world" ethical situations encountered in the modern marketplace.

Hypothesis 1: The degree to which a business action is perceived as unethical will be greater when that action impacts on children and youth rather than only on adults.

These results strongly support this hypothesis. Participants clearly rated the scenarios targeting children as less ethical on average than the equivalent ones targeting adults. The Levine's unequal variance "t" test of mean differences indicated that this difference was significant for all three rating scales. The size of the effect suggests that it is highly unlikely this pattern resulted from chance alone. It is interesting that the general ratings of business ethics were actually above the mean rating of the adult scenarios and below that of the C&Y scenarios. This pattern further supports the design goal of a set of scenarios which is close to the perceived general level of ethics in the US marketplace.

Overall, this pattern supports the basic assumption that young adults such as these respondents are less forgiving of unethical company actions when those actions impact on children. The size of the effect, however, is surprisingly large. It is somewhat rare to find differences on attitude scales that are greater than one scale point, yet that is what was found. This finding suggests that companies should become much more sensitive to business ethics and children. Potentially, actions that ethically fall into a gray area with adults may still have significant negative impacts on a company when children are involved.

These findings are particularly striking given the young age of the participants in this study and the relatively moderate ratings of most of the scenarios. Despite their relatively limited purchase and consumption histories, these young adults clearly are quite differentially sensitive to a company's unethical actions. Unfortunately, the sample size is too small to determine if this sensitivity increases or decreases with the age of the respondents.

Similarly, another limitation of the study is that it was done only with business majors. An argument can be made either way as to whether other majors would be more, or less, sensitive to the ethical issues studied here. On the one hand, discussions of business ethics in each of their courses should make business majors more sensitive to ethical issues. Alternatively, the fact that they have chosen careers in business and generally hope to work for large corporations may lessen their ability to identify moderately unethical actions.

Finally, the sample size and a relatively homogeneous group did not allow for the analysis of the possible impacts of other variables. Gender, college major, birth order, and college class all need to be studied to determine their effects on differential sensitivity.

Hypothesis 2: Company actions perceived as unethical will have a direct negative impact on purchase intention. This impact will be greater when children or youth are the target of that action.

The key finding is that the probability of selecting a "needed or wanted product from this company" drops significantly from the adult to the children's scenarios. On average, despite being considered unethical, those company actions

Impacting on adults resulted in a predicted probability of purchase of 47.9%. When children were involved, that probability dropped to 35.2%. That is a proportional drop of over 25% from the adult level. If a company's sales potential with adults was ten million dollars, this decrease in purchase probability would be reflected in a sales reduction of two and one half million dollars given that other factors (cost, etc.) remained constant. This result is a clear indication that even relatively mildly unethical company actions directed at children have the potential to have major impacts on company sales to adults. While it is obvious that any prediction of future purchase behavior is inexact and that later events may change past predictions, the importance of the size and consistency of the direction of the observed effect across diverse company actions is striking and its potential to impact actual purchase behavior cannot be ignored.

The standard deviations indicate considerable variability across scenarios, over one third of the range of 100 points. However, the standard deviations for both sets of scenarios are quite similar indicating that target age had no apparent effect on the variability of purchase intention.

The overall results are somewhat surprising given that the actions of these companies were perceived as only mildly unethical. Company actions that are seen as more harmful to children are likely to have an even greater negative impact on purchase probability. The existence of this phenomenon is suggested by the differences seen between the majority of the scenarios and the ones specifically focusing on the alcohol and tobacco industries (Table I). The recent controversy over the Joe Camel campaign and the Budweiser frogs suggests that there is a general social consensus that the consumption of these products is inappropriate for children. Thus, it is not surprising that the participants were stronger in their denunciation of these scenarios than they were of those involving other products and services.

The fact that action, company, and category were correlated is not surprising. The respondents saw a connection between a company's specific actions, its general level of ethics and, more weakly, the general level of ethics of the particular industry or category. In the "real world" such linkages are common.

Hypothesis 3: Selection intentions will reflect the ratings of the specific company action, of the company itself, and of the product or service category. The impacts will be greater when children or youth are the target of the action.

These young adult consumers saw the company action, the company itself, and the category (industry) as highly intercorrelated. The strongest association was between the company action and the rating of the company, a pattern which indicates that the participants followed the questionnaire's directions and assumed that the company's general level of ethics was reflected in the scenario.

The weak link between these three items and selecting another company product is also reasonable. Since these were relatively undramatic examples of unethical company behavior, consumers would be unlikely to blindly reject all products and services from the company involved. The basic pattern in Table V i and ii appears to be that action and company are fairly highly correlated. The correlations between action and category, and between company with category, are somewhat lower.

The pattern of the correlations with the category (industry) is reasonable given that factors other than the information provided in the scenarios routinely influence consumers' perceptions of the general level of ethics within industries on a daily basis. These results suggest that the scenarios were consistent with perceptions of the categories.

The three ethics ratings also show a weaker but still significant negative correlation with the purchase probability scale. For these reversed ratings, a low negative correlation is reasonable given the assumption that many factors other than ethics enter into a purchase decision. For example, some respondents may have felt that the scenario did not provide enough information on how the company normally acts for them to immediately stop purchasing all of their products. The fact that the patterns of correlations are consistent across both adult and child scenarios indicates that these respondents differentiated between the three items and that the age (of targeted user) variable did not per se have a major impact on these relationships.

The patterns seen in the correlation and regression analyses done for all 24 scenarios begin to suggest the complexity of the impacts of unethical company actions. Unfortunately, the sample size is too small and the number of scenarios too limited to allow for a full analysis of these patterns with respect to the C&Y and adult scenarios.

Hypothesis 4: Business majors' ratings of how ethical company actions are will be independent of their feelings about the level of ethics of business in general.

Table VI iii indicates that these respondents saw business in general as unethical and on average were "not sure" if the overall level of ethics was improving or worsening. Additional research is needed to determine what impacts such perceptions are likely to have on business students' tendencies to act ethically when they enter the business community. Also unresolved is the issue of whether or not a business education increases or decreases a student's sense that American business is unethical.

As predicted, the ratings were independent of each other and of the number of unethical company actions that had a direct impact on these students. This pattern suggests that general perceptions, perceptions of change, and reactions to personal events are phenomena that should be studied separately rather than as a composite variable.

These three global items were also not effective predictors of average scores on either purchase intention or ratings of company actions. The perceptions of the level of ethics of a specific category appeared to be a more important moderator variable than these more general ratings and thus may have acted as a general "filter" when the scenario was evaluated. This phenomenon needs to be studied further to determine how feelings about a category may influence perceptions of possibly unethical actions within that category.

Finally, from a methodological point of view, these patterns suggest that participants were generally careful in their treatment of each scenario as independent of the other scenarios and they also were not generally influenced by their broader perceptions of business ethics. This pattern would add further weight to the conclusion that the hypothesized differential sensitivity effect does exist and can be documented through scenarios.

Summary, Conclusions and Implications

The basic purpose of this study was to determine if the methodology had the potential to document a hypothesized phenomenon--that equivalent unethical company actions would have differential impacts on adult perceptions and purchase intentions depending on whether the actions were directed at children or adults. The results strongly suggest that the hypothesized differential sensitivity effect was surprisingly powerful and is worthy of further investigation using the methodology developed. Unethical actions in general decrease predicted personal purchases when equivalent alternative products are available. Furthermore, this effect is consistently stronger when youth and children are involved. The reactions of students to the EABQ also suggest that a set of classroom exercises be created to sensitize them to this issue. The following is a discussion of suggested modifications to the methodology, possible instructional and training implications, and some implications of the findings for business.

Suggested Modifications to the Methodology

Given the reported experience with the methodology, the following changes should be made.

Scenarios. The scenarios need to be reviewed. While most did serve the desired purpose, those that did not show a distinct target age difference, or for which the student comments reflected a lack of clarity, should be either strengthened or dropped and replaced.

Ethics Ratings. The three basic scales seemed to appropriately and reliably measure the phenomenon of interest and should be retained.

Purchase Intention. In order to increase the reliability of this key measure, a different scaling technique should be used in the revised form. Instead of a single item, a more reliable three-item purchase intention behavioral differential measure such as Yi (1990) should be used. This would conform with the methodology suggested by Gottlieb and Sarel (1991). Alpha coefficients of around 0.9 for these scales would typically indicate a high degree of internal consistency (Yi, 1990; Stafford, 1996; Stafford & Day, 1995).

Sample. Future research should move beyond business students in order to obtain information from a larger and more representative group of young adults. A larger sample would allow more detailed analysis of each scenario as well as test whether the phenomenon of differential sensitivity can be found among consumers in general.

Statistical Analysis. A more sophisticated MANOVA model should be employed to test the hypotheses with the new data. In addition, analyses of individual scenarios are needed to begin to define the dynamics that influence differential sensitivity (age of target, industry, etc.)

Instructional And Training Implications. Ethics and children is a topic which generates considerable interest in adults and thus can easily be added to an ethics course or a business workshop. One of the design goals of the EABQ was that it be both a data collection instrument and an instructional tool. Preliminary work has indicated that the scenarios can be used in a number of different ways in the classroom or within a workshop (Paine & Kruger, 1998). Assuming that the differential sensitivity phenomenon is supported by future research, exercises are needed to introduce students and others to the implications of this effect.

Implications of the Findings for Business Ethicists. This study should make a difference in business ethicists' work because it: 1) is the first to support the previously untested assumption that mildly unethical actions impacting children and youth are seen as inherently less ethical; and 2) it begins to define how pervasive and strong that differential sensitivity may be.

Implications of the Findings for Business. These results suggest that companies must take particular care when their activities can impact negatively on children or youth. In particular, they need to become more sensitive to issues such as:

1. On occasion a company action may be perceived by present and future buyers as unethical. The question then becomes -- "How can the damage be repaired and similar actions prevented in the future?" Some preliminary answers to that question can be found in Paine et al. (1998a,b).

2 Children within any age group are heterogeneous in their vulnerabilities. Companies must take into account a variety of basic developmental issues when they evaluate whether a proposed action is ethical. It may be ethical for one 11 year old but be less so for a 12 year old neighbor.

3. Children have become an increasingly important market and businesses vary greatly in the depth of their experience in dealing with this segment. Too many simply apply their existing ethical standards to these new audiences, a strategy that is often inappropriate.

4. Unethical companies are presumably punished at two levels--past purchasers will not buy again and a negative image is created by the media and word-of-mouth. Both processes probably have stronger impacts when they involve children and youth.

5. Adults in general, and parents in particular, often feel a responsibility to "protect" children. This can intensify their reaction to a company that harms kids. The controversy over Joe Camel is a good example.

6. Gatekeeping and guilt go hand-in-hand. Living in a world of often-absent parents and latchkey children can remind adults of their personal failures when unethical companies hurt children. If this is a key segment for a company, the consequences of unethical behavior may be more severe.

7. The rapid development of children does not mean that unethical actions are forgotten as they mature--kids talk to their younger siblings and use the Net to widely broadcast their discontents to different age peers. This implies that short-term impacts may be greater than has previously been the case.

8. Children and youth have a lifetime of consumption experiences and today's children may be even more suspicious as consumers than their older bothers and sisters were at their age. Again, the implication is that the price a company pays for unethical actions may be increasing.

9. Acuff (1998) makes the perceptive point that the mere fact of a marketing "success" tends to raise suspicions that the accomplishment is really based on some unethical exploitation of children and youth. Any company with a new successful product with children and youth needs to be prepared for this accusation.

10. Finally, from a developmental perspective it can be argued that a company's actions are questionable whenever they impact negatively on the optimal physical, emotional, intellectual, ethical, or social development of minors. Basically, a developmental perspective would suggest that ethical issues can arise whenever a product impacts on children. Ideally, each company will conduct an ethics audit in advance to identify and deal with these issues prior to the release of a product or the initiation of a new campaign.

For all the above reasons it is crucial to develop a more detailed and comprehensive approach to children, business, and ethics. Simply extending or adapting standard business ethics is insufficient to meet the challenges in this increasingly specialized area.

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Taking Aim at Target Markets

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Abstract

Bates vs Arizona (433 US 350 1977) extended First Amendment protection to advertising of legal services. For more than two decades the legal profession has looked to marketing as its ally in response to a changing and more competitive environment. Law firms have hired marketing directors; interviewed prospective clients; promoted positive referrals, advertised in various media; participated in community activities and other public relations activities. This paper advocates the use of target marketing strategies to increase client base and profits, to control costs, to improve competitiveness and to maintain a high level of quality in the work product. Firms are encouraged to segment its clients by demographic and geographic characteristics, social class and lifestyle as well as types of transaction.

Without a silhouette in sight, even the best marketing efforts can go astray. Seeing the client clearly can improve your practice development and make the proportion of your time devoted to marketing more productive. Many law firms have already adopted some marketing practices, but relatively few have explored the benefits of market segmentation and targeting.

The extension of the First Amendment protection to legal advertising in Bates versus the State of Arizona (433US350 1977) is a watershed. For more than two decades, the legal profession has looked to marketing as an ally in response to a changing and more competitive environment. Law firms have hired marketing directors; entertained prospective clients; promoted positive word-of-mouth; advertised in various media; written press releases; distributed newsletters; and participated in seminars, community activities, and a variety of other public relations activities.

The formation of the National Association of Law Firm Marketing Administrators in 1984 is a clear, early indication of this trend. Many suggestions for helpful marketing practices were also made in articles directed at the legal profession, for example: development of a marketing plan strategy (Feder, 1989); hiring a marketing director (Tarlton, 1988); and designing an appropriate marketing mix (Tarasovic & Wilson, 1989). However, a

When the client is corporate, the segments may be defined in all of the above ways in relationship to the liaison from the corporation to the law firm as well as additional ways in relationship to the characteristics of the purchasing strategy and characteristics of the corporation. Characteristics of the purchasing strategy include criteria (cost, risk, availability, responsiveness, expertise, size of the firm, client service, integrity, emotional factors), and importance of the issue to the client. Characteristics of the corporation include size, line of business, buying situation (routine issue, issue with some complexity, or issue with major complexity), and type of procurement function (retained attorney, in-house counsel, or eclectic).

