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Special Issue: International Business

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These achievements could not have been realized without the outstanding performance of our faculty and staff as well as the dedication of our friends inside and outside the university.

YORAM NEUMANN

**JOURNAL OF BUSINESS
AND MANAGEMENT**

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FROM THE EDITOR'S DESK

The JOURNAL OF BUSINESS AND MANAGEMENT proudly presents its first special issue in international business. The growing impact and importance of international business is reflected not only in the global marketplace, but also in business curricula and scholarly inquiry. This issue's articles present a broad-based sampling of international business topics.

Stress related disability claims have risen by more than 700 percent over the past five years in the United States, totaling \$150 billion annually. A study by **GOLNAZ SADRI, GEORGE A. MARCOULIDES, CARY L. COOPER** and **BRUCE KIRCALDY** empirically investigates the generalizability of a previously validated model of occupational stress. Using data from the United States, Great Britain and Germany, the study demonstrates that models of occupational stress process can be generalized on an international level.

As globalization of business gains momentum, the importance of cross-cultural negotiations becomes more evident. Potential problems arise from nonverbal cues with divergent cultural meanings. **JACQUELINE MAYFIELD, MILTON MAYFIELD, DREW MARTIN** and **PAUL HERBIG** examine the nonverbal dimension of cross-cultural negotiations and provide recommendations for success.

Although a lot has been written about the North American Free Trade Agreement, little attention has been given to the cultural differences among the participants, particularly the United States and Mexico. **ERIC G. KIRBY, SUSAN L. KIRBY** and **DOUGLAS W. LYON** study the nature of these differences. It is found that the acceptance of foreign nationals by Americans is directly related to the individualistic nature of their home country's culture.

Most observers agree that implementation is key in the success of total quality management (TQM) programs. **ASBJORN OSLAND** compares and contrasts two different approaches to TQM implementation in Central

America, with significantly different results. In accounting for the differences, perceived managerial commitment to TQM appears to stand out.

KAMEL E. GHORAB surveys bank managers in the United Arab Emirates to ascertain the reasons for, and perceived problems of, automating banking operations. The findings indicate that in addition to creating competitive advantage, the managers sought such long term goals as increased business volumes and asset bases.

FRANK STRIER
BURHAN F. YAVAS

TESTING A MODEL OF OCCUPATIONAL STRESS ACROSS DIFFERENT COUNTRIES†

Golnaz Sadri ·
George A. Marcoulides ·
Cary L. Cooper ···
Bruce Kirkcaldy ····

The present study examines the generalizability of a previously validated model of occupational stress across three different countries: Great Britain, United States, and the Federal Republic of Germany. Data were collected from 464 individuals employed in professional positions in the three countries. The results demonstrate the invariance of the proposed model of stress, where personality and coping strategies were shown to precede and determine the perception of job stressors which, in turn, were shown to have an impact on the well-being of the individual. Implications of the findings for research and practice are outlined in the concluding sections.

Occupational stress may be defined as a situation wherein factors interact with a worker to change (i.e., disrupt or enhance) his/her psychological and/or physiological condition,

† An earlier version of this paper was presented at the 1994 Meeting of the Academy of International Business, San Francisco, CA.

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such that the person is forced to deviate from normal functioning (Beehr and Newman, 1978). The National Institute for Occupational Safety and Health (NIOSH) rates stress as one of the ten leading work-related diseases (Minter, 1991). Occupational stress-related expenses in the United States currently total more than \$150 billion annually. Stress-related disability claims in the United States have risen by approximately 700 per cent over the past five years with the direct cost of resolving a single stress claim estimated at between \$10,000 and \$15,000 (Stevens, 1992). In Britain, the cost of stress-related illness is estimated at approximately 10 per cent of the gross national product per annum. The British Heart Foundation calculates that for a company of 10,000 employees, lost productive value from stress-related heart disease will add up to 73,000 working days, 42 employees and 2.5 million pounds per year.