All of these characteristics could form the basis for segmenting a market either individually or in combination. Although it would be unproductive and unrealistic to use all or even most of these characteristics simultaneously, often other consumer marketers use more than one. Each marketer tailors the segmentation bases to his/her own situation.

For example, a general practice firm could use type of transaction and new/established client to segment the consumer market. A corporate-oriented law firm could use buying situation and type of transaction. A legal-assistance law firm could use income (depending upon state funding criteria), education, and type of transaction. These are only a few of the possible, useful permutations.

A law firm will use the resulting segmentation of the market to decide on the appropriate strategy for the year's activities. There are basically three strategies: (1) mass marketing--rejecting segmentation or preferring to market the same way with all clients; (2) concentrated marketing--choosing one segment as your target; and (3) multisegment marketing--choosing more than one segment as your targets and planning slightly different marketing activities for each choice (Lamb, Hair, & McDaniel, 1996).

The next step is to create a marketing program with all of the firm's choices about product, place, promotion, and price--what is called the marketing mix. For firms, which have selected a strategy of mass marketing, the decisions in the marketing mix will be the same for all clients. For firms, which have selected the strategy of concentration, the mix will customized to the attributes of the client. For firms, which have selected a strategy of multi-segments, a separate mix will be customized for each segment. Whichever strategy is selected, the firm must decide on the appropriate treatment of product, place, promotion, and price.

Product

The type and frequency of the client's needs must first be forecasted to plan for serving the appropriate mix and volume of transactions. How many wills? How many estates? How big will they be? How many car accidents? How many employment discrimination suits? How many real estate closings? How many divorces? How many consumer complaints? How many tax cases? How many criminal cases? How many environmental cases? How many businesses to be incorporated? How many businesses to go international? On the number and composition of the expected business will depend:

-- the number and expertise of attorneys to be associated with the firm
-- the number of support staff to be hired
-- the type and size of library holdings to be maintained
-- the size and layout of the facilities in the main office
-- the establishment of branch offices

1989 survey of law firms indicated considerably different rates of adoption for marketing practices. At that time, entertainment, seminars, newsletters, brochures, and telephone directory advertising were the best-accepted practices (Beck-Dudley & Buller, 1989).

During the 90s, marketing-savvy lawyers and law-savvy marketers have recommended: at least ten percent of one's time spent on marketing (Branch as quoted by Stark, 1996, p. 59); increased client service instead of increased advertising (Farone, 1996); personal selling and new business development (Bradstreet, 1995); rainmaking (Stark, 1996); the strategic planning process (Lowry, Howard, & Wahlers, 1995); adoption of the fundamentals of the marketing process including market segmentation and targeting instead of just advertising (Helgeson, Brown, & Birrer, 1990); niche marketing (Rawson, 1990); target marketing (France, 1996); market penetration (Horn, 1996); Bar Association press releases (Vercammen, 1995); and creation of a home-page on the World Wide Web (Davis, 1996).

Of course, these are only recommendations. The extent of general acceptance by the legal profession is unknown at the end of the 90s, since no comparable survey has yet been published. As Schimmel and Davis pointed out in 1995, many barriers exist to such acceptance--traditional practices, unrealistic expectations for marketing, lack of marketing education, and negative attitudes to marketing within the legal profession. These attitudes were generated originally from standards of professional conduct. Actually, these standards and many elements of modern marketing practice are consistent, although care must be taken to select appropriate practices.

Target marketing is one of those practices. Target marketing is part of the overall process of strategic marketing planning--specifically, the stage in the marketing plan called market segmentation and target marketing. In the market segmentation and target marketing stage, the marketer of legal services will decide on a specific strategy and its implementation. In order to increase the client base, to increase profit, to control costs, to improve competitiveness, to increase client satisfaction, to maintain a high level of quality, and/or to achieve other goal's of the firm, the marketer must aim at and guide the firm according to a specific strategy for at least a year's activities.

The greatest benefit to a law firm, which adopts the concept of marketing, will come to those who accept the idea that a client, like all other buyers, evaluates and is either satisfied or dissatisfied with everything received in an exchange (Kotler 1994). For legal services, this means that the attorney him/herself as well as the transaction and any documents produced will be part of the purchase.

First, the marketer analyzes the market structure and, if appropriate, separates out each individual subgrouping of clients within the market; these are called segments.

When the client is non-corporate, the segments may be defined in many different ways relating to the client's own characteristics--demographic, geographic, social class and lifestyle--as well as ways relating to the experience the client has with the attorney (type of transaction, new/established client, high volume/low volume billings). However it is defined, a segment represents a group of clients with at least one characteristic in common, which ties back to sharing the same product needs. The firm seeks to better satisfy the client's needs by thoroughly analyzing what groups of clients have in common to anticipate their future issues.

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-- the level of customer service
-- services available to waiting clients
-- expected billable hours
-- the type and amount of interpersonal training for support staff and attorneys
-- budget available for marketing
-- the scheduling of associates' time
-- overhead costs
-- continuing legal education

Place

All of the decisions on place stem from the analysis of the target. How many clients are there? Where are they located? What do they need from the law firm?

-- number of walk-ins
-- number and nature of referrals
-- location of main office
-- location of branch offices
-- mobility of services
-- decor and design of the law office
-- decor and design of waiting room

Promotion

All of the previously recommended strategies for promotion may be employed. Better visualizing the target of the firm's communications will increase the effectiveness of the promotion.

-- brochures
-- client entertainment
-- word-of-mouth
-- newsletters
-- advertising: telephone directories, radio, television, Internet
-- rainmaking
-- press-releases
-- community activities
-- seminars and conferences
-- networking and publication

Pricing

The pricing strategy must be established so that several goals are achieved: (1) that clients are able and willing to pay, compared to other law firms, which may be selected; (2) the firm's expected costs for the volume of business anticipated; (3) the firm's desired profit; and (4) the firm's pro bono objectives. A better understanding of the target, of the competitive environment, and of the firm's cost structure and altruism will improve the pricing decision. Contingency, fixed fee, billable hour, third-party payment are all options and can be used by the firm for different products.

Choosing a target strategy wisely and implementing it appropriately will make your client more visible and your firm more effective.

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Artificial Neural Network Based Data Mining Application for Learning, Discovering and Forecasting Human Resources Requirement in Pennsylvania Health Care Industry

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Abstract

Mining information and knowledge from very large databases is recognized as a key research area in machine learning and expert systems. In the current research, we use connectionist models for learning human resource requirements in the health care industry. Specifically, we use connectionist models to learn the human resource requirements from a set of 100 health care facilities and test the performance of the model on a holdout sample containing 75 other health care facilities. The design issues of developing connectionist models for mining human resource requirement patterns are described. Our research indicates that connectionist models, whenever carefully designed, hold a great promise for knowledge discovery and forecasting human resource requirements in the health care industry.

Introduction

Data Mining (DM), which is also referred to as knowledge discovery, is a systematic approach to finding hidden patterns, trends and relationships in data (Chen, Park, & Yu, 1996; Pass, 1997). Recently, DM has attracted tremendous attention from both researchers and practitioners because of its applicability to information management, decision support, fraud detection, marketing strategy, financial forecasting, process control and many other applications (Chen, Park, & Yu, 1996; Cheung, Ng, Fu, & Fu, 1996).

Many data mining algorithms and methodologies have been proposed (Agrawal, Ghosh, Imielinski, Iyer, & Swami, 1992; Agrawal, Imielinski, & Swami, 1993a, 1993b; Agrawal, Lin, Sawhney, & Shim, 1995; Agrawal, Mehta, Shafer, Srikant, Arning, & Bollinger, 1996; Agrawal & Srikant, 1994, 1995; Cheeseman & Stutz, 1996; Chen, Park, & Yu, 1996; Chen, Han, & Yu, 1996; Cheung et al., 1996). Different researchers classified the data mining algorithms based on the kinds of databases to work on, the kind of knowledge to be mined, and the kind of techniques to be utilized (Chen, et al, 1996;

Cheung et al., 1996). Recently, Pass (1997) classified approaches to data mining into two categories: Methodologies and Technologies. According to Pass, the methodologies to data mining consist of cluster analysis, linkage analysis, visualization, and categorization analysis. The technologies were connectionist models/neural networks, decision trees, genetic algorithms, fuzzy logic, statistical approaches and time series approaches.

The soaring cost of healthcare and the proposed national healthcare system has been a topic of debate for several years (Bistritz, 1997). Among the reasons of soaring cost was the third party payment system (insurance companies, Medicaid and Medicare) that allowed hospitals to pass through the costs of services to the third parties (Morey & Dittman, 1996). In order to curb the skyrocketing cost of the health care, a prospective payment system (PPS) and managed care system was proposed. The PPS system required that hospitals have fixed reimbursement rates for each of their services by diagnosis related groups (DRGs) (McCarthy, 1988). Managed care was an attempt to reform Medicare through the budget process. Managed care plans gained popularity in corporate America and it is estimated that 70% of Americans with employer-based health insurance are in managed care plans. Managed care sparked multi-billion dollar consolidations in the industry as major players (pharmaceutical companies, insurance companies, etc.) merged.

The health care industry has few major payers who strive to set reimbursement levels for physicians and various services. The new business model in U.S. health care is "population based health care". The population based health care model is an integrated system of physicians and hospitals that provide care for defined populations. A population based health care model makes health care providers more accountable to its population and takes financial risks associated with the caring for its patients. Among the major factors that add up the costs in a health care facility are ineffective or lower utilization of physical resources (beds, ambulatory services, and medical equipment) and poor human resources management (Pendharkar & Rodger, 1998). While most of the health care facilities have cut down on physical resources, human resource management still remains an issue.

In the current research, we use connectionist models (also called neural networks) to discover and learn the human resource requirement patterns among the health care facilities in the state of Pennsylvania. We use publicly available data for health care facilities in Pennsylvania and explore for a human resource requirement pattern based on a set of predictor variables. The rest of the paper is organized as follows: First, we provide a brief review of the literature on data mining and cost and quality management in health care. We then describe our problem and the design issues in developing the connectionist model for our research. In sections after the design issues, we report the results of our experiments. In the end, we provide the managerial significance and directions for the future work.

Review of Literature on Data Mining, and Cost Management in Health Care

Data mining is a very broad area that involves discovering different patterns in historical databases. In general, data mining involves identifying the patterns that are not otherwise easily obtained using traditional descriptive statistical techniques such as mean, median, mode and standard deviation. Most of the research done in data mining relates to learning rules and patterns in very large customer databases (Cheung et al., 1996) and knowledge acquisition for various knowledge base systems (Bhattacharyya & Pendharkar, 1997). In the current literature review, we review the literature on data mining in both of these areas.

Research done in learning rules and patterns in very large databases focused on learning association rules in transactional databases, clustering the abstract objects and finding similarity of different sequences in a database. The majority of research done in mining and learning association rules (Agrawal, Faloutsos, & Swami, 1993; Agrawal & Srikant, 1994; Chen, Han, & Yu, 1996; Han & Fu, 1995; Mannila, Toivonen, & Verkamo, 1994; Park, Chen, & Yu, 1995; Savasere, Omiecinski, & Navathe, 1995; Srikant & Agrawal, 1995) focused on learning association rules of the form:

$$P_1 \wedge P_2 \dots \wedge P_n \Rightarrow Q_1 \wedge Q_2 \dots \wedge Q_m$$

Where P_i, and Q_j for $i \in [1,..n]$, $j \in [1,..,m]$ are a set of attribute-values from the data sets. In general, the mining of association rules problem can be represented in the following form:

Let $I = \{i_1, i_2, \dots, i_n\}$ represent the set of items in a database D. Further, let T represent a transaction that includes a set of items. We can write $T \subseteq I$. If X represents a set of items, then we can say that T *contains* X, if and only if $X \subseteq T$. The association rule is an implication of the form $X \Rightarrow Y$. Where $X \subseteq I$, $Y \subset I$, & $X \cap Y = \phi$. The confidence factor CF of the association rule in database D obtained by finding out the percentage of transactions in database D that contain X also contain Y. The evidence E for the association rule in database D is the percentage of transactions in database D that contain $X \cup Y$. If η_{minCF} is the minimum confidence threshold and, η_{minE} is the minimum evidence threshold then the problem of mining association rules is to find all the association rules whose confidence and evidence is greater than the respective thresholds.

Many algorithms were proposed in mining association rules. Among the popular algorithms are Apriori (Agrawal & Srikant, 1994), DHP (Mookerjee & Dos Santos, 1993), PARTITION (Savasere et al, 1995) and DMA (Cheung et al., 1996). Apriori algorithm is one of the most popular algorithms for mining association rules in a centralized database. In Apriori algorithm, an entire database is scanned once and large item sets are identified. The item sets are then arranged in the ascending order of their sizes. Let C_1 be the set of one item large itemsets L_1 generated by the first scan. A set C_2 of two item sets is created using L_1 * L_1 where * is an operation for concatenation given by:

$L_k * L_k = \{X \cup Y \mid X, Y \in L_k, \mid X \cap Y \mid = k-1\}$ where k is the scan iteration.

$$C_2 = \binom{|L_1|}{2}$$

Agrawal and Srikant (1994) describe the Apriori algorithm with an easy to follow example. DHP and PARTITION are extensions to Apriori algorithm so that it is computationally efficient. In DHP algorithms, hash tables are used to prune candidates during various scan iterations (Cheung et al, 1996). The PARTITION algorithm divides a database into partitions such that each of the partitions can be processed effectively (Savasere et al, 1995). While Apriori, DHP and PARTITION algorithms were designed for centralized databases, real life transactional data is often contained in distributed databases. Cheung et al. (1996) proposed the Distributed Mining of Association Rules (DMA) algorithm for mining association rules in a distributed database environment. DMA extends the original Apriori algorithm in a distributed database environment where a small number of candidate sets are obtained, and messages are exchanged between various sites in the distributed database for mining association rules.