A considerable amount of research has been devoted to the topic of occupational stress. To a large extent, much of the occupational stress research has adopted an interactionist perspective where stress is seen as a product of the relationship between a person and his/her environment (Caplan, Cobb, French, Van Harrison & Pinneau, 1975; Greenhaus & Parasuraman, 1987; Lazarus, 1991; Stogdill, 1974). Personal variables include both aspects of individual personality (e.g., Type A behavior, Locus of Control, Negative Affectivity) and methods of coping (e.g., exercise, drinking, social support), while environmental variables are depicted as a range of potential stressors. The eventual outcome of the person-environment interaction is likely to affect, in turn, the person (either physiologically, psychologically, or behaviorally) and his/her environment (Beehr & Newman, 1978; Cooper, 1986; Cooper, Cooper & Eaker, 1988; Cooper & Payne, 1978; Greenhaus & Parasuraman, 1987; Robbins, 1993).

Recently, a considerable number of studies have focused on occupational stress in various countries. For example, a series of studies assessing executive stress across 11 countries (Sweden, Germany, United States, South Africa, Britain, Japan, Singapore, Nigeria, Brazil, Egypt and New Zealand) found that executives from countries undergoing large economic and social change (i.e., Egypt, Brazil, Nigeria, Singapore) showed the highest mental ill-health scores, while the more developed countries (i.e., Sweden, New Zealand, Germany, United States) showed lower levels of anxiety, depression and psychosomatic tendencies. Patterns of job dissatisfaction tended to mirror the mental health findings. Executives from Egypt, Brazil, Japan and Singapore, respectively, expressed the highest levels of job dissatisfaction and executives from New Zealand, Germany, Sweden, and South Africa expressed the lowest levels of job dissatisfaction (Cooper, 1984; Cooper & Hensman, 1985; McCormick & Cooper, 1988). A study of 118 European executives showed that 25 percent of the sample believed that they were at substantial risk of job burnout (physical and emotional exhaustion) and at high risk from heart disease (Cooper & Sutherland, 1991). Kirkcaldy and Cooper (1994) compared senior police officers from Berlin and Northern Ireland and found that the German officers showed higher levels of stress (especially at the levels of home-work interface and career and achievement) and used a greater variety of coping strategies than the officers in Northern Ireland.

While these types of cross-country comparisons are interesting, they convey little information about the generalizability of the process of occupational stress across different countries. A number of studies have addressed this issue. For example, a comparative study of American and Indian salespersons showed that the effect of formalization on role stress, organizational commitment and work alienation was different. Overall, the American sample reacted more negatively to organizational formalization than the Indian sample. Both job codification and rule observation had a greater dysfunctional influence on role ambiguity for salespersons in the U.S. than in India. Rule observation had a stronger negative influence on role conflict for the American sample than for the Indian sample (Agarwal, 1993). A study of German and British managers showed some absolute differences between the two countries (e.g., German managers expressed higher sources of job-related pressure, higher levels of coping and significantly better mental health); however, the nature of relationships amongst variables was replicated across both national groups (Kirkcaldy & Cooper, 1992). The present study aims to extend the initial study by Kirkcaldy and Cooper (1992) by examining the generalizability of a previously validated model of occupational stress (Sadri and Marcoulides, 1994) across three countries: Great Britain (Britain), United States (U.S.), and The Federal Republic of Germany (F.R.G.). We aim to examine the cross-cultural applicability of a model of the stress process.

A Model of the Stress Process

Cooper and Baglioni (1988) and Robertson, Cooper and Williams (1990) found empirical support for an indigenous model of stress, where personality and coping strategies preceded and determined the perception of job stressors which, in turn, had an impact on the mental well-being of the individual. Sadri & Marcoulides (1994) provided empirical support for an extended version of this model of stress, shown in Figure 1.

Figure 1 indicates that there are three sets of latent variables included in the model, called (i) Precursors of Stress, (ii) Stressors and (iii) Outcomes. Multiple observed indicators were used to measure all of the latent variables included in the model as prescribed in the literature (e.g., Harris & Schaubroeck, 1990).

Precursors of Stress

Figure 1 shows three latent variables that may be considered precursors of stress: Type A behavior, Locus of Control and methods of coping.