Other research focused on learning rules and patterns in very large databases focused on using cluster analysis and pattern based similarity search approaches. Cluster analysis is grouping abstract objects into groups of similar objects. In a large database context, cluster analysis provides an approach to divide a large database into smaller similar components. Cluster analysis is studied in statistics (Cheeseman & Stutz, 1996; Jain & Dubes, 1988) machine learning (Fisher, 1936; Fisher & McKusick, 1989) and data mining literature (Ester, Kriegel, & Xu, 1995; Ng & Han, 1994; Weiss & Kapouleas, 1989). In statistics, Bayesian classification approaches were used for clustering (Cheeseman & Stutz, 1996). Various *unsupervised* learning approaches were used for clustering in machine learning. The machine learning approaches differed from statistical approaches where distance based measured (used in statistical approaches) were replaced by measures that checked for similarity between the objects (Chen, Park, & Yu, 1996). Other approaches used conceptual clustering based on probability analysis. The probability analysis approaches, however, make the assumption that probability distributions of the attributes are independent of each other (Fisher, 1987; Fisher, 1995). The assumption is challenged by few researchers who believe that correlation between the attributes often exist (Chen, Han, & Yu, 1996).

Pattern based similarity approaches were used for matching sequences in temporal databases (Agrawal et al., 1993; Agrawal et al., 1995; Faloutsos & Lin, 1995; Faloutsos, Ranganathan, & Manolopoulos, 1994; Li, Yu, & Castelli, 1996; Mannila et al, 1994). There are two types of similarity search queries for various data mining operations. The first one is called *object similarity query* where a user searches for the collection of objects that are within the user defined distance from the queried object. The second type of query is called all-pair similarity query where the objective is to find all the pairs of elements that are separated by user specified distance (Chen, Park, & Yu, 1996; Chen, Han, & Yu, 1996). The similarity measures that are used fall into two mail categories: Euclidean distance similarity measures (Agrawal et al., 1993a, 1993b; Faloutsos et al., 1995; Faloutsos et al., 1994) and correlation based similarity measures (Li et al., 1996).

The research done in data mining of large databases focused mainly on developing algorithms and improving the performance of existing algorithms. The focus was mainly on mining association rules, aggregating data in clusters and searching for relevant concepts in large databases using similarity search techniques. A stream of researchers used statistical methods, case based reasoning and machine learning concepts for mining decision rules for knowledge acquisition. Unlike, the data mining research in large databases, the researchers used a relatively smaller set of databases containing expert decisions. The problem that was addressed in the majority of the research was that of mining and developing models for classification/ discrimination and forecasting.

The statistical techniques used for classification problems included Fisher's (1936) linear discriminant analysis, quadratic and logistic discriminant analysis. Each of the techniques differed with respect to assumptions on group distributions and functional form of the discriminant. In linear discriminant analysis, the model was expressed in terms of vector of weights **w** together with scalars c1 and c2 such that given a observation defined by a vector **x** of attribute values, it was classified into group 1 if $\mathbf{w'x} \leq c1$ and into group 2 if $\mathbf{w'x} > c2$ (c1 and c2 are generally considered equal). Linear models, given the ease of result of interpretation and reliability, were generally preferred for decision making (Hand, 1981); non-linear models, though more accurate on the training data, tended to show sharp declines in performance on unseen test samples (Altman, Eisenbeis, & Sinkey, 1981). The major drawback with the statistical method was the fact that real-world data often did not satisfy the parametric distribution assumption that the statistical models made. Non-parametric methods relaxed the parametric assumption and were less restrictive. Amongst the popular non-parametric methods were the k-nearest neighbor and linear programming methods (Freed & Glover, 1981; Hand, 1981).

Machine learning techniques used for discrimination fall into two categories: the connectionist models employing some form of neural network learning algorithm, and the inductive learning models where the discriminant is expressed in symbolic form using rules, decision trees, etc. The Backpropagation neural network (Rumelhart, Hinton, & Williams, 1986) was most commonly used for connectionist schemes. Various induction algorithms have been suggested for classification, popular amongst them were CART (Breiman, Friedman, Olshen, & Stone, 1984), ID3 (Quinlan, 1986), and CN2 (Clark & Niblett). A third set of techniques that received less attention for classification problems were based on the evolutionary computing paradigm, and included genetic algorithms and genetic programming (Bhattacharyya & Pendharkar, 1997; Koehler, 1991).

This variety of approaches available made the selection of a particular technique that "best" matches a given problem a difficult task. The literature reports a number of studies comparing the performance of machine learning versus statistical approaches (Atlas, Cole, Connor, El-Sharkawi, Marks, Muthusamy & Barnard, 1990; Chung & Silver, 1992; Fisher & McKusick, 1989; Hansen, McDonald, & Stice, 1992; Shavlik, Mooney, & Towell, 1991; Wolpert & Macready, 1995). The StatLog project (King, Henry, Feng, & Sutherland, 1994) undertook a comparative evaluation of a large number of techniques on an assortment of real-world data. Reviewing a number of comparative studies on symbolic and neural network methods, Quinlan (1993) emphasized that no single method uniformly demonstrates superior performance.

A study called "No Free Lunch" (NFL) theorems on search (Wolpert & Macready, 1995), pointed out that "positive performance in some learning situations must be balanced by negative performance in others" (Schaffer, 1994), i.e., search algorithms perform the same when performance is considered averaged over a sufficiently large group of problems. Radcliffe and Surry (1995), focused on the representations of the search space, and elaborate on the role of domain knowledge in the problem representation and search operators used. The NFL results emphasized that conclusions regarding a technique's performance can be made only with respect to the specific problem type being examined. Use of different techniques needs to be guided by an understanding of their respective strengths and limitations. Bhattacharyya and Pendharkar (1997) performed several experiments on simulated data to compare the performance of statistical discriminant analysis, genetic algorithms, C 4.5, genetic programming and neural networks for classification. Their results indicate that the performance of the technique depends on the input data distribution characteristics including the group variance heterogeneity, distribution kurtosis and normality.

Recently, a few researchers have attempted to investigate the semantics of misclassification. Mannino and Kaushik (Mannino & Kushik, 1996) have looked into the *inverse classification* problem to identify cost minimization changes to different independent variables so that a case can be classified into a different preferred class. Park (1997) has incorporated Type I and Type II error cost estimates in a binary tree and a linear discriminant analysis classification approaches to find total cost minimizing classification system. Murphy and Benaroch (1997) used classification cost for selecting attributes in a rule based induction system. Mookerjee and Dos Santos (1993) and Nunez (1991) used cost minimization and value maximization approaches for inductive expert systems. Pendharkar and Kumar (1998) used data envelopment analysis for estimating marginal costs of predictor attributes in certain case based expert systems for classification. Cost estimates were also used for redesigning case retrieval in certain Case Based Systems (Mookerjee & Mannino, 1997). Commercial systems, such as DecileMax® (Bhattacharyya, Ratner, & Omac, 1995), are available that incorporate cost based estimates in a linear genetic algorithm based classifier. The cost minimizing classification problem is different from minimizing the number of misclassifications. The cost-minimizing problem facilitates the incorporation of changing organizational costs into a classifier that minimizes the misclassification cost. Few researches have argued that minimizing misclassification rate doesn't appear to be a good criterion for multistep induction systems (Brieman et al., 1984; Murphy & Benaroch, 1997).

One of the major sources of public concern in health care is cost containment (Fuchs, 1996; Luft, 1985). The central feature of health care policy debate since late 70's has been on proposals for pro-competition and market oriented reforms (Maxwell, 1997). Often viewed as "free market perspective", the focus of pro-competition proposals has been to restructure the role of government to enforce competitive incentives (Anderson, Heyssel, & Dickler, 1993; Arnould, Rich, & White, 1993; Brennan & Berwick, 1996; Enthoven, 1981; Luft, 1985).

There were two significant pro-competition strategies that emerged in the 1980's. The first was California's pro-competition effort aimed at enhancing competition by establishing selective contracting legislation to foster hospital competition on price (Maxwell, 1997). According to the California's pro-competition effort, developed in 1982, hospitals would lower the prices in order to attract the large volume of patients that governmental programs and managed care organizations would direct to selected institutions. In contrast to the California's pro-competition policy, state government of Pennsylvania provided the funding and resources to establish an independent state agency charged with gathering and distributing information on hospital costs and quality measures. Pennsylvania's strategy was to stimulate hospital competition by strengthening the position of buyers through public disclosure of cost and quality of health care (Bentley, 1993).

California fee-for-service health insurance plans were initially permitted to contract selectively with health care providers in 1982. Since 1982, California health care industry have become increasingly price competitive and many investigators have demonstrated a positive relationship between pro-competition strategies and cost control (Mann, Melnick, Bemezai, & Zwanziger, 1995; Melnick, Zwanziger, Bamezai, & Pattison, 1992; Melnick & Zwanziger, 1988; Robinson & Luft, 1988; Zwanziger, Melnick & Eyre, 1994a, 1994b). Melnick and Zwanziger (1988) concluded that selective contracting legislation in California had dramatic effects on the nature and intensity of price based competition in health care industry . The cost based competition made hospitals focus on efficiency, which led to slow escalation in health care costs (Zwanziger, Melnick, & Mann, 1990). In one study, Zwanziger et al. (1994a) investigated the impact of competition and Medicare Prospective Payment System (PPS) on resource use and costs for California hospital revenue centers over a seven year period between 1982-1988. The results of the study indicated that hospitals under competitive pressure increased total expenses between 1982 and 1988 by 17 percent less than hospitals in less competitive markets. Hospitals facing pressure from Medicare PPS also appeared to have responded by cutting costs when compared to other hospitals. Zwanziger and Melnick (1996), in another study, note that the central message of managed care plan has succeeded in its primary mission: to reduce the growth rate of the health care cost.

The state of Pennsylvania, under the act 89 of 1986, was the first state to collect and publish information on both cost and quality. The purpose of this legislation was, "...to facilitate the continuing provision of quality, cost-effective health services throughout the Commonwealth by providing data and information to purchasers and consumers of health care on both cost and quality of health care services...."
Immediately after the act 89, Pennsylvania Health Care Cost Containment Council (PHCCCC) was created. PHCCCC consists of representatives from government, labor, business, insurers and providers, and other members who are responsible for paying for health care services. The council produced groundbreaking reports such as, hospital effectiveness reports, which disclosed morbidity and mortality rates and average charges for DRGs (McGee, Sessa, & Sirio, 1996). PHCCCC's primary responsibility is to collect, and disseminate impartial health care data through a public source so that the data is available to all potential users of the health care services. According to Turnbull and Hembree (1996) "Pennsylvania is the world leader in publishing and reporting data on the quality and price of care."

Brennan and Berwick (1996) favor the public disclosure of the health care information and note that it is intended to offset the inflationary implications of the monopoly of information that health care providers maintained in the past . The health and legal professionals, however, hold common fears that publicly available performance information would serve as a resource to plaintiffs' attorneys (Maxwell, 1997). The use of performance information against the health care organizations and practitioners may make them less inclined to collect the data. However, with increase in the cost of the health care, health care providers are feeling the pressure to provide public access to provider performance information.

Data Mining for Discovering Human Resource Requirement Patterns

Human resource management represents significant expense to the organization (Minneman, 1996). Among the responsibilities of human resource department are to find the solutions to the problems of workforce utilization, organizational development, performance measurement, and adaptation to evolving business demands (Minneman, 1996). The inappropriate management of human resources for a health care facility involves the risk of delays and inability to deliver quality care (Pendharkar & Rodger, 1998). The delays and poor quality assurance translates into a weakened position of the company both in terms of cost and quality care.

Among the factors that determine the human resource requirements in health care industry are: -- the number of patients, available physical resources and capacity, type of hospital, and type of services offered by the hospital (Pendharkar & Rodger, 1998). Since recruitment schedule and budget decisions are based on the managerial estimates, we focus on the impact of the different factors on the human resource estimation. In reality, the human resource estimation depends on several complex variables (including the ones identified above) whose relationships are often not very clear. Given the lack of information on the interrelationships of the various variables, it becomes difficult to establish any specific parametric form of human resource requirement dynamics. Based on the review of data mining literature, we believe that a connectionist model can be used to discover the nonparametric and nonlinear relationships among the various predictor variables.

Based on neuronal computations in the brain, connectionist models/neural networks have been applied to numerous nonparametric nonlinear statistical relationships (Jain & Dubes, 1988; Shavlik et al., 1991). In a connectionist model a neuron is an elemental processing unit, and forms part of a larger network, the architecture for which is specified to fit the problem under consideration. Neurons (or nodes in the net) are interconnected through a set of weighted, directed arcs. The net configuration, together with the set of arc-weights, defines the connectionist model for a multivariate-forecasting problem. A learning algorithm specifies a procedure for updating the arc-weights. A variety of connectionist paradigms exist, and differ in manner of node interconnections and learning procedure used.

It is useful to differentiate network architectures by the structural representation they have in forecasting equation (Lippmann, 1987). A single-layer network, using the perceptron convergence procedure (Rosenblatt, 1962) represents a linear forecasting model. A modification of the perceptron convergence procedure can be used to minimize the mean-square error between the actual and desired outputs in a two-layer network (Duda & Hart, 1973), and this yields a non-linear multivariate-forecasting model.

The back-propagation learning algorithm (Rumelhart et al., 1986), most commonly used to train multi-layer networks, implements a gradient search to minimize the squared error between realized and desired outputs.

Figure 1 shows a typical three-layer network that can be used for multivariate forecasting. The number of input layer nodes corresponds to the number of independent variables describing the data. The number of nodes in the hidden layer determines the complexity of the forecasting model and needs to be empirically determined to best suit the data being considered. While larger networks tend to overfit the data, too few hidden layer nodes can hamper learning of an adequate separating region. Though having more than one hidden layer provides no advantage in terms of nature of forecasting accuracy it can, in certain cases, provide for faster learning (Rumelhart et al, 1986).

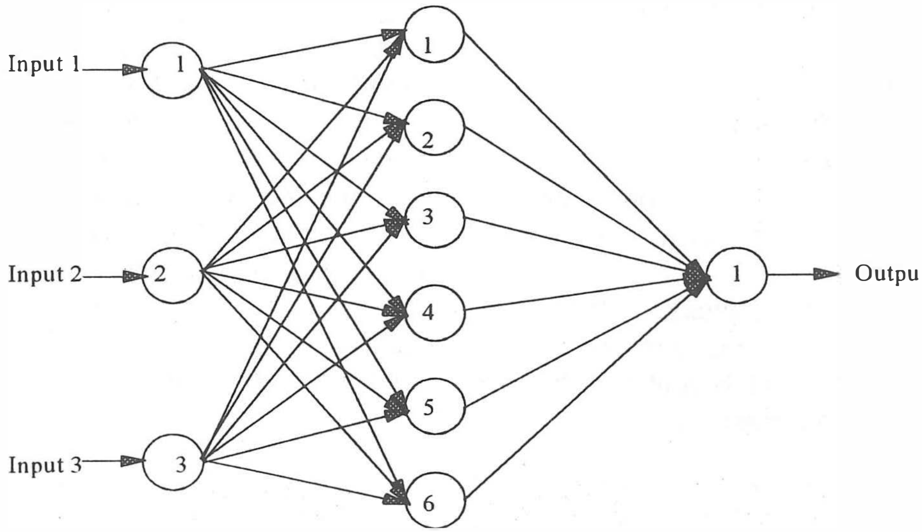

Figure 1: A Three Layer Network Used For Forecasting

For any neuron n_k, its output is determined by

$$o_k = f(\sum_i w_{ik} o_k + \theta_k)$$

where w_{ik} is the weight on the arc connecting neuron n_k with the neuron n_i from the previous layer, $f(.)$ represents an activation function, usually the logistic function

$$f(x) = \frac{1}{1+e^{-x}},$$

and θ_k is a bias associated with each neuron effecting a translation of the logistic function to allow for a better fit to the data. The network is initialized with small random values for the weights, and the back-propagation learning procedure is used to update the weights as the data is iteratively presented to the input-layer neurons. At each iteration, the weights are updated by backpropagating the classification error, e, as follows:

$$\Delta_t w_{ik} = \eta \delta_k o_i + \alpha \Delta_{t-1} w_{ik}$$

where

$$\Delta_t w_{ik} = \eta \delta_k o_i + \alpha \Delta_{t-1} w_{ik}$$

Here, η is the learning rate and α is the momentum term. The number of hidden layer neurons is chosen as twice the number of data inputs, a commonly used heuristic in the literature (Patuwo, Hu, & Hung, 1993).

Data Set

Data on various hospitals was obtained from the Hospital Association of Pennsylvania, the Pennsylvania Health Department and the Pennsylvania Medical Society. The data set consisted of information on 275 hospitals across the state of Pennsylvania. For each of the hospitals, the following information was collected:

1. Hospital Name
2. Ownership
3. Total Beds
4. Employees (full time equivalents)
5. Emergency services visits

6. Top Diagnostic Related Group
7. Admissions
8. Outpatient visits
9. Average daily census
10. Other information (surgical combination, nursing home and long term care, special services).

Not all the 275 hospitals contained complete information. For our analysis, we found that about 188 hospitals contained the complete data. A preliminary analysis was undertaken on the collected data. First, we plotted the percentage of hospitals that provide the top 5 DRG related services. Figure 2 illustrates the bar chart of the analysis. Note that many hospitals provide more than one DRG related services. Thus, the percentages don't add to 100%. We further plotted the ratio of admissions per employee and the beds available per employee. Figures 3 and 4 show the results of plots for 188 hospitals.

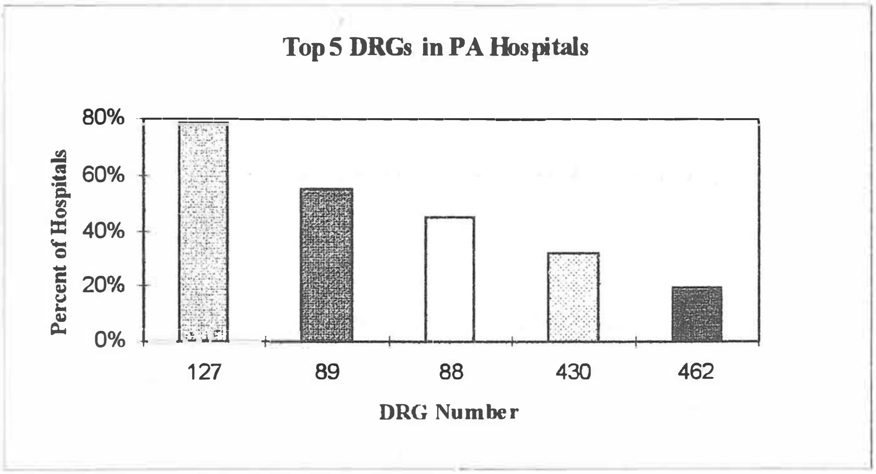

Figure 2: Percentage of Hospitals offering top 5 DRG related services.

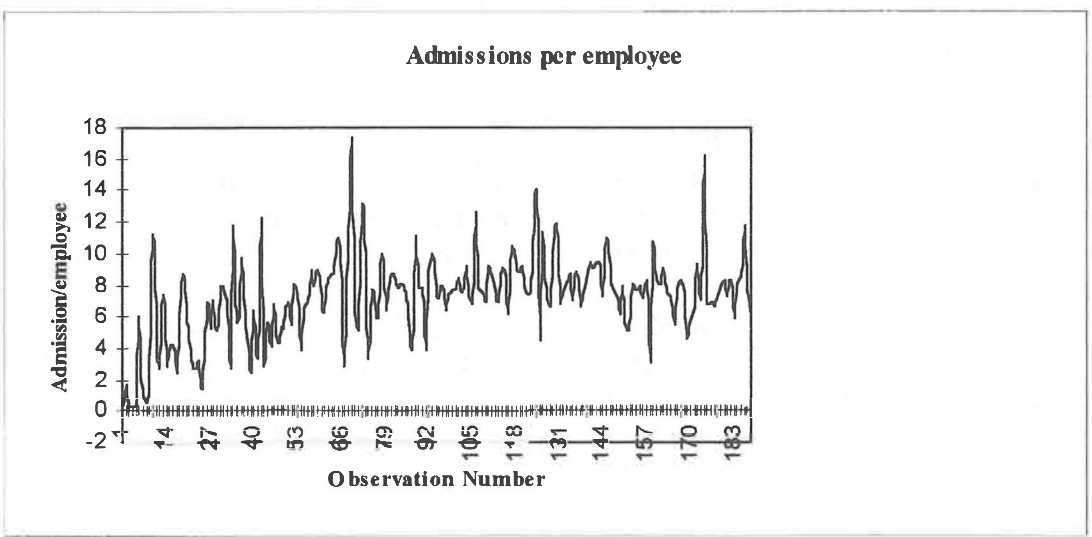

Figure 3: The Number of Admissions per employee

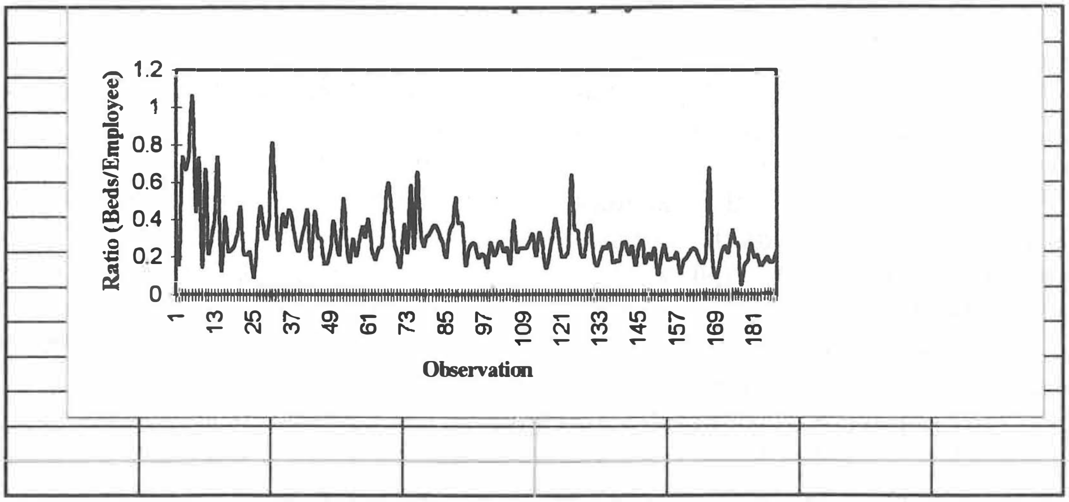

Figure 4: The Number of Beds per Employee

The mean and standard deviation for number of admissions per employee were 7.12 and 2.74 respectively. The mean and standard deviation for number of beds per employee were 0.29 and 0.14 respectively. The higher standard deviation of number of admissions per employee compared to number of beds per employee shows that there are some hospitals that have lower admissions per employee compared to others. The differences in hospitals in terms of number of beds per employee are relatively low.

Among the set of factors that lead to the demand of human resources are the admissions, physical capacity (beds in out case), special ambulatory services, type of hospital, and the top DRG related service. In other words, human resource requirement may be represented in the following functional form:

Number of Employees = f (admissions, number of beds, number of emergency service visits, hospital ownership, top DRG).

Where f(.) is a mapping that maps the independent variables to the range of dependent variable. In order to test the significance of the model independent variables with the dependent variables, we conducted one way ANOVA test. A total sample of 175 hospitals was used for conducting this analysis. Table 1 shows the results of the ANOVA test.

Table 1: The ANOVA Summary Table for Overall Model and Main Effects.

Source	Sum of Squares	DF	Mean Sq.	F Ratio	P>F
Overall Model					
Model	5.15	5	1.0306	184.40	0.0001**
Error	0.94	169	0.0056		
Main Effect					
Ownership	0.24	1	0.2372	42.44	0.0001**
Beds	3.35	1	3.3496	599.28	0.0001**
Emergency Visits	0.08	1	0.0843	15.08	0.0001**
Admissions	1.43	1	1.4319	256.19	0.0001**
DRG	0.05	1	0.0504	9.02	0.0031**

**α=0.01 level of significance, Model R^2=0.845

The results in the Table 1 show that overall the variance in the dependent variable is significantly explained by the variance in independent variables and all the variables significantly contribute towards the variance of the dependent variable. The ANOVA test resulted in the following linear mapping with root mean square error of 0.075.

Employees = 0.028 +0.243(Beds) + 0.02 (Emergency Visits) + 0.672 (Admissions) - 0.007 (Ownership) - 0.357 (DRG).

Given the empirical evidence of the significance of the independent variables in explaining the variance in dependent variable, we now turn to multivariate non-parametric and non-linear models for learning and generating human resource requirement forecasts.

We took the data on 175 hospitals and divided them into two sets of 100 hospitals and 75 hospitals. We used random sampling to break the data into two sets so that, as far as possible, both sets contained a random and unbiased set of hospitals. After the data sets were divided into two sets, we designed a connectionist model for mining non-parametric non-linear patters from the set of 100 hospitals. Among the design issues were:

1. *Normalization of Dependent Variable*: Since we were using logistic activation function $f(x)=\frac{1}{1+e^{-x}}$, it can be shown that: $\underset{x\to+\infty}{Lim} f(x)=1$ and $\underset{x\to-\infty}{Lim} f(x)=0$ we normalized our dependent variable of number of employees (y) so that $y \in (0,1)$.
2. *Training Sample Size*: Our initial decision on the training set sample size of 100 and test set of 75 was determined on the heuristic of training set size >= 10 times number of independent variables (Weiss & Kapouleas, 1989). Since we had 5 independent variables we selected the training set sample size of over 50.
3. *Learning, Generalizability and Overlearning Issues*: The network convergence criteria and learning rate determines how quickly a network learns and how well a network learns. A lower learning rate increases the time it takes for the network to converge, but it does find a better solution. The learning rate was set to 0.08. The convergence criteria was set as follows:

   If |Actual_Effort - Predicted_Effort| ≤ 0.1 Then

      Convergence = Yes.

      Else

      Training iterations ≥ Maximum iterations

      Convergence = Yes.

   We selected the above mentioned convergence criteria to account for the high variability of the dependent variable. A more strict convergence criteria was possible but, there is an issue of overfitting the network on training data. Overfitting was an issue as there is evidence in literature that overfitting does minimize sum of square error in a training set at the expense of the performance on the test set (Bhattacharyya & Pendharkar, 1997). We believed that the above mentioned convergence criteria can make the network learning more generalizable.
4. *Network Structural Issues*: The network structure that we chose for our study was similar to the one shown in Figure 1. We had a three layer network for modeling a nonlinear relationship between the independent variables and the dependent variable. The number of hidden nodes were twice the number of

input nodes+1 which is a more common heuristic for smaller sample sizes (Bhattacharyya & Pendharkar, 1997). In the case of larger sample sizes, a higher number of hidden nodes are recommended (Patuwo et al., 1993). For our research, we tried two different sets of hidden nodes, 11 and 6.