Type A Behavior. Type A behavior, characterized by a chronic sense of time urgency and an excessive competitive drive, shows a clear link with stress-related outcomes. Type A individuals underestimate the time required to accomplish tasks and therefore, experience time pressures. They work quickly and show impatience and decreased work performance if forced to work slowly. Type A's ignore, suppress, or deny physical or psychological symptoms while

working under pressure, and report such symptoms only when the work is finished. They work harder and experience physiological arousal when a task is perceived as challenging; express hostility and irritation in response to a challenge or threat; and need to be in control of the immediate environment to such an extent that a lack of control may elicit a hostile, competitive response (Friedman & Rosenman, 1974; Froggatt and Cotton, 1987; Ganster, Sime & Mayes, 1989; Williams, 1989).

Locus of Control. Locus of Control (LOC) is represented by a continuum with individuals who believe that they are masters of their fate falling on the internal side of the continuum and those who believe that their lives are reliant on luck, chance, fate or powerful others falling on the external side (Rotter, 1966). A number of studies imply that internals perceive their jobs to be less stressful than do externals. Internals report fewer psychological strains resulting from job specificity; fewer somatic complaints as a result of role conflict; and are less likely to respond to normal organizational frustrations with aggression, sabotage, or withdrawal than are externals (Anderson, Hellriegel and Slocum, 1977; Fusilier, Ganster and Mayes, 1987; Gemmill and Heisler, 1972; Marino and White, 1985; Storms and Spector, 1987).

There is a distinction in the literature on LOC between state and trait measures of control (Parkes, 1984). Trait measures like that designed by Rotter represent a *generalized* belief about the extent to which important outcomes are controllable (Rotter, 1966). The measure used in the present study represents a state measure, or a subjective appraisal of control of the individuals' work situation and has demonstrated a relationship with important aspects of the individual's work experience and well-being (Rees & Cooper, 1992).

Coping Methods. Coping refers to behavior that mediates the impact that societies have on their members through protecting people from being psychologically harmed by problematic social experience (Pearlin & Schooler, 1978). The present model suggests that there are likely to be individual differences in the methods that people adopt to cope with given situations and that the coping alternatives that are perceived to be available to each person will affect his/her subsequent perception of stressful events. There is prior evidence that coping is an active, continuous force, shaping what will occur during subsequent coping episodes and that individuals are relatively consistent in the coping strategies which they adopt (Cohen & Edwards, 1988; Dolan & White, 1988; Fleishman, 1984). Research also indicates that the mere existence of forms of coping, such as social support networks (irrespective of whether or not they are used), serves to act as a buffer against stress (Cummings, 1990; House, 1981; Jayaratne, Himle & Chess, 1988).

For the present project, six methods which people commonly adopt to cope with work stress are measured: (i) Social support (the degree to which individuals rely on others as a means of coping with stress); (ii) task strategies (the degree to which individuals cope through strategies directed at reorganizing their work, such as planning ahead, setting priorities, and delegating);

(iii) logic (coping through attempts to be rational and handle situations in an objective manner); (iv) home and work relationship (the extent to which home is viewed as a refuge, and the existence of interests and activities that a person engages in outside of work); (v) time (the individual's use of time, e.g., whether he/she deals with problems immediately rather than stalling); and (vi) involvement (the degree to which the individual forces himself/herself to come to terms with reality, through strategies like recognizing his/her limitations, being able to release tension, and concentrating on specific problems).