5. *Input and Weight Noise*: One of the ways to develop a robust neural network model is to add some noise in its input and weight nodes while the network is training. Adding a random input noise makes the network avoid local minima and makes it less sensitive to changes in input values. The weight noise shakes the network and sometimes help it to jump out from a gradient direction that leads to a local minima. In one of our experiments, we added input variable and weight noise during the network training phase.

Experiment and Results

Based on the design considerations described in the previous section, we conducted 4 different experiments varying the structural design and noise parameters in a two-layer network. Table 2 and Table 3 illustrate the results of different structural design for our four experiments for network training on 100 cases and testing the trained network on 75 unseen cases respectively. The first two experiments represent the hidden number of nodes of 11 and 6 in a two-layer network. The numbers 11 and 6 were chosen to represent (2n+1) and (n+1) heuristic where n is the number of input nodes. The difference in prediction accuracy and RMS during the learning phase was noticed for the different experiments. It was seen that adding noise helps the smaller size network. However, for larger network (one with 11 hidden nodes in the layer), the input and weight noise was detrimental both for training and testing performance.

We plot the training and test results of our best performing 1st experiment with 11 hidden layers and no random input and weight noise in Figures 2 and 3 respectively.

Table 2: Performance of three different structural design during the training phase

Number of Hidden Nodes	Input Noise	Weight Noise	RMS Error	Prediction Accuracy
11	0	0	0.037	97%
11	0.08	0.01	0.05	96%
6	0	0	0.044	97%
6	0.08	0.01	0.041	98%

Table 3: Performance of three different networks during the test phase

Number of Hidden Nodes	Input Noise in Trained Net.	Weight Noise in Trained Net.	RMS Error	Prediction Accuracy
11	No	No	0.079	80%
11	Yes	Yes	0.20	37.3%
6	No	No	0.11	60%
6	Yes	Yes	0.098	64%

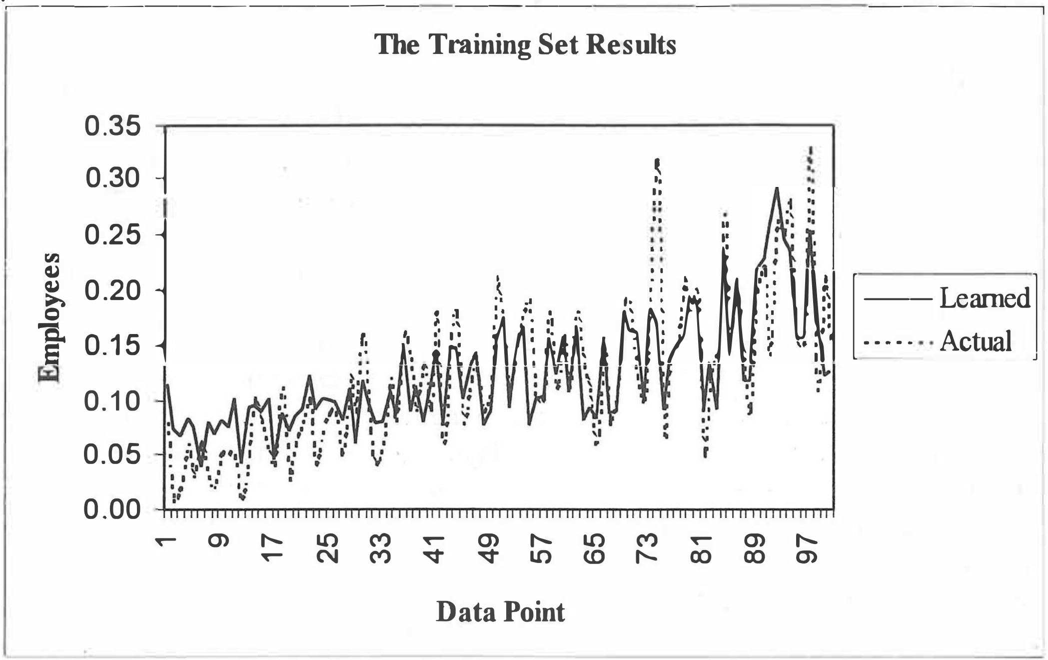

Figure 2: The Performance Comparison between the Actual Human Resource Requirements vs. Learned Human Resource Requirement at Convergence.

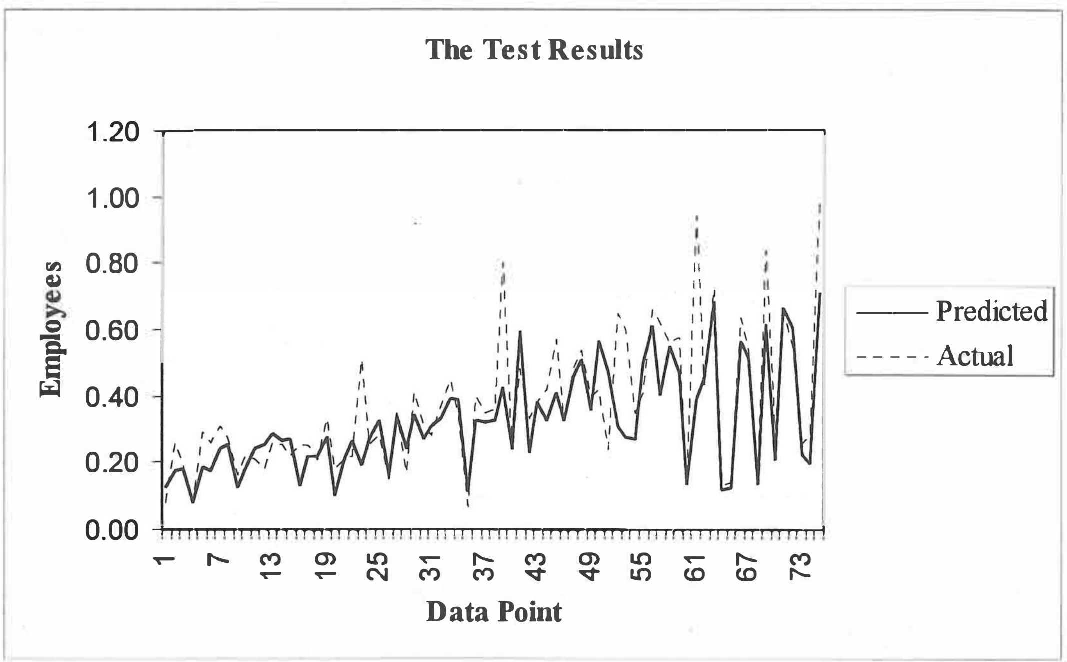

Figure 3: The Performance Comparison between the Actual Effort and Network Predicted Effort.

Managerial Significance, Conclusions, and Future Work

We have described a connectionist model approach to mine, learn and forecast human resource requirements. Data for various hospitals in Pennsylvania was obtained and was used to design the connectionist model for forecasting human resource requirement. As millions of dollars are invested each year in hiring and training employees for healthcare facilities, human resource managers can use connectionist models to forecast the human resource requirements and to prepare the Human Resource (HR) budgets for new employee hiring and training. The HR personnel can use connectionist model based forecasts to access the HR needs if a health care facility considers changes in existing services (DRG) or existing capacity (beds). Further, given existing capacity, services, admissions, ER visits, and ownership, health care facilities can use the connectionist model to forecast the number of employees. The forecasted number of employees can then be compared with the existing workforce to bench mark the performance of one given hospital to the industry average. In the case of hospitals evaluating the addition of new services and/or dissolving the existing services, the connectionist models can help the decision-makers foresee the impact of their decisions on the human resource requirements.

Among the connectionist model design issues, we used random input and weight noise during the learning phase of our experiments. One of our observations was that adding noise helped the network with lesser nodes in the middle layer (6) predict well. However, for the network with a higher number of nodes in the middle layer (11), the addition of noise was detrimental for both its learning and predictive performance. Our conjecture is that a higher number of nodes in the middle layer helps neural networks store more sensitive patterns in a larger set of training examples. The addition of noise in a network with a higher number of layers distorts the learning of the sensitive patterns and hurts the predictive performance. In smaller networks (with a lesser number of nodes in the hidden layer) a general pattern is learned and the `addition of noise reduces the over fitting of the network on the training set. Noise in smaller networks is more beneficial compared to the larger networks. Our conjecture on the impact of noise on the predictive ability of connectionist models is open for future tests.

Various other approaches have been tried in the literature that improve the performance of connectionist models over the traditional back propagation. Recently, Piramuthu, Ragavan & Shaw (1998) showed that feature construction can be used to improve learning and prediction of connectionist models. Several researchers (Becker & Cun, 1988; Curry & Morgan, 1997; Falhman, 1988; Parker, 1987) showed that second-order gradient search methods improve the performance of the back propagation model that uses the steepest decent search method. Since a connectionist model is a data driven model, quality of input data does govern its predictive performance. It appears that Data Envelopment Analysis (DEA) might be used to select data that can be used for learning software productivity patters using connectionist models. A traditional DEA model can be used to identify the most efficient training set of cases based on multiple inputs and a single output. The efficient cases can then be used as a training set for learning human resource requirement patterns for a connectionist model. The new model can then be used to generate the *optimistic forecast*. The results of optimal forecast can be used to set a base line for human resource requirements.

When compared to linear regression models of forecasting, non-linear connectionist models provide a better fit to the training data. The better fit results in better forecasts. The linear models, inspite of their higher root mean square error, do have their place in the managerial decision making. Most managers and economist like to know the marginal values of independent variables. For example, a manager would like to know:

1. Based on the industry average, how many more employees would I need to hire if my admissions increase by an additional 100 patients?
2. Based on the industry average, how many more employees would I need to hire if I increase my physical capacity (beds) by an additional 10 beds?

Linear models can answer the above two questions. For example, from the results of our ANOVA test, we can easily show that:

$$\frac{\partial Employees}{\partial Beds} = 0.243, \& \quad \frac{\partial Employees}{\partial Admissions} = 0.672$$

The above marginal values can be used to answer the two questions posed above. The answers are 67.2 and 2.43 respectively.

The successful implementation of our connectionist model shows the promise of data mining and connectionist models to learn patterns in the health care industry. However, it must be noted that the proposed model represents a sub set of variables that impact human resource requirements. Better forecasts can be obtained by acquiring information about the staff turnovers, organizational reward structure for employees involved in the facilities, etc. Future research needs to be done on identifying other factors that impact the human resource requirements.

In the course of our experiments, we did look into evolutionary data mining techniques such as genetic algorithms and genetic programming. In our study, the use of genetic algorithms needed us to pre-specify the non-linear relationships between our independent variables and the dependent variable. We thought that this assumption was restrictive and dropped the technique from any further consideration. Genetic programming (Koza, 1992), however, didn't require any pre-specification of relationships between independent and dependent variables. The design of the genetic programming model to learn human resource requirement patterns required us to look into too many parameters such as population size, mutation rate, initial tree size, crossover rate, function set, terminal set, etc. In the lack of adequate knowledge of exact impact of these parameters on our smaller sample, we didn't consider this technique any further either. We do believe that both of these techniques may hold potential for learning the human resource requirement patterns. Future research may be focused on the performance comparisons of genetic programming and neural networks in learning and forecasting human resource requirement in the health care industry.

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Big Emerging Markets in South America: Some Implications for Market Entry

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Abstract

South America has witnessed the emergence of Argentina, Brazil, Colombia, and Venezuela as Big Emerging Markets (BEMs) over the last decade. These markets have shown consistent growth of purchasing power of a large proportion of population with positive attitude toward foreign products, emergence of competitive industries, and gradual divestment in businesses by host governments. Though these markets are considered to offer attractive opportunities for foreign firms, they are teetering around political, economic and infrastructural instability. The received literature is predominantly of the view that firms entering these markets should use low resource commitment market entry modes. Contrary to these recommendations, we propose that these markets can best be served through high resource commitment type of investments. In this work, we analyze these BEMs, review the entry mode literature under conditions of market uncertainty and make a case for high resource commitment entry.

Introduction

According to the Department of Commerce estimates, Big Emerging Markets will account for more than half of the total world trade growth by the beginning of the twenty-first century and these markets offer a great potential for U.S. exports. Mostly from the third world, these countries are going through industrialization and urbanization and personal incomes of their people are rising (Garten, 1996; Prahalad & Lieberthal, 1998). Like their counterparts in the developed nations, more and more consumers in BEMs are showing increasing desires to consume a variety of products hitherto unavailable or restricted to a few due to restrictive trade practices of their governments (Cateora, 1996). The BEMs are scattered all over the world spanning Asia, Africa, Europe, and South America.

Over the last decade, South America has witnessed the emergence of Argentina, Brazil, Colombia, and Venezuela as Big Emerging Markets. These markets have shown consistent growth of purchasing power of a large proportion of their population, these consumers have positive attitude toward foreign products, there is an emergence of competitive industries, and gradual host government divestment in business arena (Martin, 1994; Romano, 1997). Together these BEMs represent about eighty percent of the Gross Domestic Product of South America and are considered to be the engines of growth for international trade, in particular for the United States businesses in the twenty-first century.

Though these markets seem to offer attractive opportunities for market entry by foreign firms, they exhibit considerable political, economic and infrastructural instability. The economic infrastructures of these markets are in a dilapidated state with host governments having little or no funds to revive them. The political conditions are not very stable either. Some of these markets have adopted democratic systems recently replacing the traditional dictatorial regimes. The received literature is predominantly of the view of low resource commitment market entry for foreign firms under these conditions. For example, Agodo (1978), Fatehi-Sedeh and Safizadeh (1989), and Kobrin (1979) are of the view that firms are most likely to choose low resource commitment entry modes such as exporting, contracting, etc. to deal with markets under unstable conditions. Likewise Bass, McGregor and Walters (1977), Mitchell (1979), and Root and Ahmed (1978) observed that lack of infrastructural facilities act as a barrier to foreign firms' market entry through high resource commitment modes like wholly owned subsidiary or joint venture.

Contrary to the implications expressed in the received literature, it is proposed that these markets can offer attractive opportunities for long-term high resource commitment type of foreign investments. These markets are too important for foreign firms, especially for U.S. businesses, to handle them with an arm's length approach, i.e., through low resource commitment type of market entry. Being in the backyard, they can provide valuable experience to U.S. firms to be successful in other BEMs across the globe. It is well documented that the impact of entry mode decision on a firm's success of its foreign operation is great (Anderson & Gatignon, 1986; Erramilli & Rao 1993; Wind & Perlmutter, 1977). Therefore, it is very important for firms to make their market entry decisions for BEMs very carefully and not be swept by the received view. Other than the U.S. Department of Commerce trade publications and occasional articles appearing in Business Week or other trade journals, not much of theoretically grounded academic work is available on South American BEMs.

In this work, we analyze the Big Emerging Market phenomenon in South America, review the foreign market entry literature under conditions of market uncertainty, and make a case for market entry by foreign firms using high resource rather than low resource commitment market entry modes. By offering an alternative point of view, it is hoped that this work will be a valuable addition to the growing body of foreign market entry mode literature in general and to the literature on entry modes in BEMs in particular. Moreover, this work is expected to become a stepping stone for analyzing the intriguing BEM phenomenon at global level.

Big Emerging Markets in South America

According to the Department of Commerce, the BEMs share a number of important characteristics such as larger markets for a wide range of products (large size with significant populations), are regional economic drivers, have strong growth rate and/or are expected to maintain strong growth rates, and have significant political clout in their regions (Cateora, 1996). These markets are dispersed globally. For example, in Asia--China, Hong Kong, Taiwan, India, and Indonesia; in Africa--South Africa; in Central Europe--Poland and Turkey; and in South America--Argentina, Brazil, Colombia, and Venezuela comprise the BEMs. The phenomenon of BEMs appears to have originated around 1994-95 from the work done at the Department of Commerce under the guidance of late commerce secretary Ron Brown. The primary purpose of this study was to find out markets around the world with high future growth opportunities for U.S. businesses in the twenty-first century. Given the scope of this paper, we provide a brief description of the South American BEMs.

Argentina

Argentina is located in the farthest southern part of South American continent and has a population of approximately 36 million people growing at an average rate of about one percent. Its GDP reached $297 billion by 1996 with a growth rate averaging more than 8% between 1991 and 1994, 4.6% in 1995 and 4.4% in 1996. Politically unstable in the past, Argentina became a democratic society and has been electing its presidents since 1989 through free elections. Its currency, Peso, has been trading at par with dollar since 1991. The current inflation rate is about one or two percent and is at the lowest level in 30 years. The economy registered an average annual inflation rate of 255% during the period of 1985-95. The country has been developing rapidly its rail and transit systems as well as communication infrastructure (Garten, 1996).

Following a period of deregulation, the energy sector in Argentina is mainly in private hands and is expected to be a net exporter of electric power to the neighboring countries, Chile, Paraguay and Uruguay in the near future. Argentina is very rich in natural resources and has a highly literate population with literacy rate approaching 96%. The per capita income of Argentineans is about $9000, the highest in South America and has been growing at a rate of about 6%.

It is forecasted to be a big emerging market for U.S. products such as computers, equipments for oil and gas, medical, and agricultural areas, automobiles, financial services, and information and technology. Most Argentineans are of European descendence, with strong ethnic, cultural, and business ties to Europe. Therefore, foreign products are not unfamiliar to Argentineans. American products are seen as of high quality and innovative.

Brazil

Located on the central eastern area of the continent, Brazil is the fifth largest country in the world and the biggest country in South America. With 165 million people as of 1995, its population has been growing at a rate of about 1% a year. Approximately 31% of its population is under 14 years. Except for the year 1993, when its GDP fell by 4.2%, the GDP of Brazil has been growing steadily at a rate of about 5% and was $560 billion for the year 1995. The current level of GDP per capita is about $5400. This country has been reeling under high inflation-- an annual average of 875% was registered during the period of 1985-95. Currently inflation is 34%. Brazil has implemented a number of fiscal reforms over time to strengthen and open its economy to international trade. Real, the Brazilian currency, has maintained its value against the U.S. dollar. The highest 20 percent of population (about 32 million) controls 68% of the country's income and prefer to have imported goods.

Brazil is a fifteen-year old democracy with about one and half dozen political parties. Currently the government is run by a coalition of parties and suffers from instability inherent in coalition governments. U.S. merchandise trade surplus with Brazil has been growing recently and U.S. products have a very good reputation and are well accepted. Franchising has been developing rapidly and two thirds of foreigner franchises have headquarters in the USA. The northern part of the country is lacking an adequate level of the necessary infrastructures. There are a number of areas such as education, environment, transportation and health care infrastructure that need foreign investment. These are the prime areas of opportunity for U.S. businesses. Other areas of opportunity for U.S. firms to exploit are health care, environment, information technology, automobiles, energy sector, and financial services. Brazil possesses vast amount of natural resources, which remain the major long-term economic strength (Geier, 1996).

Colombia

Colombia, a land of 38 million people, with its coasts touching the pacific ocean is located on the northwest side of South America. Colombia has enjoyed South America's most consistent record of growth over the last several years. From 1989 to 1996, GDP has increased on average 5%, reaching $201 billion with a per capita GDP of $6130. Colombia has never defaulted on any of its official debts and its international rating is considered Ainternational grade@. Despite the expanding economy, the poverty rate remains at 40%. The lack of infrastructure is a persistent problem. Unlike many other South American neighbors, Colombia has never experienced a military regime. However, on the political arena, various drug cartels and guerrilla groups are continually interfering with the fragile equilibrium of the instituted political power.

Peso is the Colombian currency and has been trading at $1 for 1075 Pesos. Like its sister countries in the South America, inflation is significant in Colombia. From 1985 to 1995, the average annual rate of inflation was 25% and has remained at the level of 22% during 1997.

Despite heavy import duties, products from all over the world are well accepted and can be found in Colombian supermarkets. The literacy rate is around 91%, quite high for South American standards. Colombia is in a process of expanding its highways, railways systems and its ports. These sectors are being privatized and expanded upon, and are of potential interest for U.S. businesses. Other areas of attraction to U.S. firms include food processing and beverages.

Venezuela

Venezuela is in the northern corner of South America. With a population of 22.4 million, it has been growing at a rate of about 2% per year for the last five years. Venezuelans are predominantly urban inhabitants. As of 1996, the GDP of Venezuela was $197 billion, twenty-five percent of which originates from the petroleum sector. The GDP per capita is $7900. The Bolivar is the Venezuelan currency, trading at $1 for 400 Bolivars. Inflation is a major economic problem and even though it has been decreasing for the last two years, it remained at 42% in 1997. Inflation averaged 47% a year for 1985-95. The currency stability and inflation depend heavily on the international oil prices as it is a major source of foreign currency reserves. Politically, the country is still an unstable democracy with military being involved as a major power broker among political parties.

The country lacks proper infrastructure in areas such as telecommunications equipment, transportation, health care, computer technology and networking. These areas together with telecommunication services, food, and medical equipment show very good prospects for U.S. business. U.S. companies are holding a good market share in the oil equipment industry as well as in the computer hardware market. Venezuelans appreciate U.S. food items and in general U.S. products are well respected in Venezuela. The richest 20 percent of Venezuelans collect 58 percent of the country's annual income and are a good market for imported goods.

In sum, the South American BEMs are nascent democracies and have higher levels of political instability as compared to that in the advanced nations. Table 1 provides a summary of relevant characteristics of these markets. They have a large but unique kind of middle-income group--educated consumers with an income range around $10,000 not like the middle-income group in western countries. These consumers have a positive attitude for foreign products. However, according to Prahalad and Lieberthal (1998), the consumers in these markets are no push overs. They exhibit approximately three times higher brand switching behavior than the consumers in the western nations. They demand to be served in the way conducive to their requirements and not be treated as vassal markets of multinational companies. BEM markets have relatively poor infrastructure and higher inflation rates. Given these characteristics, it is difficult to classify these countries in the traditional category of Lesser Developed Countries. Perhaps, as their name suggests, these countries are on the move toward becoming the Newly Industrialized Countries (NIC)--a status closer to the advanced nations. In the material to follow, we would describe the received view of the foreign market entry mode literature under conditions of instability depicted above.

Foreign Market Entry Mode Literature

Root (1987) defines an entry mode as an institutional arrangement that makes possible the entry of a firm's products, technology, human skills, management, or other resources into a foreign country. Hill, Hwang, and Kim (1990) refer to an entry mode as a way of organizing a firm's business activities in a foreign country. In short, an entry mode is a structural arrangement that allows the firm to implement its product market strategy in a host country. This can be done in two major ways: (1) by operating itself or in collaboration with a host country firm, or (2) by engaging in a domestic transaction with another firm which in turn handles the host market operation. If the firm chooses the first way, it is said to be directly involved in the host market and the various forms of such arrangements include exporting through host country intermediary, contracting, joint venture (JV), and wholly owned subsidiary (WOS). Likewise, if the firm opts for the second way, it is said to be indirectly involved in a host market operation. Examples of indirect entry modes include casual exporting, export brokers, and export management companies. These are also called indirect export modes. Following is a brief description of the entry modes listed above:

Wholly Owned Subsidiary (WOS)--the foreign firm is the sole owner of host country production and marketing operations.

Joint Venture (JV)--the foreign firm shares the ownership of production and/or marketing operations in the host country with another firm (most likely a host firm).

Exporting through host country intermediary--the foreign firm exports products to a host country firm. The marketing activities are carried out under the ownership of the host country firm.

Contracting--it is the host country firm that is the sole owner of local production and marketing operations. The foreign firm has no stake in the ownership of host country operations.

Indirect Export Modes--the foreign firm carries out its production and marketing operations at home and has no investment in the host country operations. The firm is engaged in domestic transactions with another home country firm which has access to the host market and conducts marketing operations there under its ownership.

It is clear that, except for the joint venture and wholly owned subsidiary, all other modes described above are low-resource commitment modes because of the relative amount and type of firm's resources involved. For example, if a firm decides to enter a host country through a JV or a WOS mode, it may have to invest in plant, machinery, logistics, marketing organization, etc. and some of the investment may be in market-specific assets alone. That is why WOS and JV are referred as high resource commitment modes. Whereas in all other modes described above, the firm's investment is relatively low and in most cases the investment is of the host country partner. Such entry modes are called low resource commitment modes (Anderson & Gatignon, 1986; Hill, Hwang, & Kim, 1990).

Political Environment and Entry Mode Choice

The political environment of a host country consists of its (1) internal political conditions and (2) relationship with the government of the investor's home country (Nigh, 1985; Schollhammer & Nigh, 1984). A number of studies analyzing the impact of host country political environment on firm's foreign direct investment decisions of U.S. firms have been reported. The empirical studies of Agodo (1978), Aharoni (1966), Fatehi-Sedeh and Safizadeh (1989), Goodnow and Hansz (1972), Kobrin (1979), Kobrin, Basek, Blank, and Palombra (1980), Maclatyon, Smith, and Hair (1980), Root (1987), and Root and Ahmed (1978) indicate that firms under unstable political conditions are likely to choose low resource commitment rather than high resource commitment modes.

The primary reason for choosing low resource commitment modes is that the political instability places a firm's assets at heightened risk and the firm can not afford to lose them or render them unproductive (Bijur, 1995; Onkvisit & Shaw, 1993). The other reasons given are the threat of expropriation, confiscation, or nationalization of the firm's assets. According to Root (1987), a foreign firm may face a list of possible political risks such as general instability risk, ownership or control risk, operations risk, and transfer risk. Furthermore, foreigners in a politically uncertain environment may become the primary target of locals' wrath like the hostage taking of Japanese businessmen in Peru recently or of Americans in Iran after the fall of Shah of Iran's government in the nineteen seventies. Therefore, firms opt for safer approach in dealing with politically uncertain markets and that boils down to low resource commitment modes like export through host country intermediaries, indirect export modes or contracting (Erramilli & Rao, 1993; Gatignon & Anderson, 1988).

Host Country Infrastructure and Entry Mode Choice

The infrastructure of a country includes roads, harbors, railways, telecommunication, postal service, power and water supplies, and banking facilities. These are necessary for smooth and efficient performance of production and/or market functions of a firm (Agodo, 1978). In a study involving foreign direct investment of U.S. firms in African nations, Agodo (1978) found a significant relationship between the extent of foreign direct investment and the quality of business infrastructure of that nation. Root and Ahmed (1978) observed that among developing nations, those that had better commerce, transport, and communication infrastructures were more attractive to foreign investors. In another study involving plant location decisions of U.S. firms in Asia, Latin America and Europe, Bass, McGregor, and Walters

(1977), found the importance of four infrastructural factors. These are: (1) cost of site development, (2) land and construction costs, (3) level of industrialization, and (4) potential for industrial growth. Likewise, Mitchell (1979) observes that good is essential for the marketing operations of a firm in a country.

The sum and substance of these studies is that a reasonably developed infrastructure is a very important variable in a firm's foreign direct investment decision--use of a high resource commitment mode. A poor infrastructure increases the cost of production and marketing operations as special packaging and logistics considerations have to be made to enhance the safety of products (Prahalad & Lieberthal, 1998). Poor infrastructure also affects the firm's communication with dealers and the consumers.

Host Country Buying Power and Entry Mode Choice

Growing Gross Domestic Product of a country, growing personal incomes of its people, low and stable inflation rates, and stable currency are all indicators of a strong and a stable economy headed for getting stronger. These are and have been the typical indicators of the U.S. economic environment for the last six to seven years and also represent the economies of other developed nations in the western world. Under such circumstances, consumers have greater buying power and they buy a variety of products (both durable and nondurables) to satisfy their long overdue needs (Cateora, 1996; Prahalad & Lieberthal, 1998). Such markets are also highly attractive to foreign firms to engage in production and marketing their products to meet the needs of the local consumers (Onkvisit & Shaw, 1993; Sarathy & Terpstra, 1997). The primary reason being that the assets are highly productive in stable or growing economic environments.

However, when the buying power of consumers of a host country becomes low due to the onset of double digit or runaway inflation, consumers return back to the traditional ways of satisfying their needs, i.e., purchase of local generic brands. They cut down on foreign product consumption, whether these are produced locally or imported, because these products compete on quality with host country products and are usually high priced (Cateora, 1996; Prahalad & Lieberthal, 1998). There may still be the demand for foreign products but at a much lower level. More than half of the countries of the world are facing the nightmare of double or triple digit inflation (Sarathy & Terpstra, 1997). Furthermore, under such conditions, host governments usually resort to restrictive policies such as strong price controls and exchange controls (Sarathy & Terpstra, 1997). The classic work of Goodnow and Hansz (1972) classifies such countries as ACold@ countries and they recommend the foreign firms to use low resource commitment entry modes in these countries.

For a foreign firm the loss in such markets is three times over: first the inflation eats into its profits, then the restrictive exchange controls does not allow it to fully repatriate its earnings thereby immobilizing resources to places for better productivity, and a third loss comes from the shrinking consumer market. In short, the most appropriate market entry mode for a firm under unstable economic conditions is likely to be a low resource commitment mode as a high resource commitment mode will end up locking its valuable resources to sub-optimal or unproductive markets.

In sum, under the conditions of political and economic instability and dilapidated infrastructure, the received view of the entry mode literature is that the foreign firms should use low resource commitment modes to serve those markets. This would not only reduce losses to firms' assets in those markets but will also keep their presence there. In case the conditions improve, the firms can always increase their presence in those markets. Furthermore, assets saved from deployment in unstable markets can be allocated for better yields to other markets. In the following section, we make a case for a firm's high resource commitment entry modes in BEMs despite the existence of unstable conditions described above.

Appropriate Market Entry Mode Choices for BEMS

As described, BEMs have nascent infrastructures relative to the advanced nations. Given the chronic paucity of funds, and the political instabilities in these markets, the host governments may not be able to develop the infrastructures up to the level that firms from advanced countries are used to (Garten, 1996; Geier, 1996). Supposingly, if these markets dedicate themselves fully to the development of western standard infrastructure, even at the cost of every other activity to facilitate the arrival of firms from advanced nations, what is the guarantee that the expectations of the managers from advanced nations will not become higher by the time the desired infrastructure is up and running. Given the speed of advancement in science and technology, this gap between the western firms' expectations of appropriate infrastructure in BEMs and the actual one is least likely to be narrower in the near future. Therefore, regardless of the prevailing situation in the BEMs, the foreign firms will have to compete in these markets because these are the only markets that offer immense long term growth prospects (Prahalad & Lieberthal, 1998; Romano, 1997).

As depicted earlier, the received view on firms' entry mode choices in foreign countries under conditions of political uncertainty are limited to low resource commitment modes. The reasons given being the threat of expropriation, confiscation, or nationalization of firm's assets, general instability risk, ownership/control risk, operations risk, and transfer risk (Root, 1987). It is true that business expropriation, confiscations, or nationalizations have taken place before the 1970s and according to Business Week (1981) estimates, five hundred sixty-three acts of expropriation have been reported in seventy-nine lesser-developed countries. However, such threats have become remote since the 1970s (Onkvisit & Shaw, 1993). Moreover, firms have a number of available tools now to manage political risks such as insuring the investment against political risks, structuring the investment to increase the host country's dependence on sourcing from outside, and negotiating with the host country government about such risks, lobbying the host government for favorable legislations, promotion to influence consumers directly (Mascarenhas, 1982; Shapiro, 1981). Therefore, the political uncertainty in a host country no longer poses a major threat to the assets of a foreign firm now. This assertion is further corroborated by the recent political turmoil in Indonesia in which mass demonstrations led to the overthrow of President Suharto who was in power for more than two decades. But there is no evidence of Indonesians attacking and destroying the facilities of Nike, Coke, Pepsi, or McDonald's or those of other foreign firms. The received view of appropriateness of low resource commitment for politically uncertain countries might have been valid in the nineteen sixties or seventies, but is questionable now. Therefore, this should not be a serious impediment to market entry through high resource commitment modes.

As far as economic conditions in these BEMs are concerned, they are no better than the prevailing infrastructural or political conditions. These markets have recently moved from controlled economies to privately owned and operated business systems. Like many other countries in the world that have recently switched over to the western type of economic system, these markets are facing fluctuating fortunes--high inflation rates, turbulent stock markets, rapid currency fluctuations (Boughton, 1998; Clayton & Gardam, 1998). Despite the economic turbulence, the gross domestic products of these markets are growing at a healthy rate of about six percent per annum and such a high growth rate is not available even in the advanced economies. As described earlier, in such markets the received literature would recommend a low resource commitment mode as the inflation may eat into the profits of a foreign firm, the host government imposition of restrictive exchange controls may further limit the ability of repatriation of earnings, and the prevalent consumer market may shrink. However, looking at these BEMs from a closer vantage point it becomes clear that though the inflation rate was very high in 1985-95, it is gradually coming down and is a matter of time before it comes down to a single digit. It is a matter of fact that the currencies of these markets are weak and are much more prone to rapid fluctuations against the U.S. dollar and other major currencies. From an alternative point of view, such conditions can be a boon rather than a bane for a foreign firm. For example, a foreign firm can use its operations in the BEM with weakening currency as a cheap source of products for re-exporting them to its home country or another country with relatively stronger currency thereby reaping above normal profits. This way, the firm can counter the negative impact of inflation on its sales in the local market. Furthermore, under bad economic circumstances, host governments usually encourage foreign firms to increase the exports of their products to other countries to bring in the valuable foreign currency. In short, transient economic conditions of BEMs should not be construed as big stumbling blocks to the market entry through high resource commitment modes rather, these blocks can be used as stepping stones to increase the firms' business and profits.

On the positive side, BEM markets offer a large but new consumer base--the rising middle class. This consumer base is new in the sense that it is thirsty for a variety of good quality consumer products and a better quality of life but its income range is at par or less than that of the typical poverty line in the west. According to Prahalad and Lieberthal (1998), most of the middle-income groups in BEMs fall between the range of annual income of $10,000 and $20,000. These people are more sensitive to price-performance equation than consumers in the advanced nations. They are willing to pay a higher price provided the foreign firm is willing to include the desired number of features (more than what it has included in its products marketed elsewhere and definitely much more than those available in the domestic brands) in its products. This is because their usage patterns are different from those found in the western world (Prahalad & Lieberthal, 1998). In short, BEM consumers offer tremendous opportunities for future growth for firms from other nations, especially from advanced nations but at their terms. These are not the vassal states of multinational corporations (MNCs) in the sense that whatever they will sell would be acceptable to the people of BEMs. Also, they are not the place where MNCs can exploit their sunset technologies for whatever residual value they can get (Prahalad & Lieberthal, 1998). Therefore, in order to be successful, foreign firms will have to invest heavily in developing their own marketing, production, and distribution bases conducive to the available infrastructures. This means foreign firms will have to enter these markets with long-term orientation and the most appropriate entry modes are the high resource commitment modes like wholly owned subsidiary and joint ventures.

High resource commitment modes offer complete control to a foreign firm over its production and/or marketing operations in a host country (Anderson & Gatignon, 1986; Anderson & Coughlan, 1987; Erramilli & Rao, 1993). That is, the foreign firm, based on its knowledge of the host market, can implement its product market strategy in that country the way it deems best. In fact, that is what is needed precisely in BEMs because of the following reasons. One, the tastes and preferences of the middle-income groups, the new customer-base in the BEMs, need be changed to accept foreign firms' products and services. So far, they have been captives of domestic products due to their government's restrictive trade policies. Two, the consumers expect treatment from foreign firms better than the one they are used to by the local firms. Three, foreign firms need to develop first hand understanding of consumers' consumption patterns and actual/possible usage of their products. For example, Motorola Inc. did not realize for long that the Chinese would be using pagers for sending their entire messages rather than using them for short talks as in the west (Prahalad & Lieberthal, 1998). By redesigning pagers with greater capabilities, Motorola could capture a hefty share of the telecommunication market in China. Finally, foreign firms need to develop close, rather than at arm's length, linkages with the consumers in these markets. This is because these consumers are going through a variety seeking behavior and are exhibiting a brand switching rate much higher than that in the western world (Prahalad & Lieberthal, 1998). Whichever firm will be able to develop close relationships will be able to reap above normal profits (Day & Wensley, 1993; Ganesan, 1994). All this can be done only through high resource commitment modes only.

In summarizing, the better way for foreign firms to serve BEMs would be through high resource commitment modes. These modes not only offer complete control over the implementation of production and marketing programs but also allow the firm to develop a close relationship with consumers and this is what is precisely needed in BEMs. Threats due to political uncertainty are a matter of the past as the world is no longer divided into communist and capitalist blocks. Disputes between nations and foreign firms are handled through various world bodies like GATT (general agreement on tariffs and trade) and WTO (world trade organization). Poor economic and infrastructural conditions should not be seen as threatening conditions rather, they should be considered as opportunities for acquiring local image, consumers' trust, and hence long term above normal profits.

Big Emerging Markets offer tremendous opportunities in the near future. These markets are unique in the sense that, though they have poor infrastructures and are experiencing political and economic instability, their consumers are thirsty for new and better products. However, they want products at their terms and do not want to be treated as captives of corporate imperialism. Prahalad and Lieberthal (1998) have gone a step further in forecasting that the present culture of foreign firms, in fact, will be changed by their experience of BEMs. Serving these markets effectively is possible only through high resource commitment modes; low resource commitment modes will be sub-optimal.

The received view of low resource commitment modes in markets under unstable and uncertain conditions might have been relevant for the time frame of the 1960s and 1970s when threats to a firms' assets were a matter of fact. Since then, the world is becoming more receptive to trade and interdependence. Obviously, there are going to be normal operating business risks for firms but those risks should not deter foreign firms from exploiting new opportunities. In this work, we have made a case for market entry into BEMs through high resource commitment modes based on the uniqueness of these markets, the assessment of the Department of Commerce, and those of other writers. Ultimately, it is up to the business managers to make these decisions based on their perception of those markets. In this work, we have attempted to make a case for market entry through high rather than low resource commitment modes in BEMs despite the prevalence of adverse political, economic, and infrastructural conditions. In this process, we argued against the related received view of market entry and provided a balance to the one-sided argument. It is hoped that this work will encourage the businesses to look at high resource commitment modes as possible market entry options as well, rather than becoming captives of the received view. Finally, it is hoped that this work will contribute to the development of a general theory of foreign market entry modes that is applicable to the traditional as well as new emerging markets.

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1 Characteristics of Big Emerging Markets

cteristics	Argentina	Brazil	Columbia	Venezuela
apita Income	$9, 000	$5,400	$6,130	$7,900
de toward Foreign cts	Positive	Positive	Positive	Positive
omic Conditions	Current inflation rate 1-2% down from 255% during 1985-95	Current inflation rate 34% down from 875% during 1985-95	Current inflation rate 22% down from 25% in the past	Current inflation rate 42% down from 47% during 1985-95
cal Conditions	Nascent democracy with unstable past	Fifteen year old democracy run under coalition of political parties	Political instability due to guerrilla groups and drug cartels	Unstable democracy with military as the major power broker
structure	Under development	Under development	Poor infrastructure	Poor infrastructure
et for	Computers, equipments, automobiles, services etc.	Health care, environmental, and information technologies etc.	Food products, beverages, railways, transportation etc.	Telecommunication, computers, food products, medical equipments etc.

Instructional Techniques to Support the Documentation of Business Application Computer Programs

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Abstract

When completing their first computer programming project, some students have such a difficult and negative experience that they desire to change their major from MIS, and vow never to go near a computer again. In the vast majority of these cases, the students did not succeed because they did not follow the proper sequence of steps that are necessary to understand and complete the programming assignment. The primary reason for their failure is that the students did not complete the necessary documentation properly prior to writing the program code. This paper provides some techniques for documentation, including what documents to complete, in what sequence, and what steps must be executed to complete each document to help assure that the programming experience can be a successful venture for students.

Introduction

It is generally accepted in the computer programming environment that there are five steps in writing a program that must be performed in order to satisfy a user's desire for information. These steps are: (1) define the problem, (2) plan the solution, (3) write the code, (4) test and debug the code, and (5) provide the proper program documentation as these first four steps are completed.

In order to accomplish these necessary tasks for solving a computer application, "two" entities need to know how to solve the problem. The first entity, the human entity, including the user and systems analyst, must perform the first two steps, defining the problem, and planning the solution. Also, the fifth step, documentation is performed (external). Only after these three steps are completed properly by the human entity, can the programmer perform step three, writing the code. The code tells the computer, the second entity, how to solve the problem at hand.

If the human entity performs the tasks properly, resulting in the production of documents that make him knowledgeable about the problem's solution, the program code can be written and justified line by line by copying from the documentation.

However, in my experiences as an instructor, I have found that many students attempt to solve a computer application by first writing the code. Then, and only if required to do so by the instructor, they complete the documentation by copying from the program code. This technique results in the waste of valuable computer and human resources, including extensive compilation and execution time. Thus, the programming student is relying on a "trial and error" procedure for writing the code. He writes the code by copying from an example of similar code provided either in the textbook or by the instructor. In essence, the student cannot justify the code, and therefore does not know how to write a program properly.

This paper provides a detailed set of techniques for the student (the human entity) to follow in performing the first two steps in solving a computer application. Utilizing these techniques will result in the production of documents (Step 5) which, when completed in a sequential order, will provide the student with the ability to proceed from one step to another in a knowledgeable manner.

The techniques to be followed and the resulting documentation produced as each of the programming steps are performed are listed below.

Five Steps in Writing "ANY" Program

I. Define the Problem (Problem Analysis)

A. Definition
The application programmer defines the nature of the problem or understands what the program, he/she writes, is supposed to do.

B. Specification of the Problem
1. Received by the applications programmer from the systems analyst in the form of:
a. Sketch - a rough draft of the desired output which is completed as the systems analyst interviews the user.
b. Print Chart (PC) - a form which depicts the desired output centered perfectly. Place programmer-invented internal memory addresses on the PC for each edit code (see Appendix A).
c. Input Record Layout Form (IRLF) - a form which depicts the format of the data record to be read. Place programmer-invented internal memory addresses on the IRLF for each input field (see Appendix B).
d. System Flowchart - a form that uses symbols to represent the desired outputs of an entire system.
e. Decision Table - a form that depicts alternative actions to be performed based on different conditions that exist.
f. Miscellaneous Written Descriptions

C. Clarification of the specifications between the user, analyst, and programmer.

II. Plan the Solution

A. Definition
1. The applications programmer deciding what must be done in detail to solve the problem.
2. The applications programmer deciding what processing steps the input must go through in order to obtain the desired output.

B. Planning the solution includes:
1. Complete a Visual Table of Contents (VTOC) which is a form that shows the relationships that exist between modules and other processing steps. On this form blocks represent modules or major steps, and straight lines represent non-major steps (see Appendix C).
2. Construct a Program Flowchart,

which is a form that uses flowchart symbols to represent the processing steps necessary to convert the input into the desired output. Each block or module indicated on the VTOC is converted into a set of steps in the Program Flowchart (see Appendix D).

3. Perform a Trace, which is determining if the Program Flowchart is correct or not by tracing data through internal addresses in memory according to the steps in the flowchart, and seeing if the resulting report matches the desired report as depicted on the Print Chart. In order to perform a trace, first establish addresses, then trace values through the addresses (see Appendix E)

C. Basic steps included in a program flowchart designed to produce any business report:
   1. Perform the Initialization Steps
   2. Perform Until There Are No More Data Records
      Read A Data File
         At End of File
            Indicate There Are No More Records
         Not At End
            Perform Detail Processing which includes:
            1. Perform Process Headings, when necessary
            2. Perform Calculations (compare PC with IRLF)
            3. Perform Accumulations (examine PC)
            4. Perform Special Processing
            5. Write a Detail Line
   3. Perform Total Processing which includes:
      A. Perform Total Calculations, if necessary
      B. Print the Total Line(s)
   4. Perform The Termination Steps

III. Coding

A. Definitions
   1. Writing the code (source program) that is eventually translated into a machine language program (object program).
   2. Translating what is on the IRLF's, print charts, and program flowcharts into a language understandable to the computer, such as COBOL.

B. Steps in coding:
   1. Write the source program on coding sheets (one module at a time of code from beginning to end).
   2. Desk check
   3. Key the source program
   4. Desk check
   5. Attempt compilation
      a. If there are no errors, the object program is produced and testing is performed (RUN).
      b. If errors exist, debug and attempt compilation until no errors exist.

IV. Testing

A. Definition

Executing the object program on test data (RUN).

B. Steps performed in testing a program:
   1. Execute the object program.
   2. Compare the output from the run with the intended output (shown on print chart).
      Do they match?
      a. If yes, assume the program is correct.
      b. If no:
   3. Debug the source program or possibly check data file.
   4. Recompile the source program.
   5. Execute the object program again.

V. Documentation

A. Definition
Program documentation - the process of recording the facts concerning a computer program. Program documentation is necessary because of the changing nature of data processing requirements and company policies.

B. Program Documentation supports an understanding of the program for:
   1. Systems analysts
   2. Application programmers
   3. Maintenance programmers

C. Included in documentation:
   1. Specifications of program requirements
   2. Special layout forms for input and output
   3. Flowcharts
   4. Source listings
   5. Listing of the results of test data runs
   6. Miscellaneous narrative descriptions

Miscellaneous Definitions

1. Source program - the original program written on coding sheets by the applications programmer.

2. Object program - the machine language program that is produced by the computer compiling the source program.

3. Compiler program - machine-language program furnished by the manufacturer that enables compilation to be performed.

4. Compilation - the translation of a source program into an object program by a compiler program.

5. Execution - the object program processes the data and produces the desired result.

6. Desk checking - visually checking the source program before attempting compilation.

7. Listing of diagnostics - a listing of the errors in a source program that is produced when attempting compilation.

8. Debugging - process of eliminating the errors from your source program.

9. Source Document - a form which contains the original raw data that will be processed by the program.

10. Module - a set of instructions that accomplishes one part of the program.

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Are College Students Credit Card Savvy?

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Abstract

As each new school year begins tables stacked with tee shirts and other giveaways for students pop up like mushrooms around campus. All the students have to do to receive these goodies is to sign up for a credit card. Nearly two thirds of all college students currently have at least one credit card (Kelly, 1998), and CBS Evening News (July 1, 1997) reports that each semester five million credit card offers are sent out to college students. How well are these students handling this easy availability of credit? Perhaps not so well, as evidenced by the 1998 Student Loan Survey which reveals that almost half of all students who drop out of college do so because of concerns about debt levels. This statistic is of obvious concern to college administrators and has led some colleges to kick credit card marketers off campus (Consumer Reports, 1997), but this has not kept credit cards out of their students' hands. Since most colleges accommodate credit card marketers, and most students are able to easily obtain a credit card in any event, it is very important for colleges to ascertain whether most of their students are financially wise and knowledgeable enough to make their own decisions about the credit cards they use?

Introduction

Nearly two-thirds of college students possess at least one credit card in their own names and twenty percent have four or more cards (Consumer Reports, 1997). The U.S. Public Interest Research Group reports from its survey of 1,260 college students that their average credit card balance is $968. However, Nellie Mae, the New England Education Loan Marketing Corporation, reports average undergraduate credit card balances at closer to $2,200 (Commercial Law Bulletin, 1998). Visa USA and MasterCard insist that average student credit card debt is between $500-$600 (Merrick, 1998). The figures vary greatly, possibly because it is to the benefit of the credit card companies to understate student credit balances thereby reducing the perceived problem of excessive student indebtedness.

Background

Upon graduation, the College Board reports that the median student debt level was $15,000 for 1998-99 graduates (Olson, 1999). Nellie Mae reports that total average debt for graduates from public colleges in 1995-96 was $11,554, up nearly 35% in only three years from $8,536 in 1992-93 (Basinger, 1998). Clearly the debt that students are dragging with them beyond the ivy-covered walls is increasing rapidly and credit card debt is a significant part of that burden. How significant a problem it is depends on the student, but the number of students with high credit card debt upon graduation is not small. In the 1997-98 academic year 14% of all graduates carried between $3,000-$7,000 in credit card debt with them when they accepted their diplomas, which was up from only 7% the year before. Nearly 10% of graduates had credit card debt that exceeded $7,000 (Kelley, 1998).

The credit card companies claim that, far from being a problem, college students are among their best customers. While approximately 60% of credit card users in the general public carry a balance from month to month, only about 40% of college students do so (Rose, 1998; Kelley, 1998). The students themselves feel that having a credit card is a good idea. A 1995 Roper College Track Poll found that 65% of students and 88% of their parents said that credit cards are a good way to establish a credit history (Newton, 1998). The same poll found that 35% of students felt a card was necessary to meet emergency needs. But interestingly, only 18% of students thought a credit card was a good way to learn about financial responsibility while 82% of their parents thought so. Perhaps this explains why, instead of being used for emergencies, the cards are being used for late night pizza or weekend shopping excursions. The easy availability of credit cards exacerbates the problems of the 6% of college students who are classified as compulsive buyers because they do not see the money involved as 'real' money (Roberts, 1998).

Do students know enough about credit and finance to use their credit cards wisely? Even if we assume that college students know more about economics and finance than the general public that may be of little comfort. In early 1999 the National Council on Economic Education gave a test on economics and finance fundamentals to 1,010 adults (Brenner, 1999). The average grade was 57% with nearly half (49%) getting an 'F'. If college students know more than the general public, that might not be saying much. Even the credit card companies are showing some concern. Visa USA, MasterCard, and American Express are all now providing advice services and interactive web sites to assist students with their budgeting and financial concerns (Tribune-Review, 1997). Do college students know enough about the credit cards they use that they will be able to stay out of financial trouble?

Methodology

The study was designed as a cross-sectional survey of college students with the survey instrument being a self-administered questionnaire. The survey consisted of thirteen multiple choice questions concerning students' use of credit cards which were appended to a survey regarding the health related behaviors of the same students. Administration of the questionnaire took place during the 1997-98 academic year.

The students who completed the survey were enrolled at either Slippery Rock University of Pennsylvania or Clarion

University of Pennsylvania. The students from Slippery Rock were enrolled in a basic personal fitness course that is required of all students and thus represent a cross-sectional sample of the Slippery Rock undergraduate student body. There were 233 respondents from Slippery Rock. The students from Clarion University who completed the survey were enrolled in junior/senior level finance courses. There were 174 respondents from Clarion University.

The questionnaire answer sheet was created as an optical scanning form which was electronically read using Teleform software. This created a data base while eliminating both a source of data entry errors and the need for data entry verification. The data file was transferred to an SPSS database and checked for outliers and errors. The statistical analyses included cross-tabs and Chi-square analysis.

Results

The first question asked the students how many credit cards they owned in their own names (Figure 1). Nearly 30% responded that they owned three or more cards while 78% reported having at least one card. This is somewhat higher than the 67% of college students who have credit cards as reported by the popular media (Kelley, 1998). When asked if the interest rate on their cards was variable or fixed a surprising 35% did not know while about 2% did not understand the question (Figure 2). The survey reveals that 19% of the students do not even know what the actual interest rate is on their cards (Figure 3). This lack of knowledge is perhaps understandable since 53% of the students claim to pay off their balance each month (Figure 4). If this is true, then the credit card interest rate may be of little interest to those students. In addition, students may not care what interest rate they pay on credit card balances if they do not make those payments themselves. Yet, when asked who makes most of the payments on their credit cards, a full 78% responded that they do make the payments. Students were also asked what was the maximum credit limit they had on any single card (Figure 5). The vast majority, 84%, reported a limit of $5,000 or less, while 10% had a limit above that. But 6% did not know their limit, which can be dangerous given the high fees charged by some card companies for going over the limit (Newsweek, 1999).

In a comparison of the business students surveyed against the non-business students, nearly twice as many non-business students did not know if their interest rate was variable or fixed compared to business majors (46% v. 26%; $p<.05$). A greater percent of non-business majors did not know the interest rate on their cards compared with business majors who did not know (22% v. 16%; $p<.01$).

Most of the students surveyed, nearly 61%, reported that they had not used their credit cards to obtain a cash advance. Of those who had used their cards for a cash advance, only about 25% of them knew that interest begins to be charged immediately on cash advances. Nearly half (45%) who had obtained a cash advance did not know when interest began to be charged and another 30% gave an incorrect answer (Figure 6). This means that more students thought they knew when interest begins to be charged and were wrong than the number of students who knew that interest is charged from the day of the cash advance.

In addition, among the students who had obtained a cash advance, twice as many non-business majors did not know when interest began to be charged (22% v. 11%; $p<.001$). Among all students who answered this question with a choice other than "don't know," only twenty nine students answered correctly that interest begins to accrue immediately on cash advances. Of these, there were significantly more business majors who knew the correct answer, (N=25 v. N=4; p<.001). Still, only 44% of business majors who had used their cards for a cash advance answered correctly.

Students were also asked about their personal liability if their card is lost or stolen and used without their permission (Figure 7). The majority of students with credit cards (52%) did not know what their liability would be in such a case and 29% thought they would not have any liability. As a matter of fact, only 14% who have a card know that their maximum liability for unauthorized use of their card was $50. Note that more than twice as many students believed incorrectly that they would not be liable for any unauthorized charges. There was no significant difference between business and non-business students in their answers to this question.

Another somewhat alarming fact is that one third of the students with credit cards did not know if there were credit reports on them that were available to them (Figure 8). Also, nearly 14% of the students with credit cards did not know if there was an annual fee paid for their cards (Figure 9). However, this may be explained by the possibility that these are the same students who do not make their own credit card payments. Here again there were many more non-business students who did not know if their cards have an annual fee than the number of business students who did not know (22% v. 5%; p<.001).

Each question was tested to see if there were any significant differences in the ways that the men and women answered. Neither men nor women were significantly more knowledgeable on any aspect of credit card use covered in the survey. Perhaps it would be more accurate to say that the men and women respondents were equally clueless.

Conclusions

With almost half of all students who drop out of college doing so because they are concerned about their personal indebtedness (1998 Student Loan Survey), and with average debt levels of college students rising rapidly (Basinger, 1998), credit card debt might have an important negative impact on enrollment. Men and women students were equally ignorant of the facts about the credit cards they use. Although business majors fared better (in a statistical sense) in a few areas than the non-business majors, the overall lack of knowledge among business majors was still significant if not alarming.

There are a few things that might be done to help stem the tide of rising student debt and the bad consequences that follow. Colleges may want to include information on credit cards in the first year orientation classes required of all new students. Consumer finance classes are offered on many campuses which could be made more widely available to the general student population. Counseling centers on campus should provide debt counseling services or at least referral services to local consumer debt assistance centers. And finally, college administrations might follow the lead of some campuses and prohibit, or at least become less accommodating to, credit card marketers and marketing on campus.

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