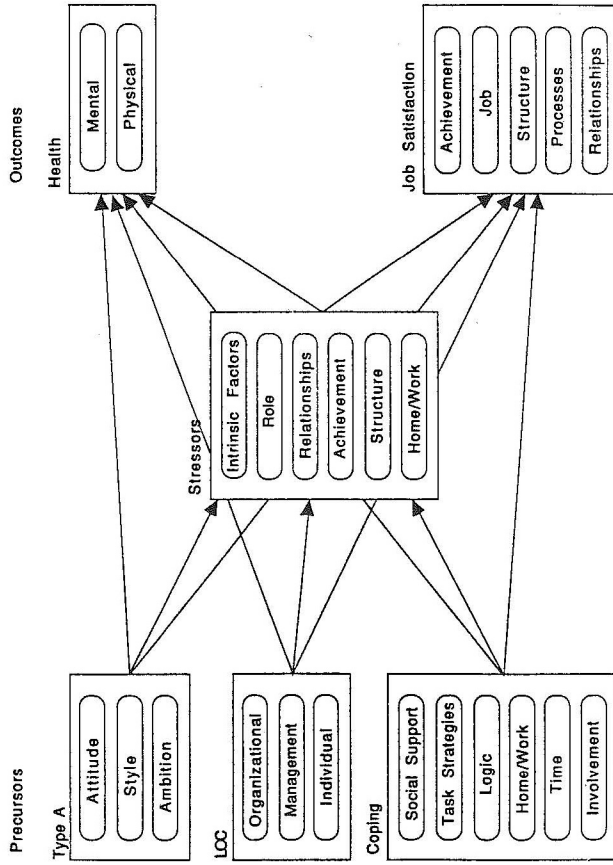
Stressors

There is a range of environmental factors, in the workplace and at the work-nonwork interface, which have been linked to stress-related outcomes (Cooper, 1986; Cooper & Marshall, 1976; Frew & Bruning, 1987; Jackson & Schuler, 1985; Van Sell, Brief & Schuler, 1981). The present study examines six potential sources of stress. These include stress arising from: (i) factors intrinsic to the job, e.g., having too much work to do, and having to work long hours; (ii) a lack of power and influence, ambiguity, conflicting tasks and demands arising from multiple roles that the individual plays; (iii) relationships with other people, such as coping with office politics, having to supervise others, lack of support from colleagues, and lack of encouragement from superiors; (iv) how valued people feel and whether or not they are satisfied with their opportunities for advancement at work; (v) the structure or climate of an organization, in terms of inadequate guidance from superiors, poor quality training and development programs, evidence of discrimination or favoritism; (vi) the home/work interface, which may include things like having to take work home, or inability to forget about work when the individual is at home.

Outcomes

The experience of stressful events might result in one or all of three types of outcomes: physiological, psychological and behavioral (Beehr & Newman, 1978; Cooper & Marshall, 1976; Steffy & Jones, 1988). The present study examines stress-related outcomes on all of these levels. Physiological symptoms measured include headaches, indigestion, shortness of breath, increases in blood pressure, feelings of exhaustion. Psychological manifestations of stress include aspects of mental health (such as inability to think clearly, feeling restless, and irritability) and work-related attitudes (i.e., job satisfaction). Five aspects of job satisfaction are included in the study: (i) the extent to which one is valued and opportunities for growth; (ii) aspects of the job itself (e.g., security); (iii) organization design and structure; (iv) organizational processes (e.g., supervision); and (v) relationships with other (e.g., peers, superiors, subordinates). Behavioral outcomes assessed include changes in eating, drinking, smoking patterns and sleeplessness.

Figure 1: Proposed Model of Link between Personality, Coping, Stressors & Outcomes



Cross-Cultural Predictions about the Model

In attempting to determine whether the model of stress depicted in Figure 1 might differ across the three countries, it becomes necessary to examine the extent to which the cultures themselves vary. While we acknowledge the presence of minority cultures within each of the countries included in the present study, the present review is concerned with the dominant/mainstream cultures which emerge from these countries. Few studies have been conducted on differences between the countries included in the present study. In a study of British and German college students, Kirkcaldy, Furnham and Lynn (1992) found that the British sample showed a higher work ethic, achievement motivation, competitiveness and tended to prefer business-oriented occupations rather than the professions (medicine, social work and teaching). Furnham, Kirkcaldy and Lynn (1994) found that samples from North and South America scored higher than those from European countries on work ethic and mastery. Empirical research on differences across a broader range of countries is even more scarce. One notable exception is the study conducted by Hofstede who surveyed 116,000 employees in 39 countries, all working for the same multinational corporation (Hofstede, 1984, 1991). Hofstede's study showed that four dimensions of national culture had a major impact on employees' work-related values and attitudes: Power Distance, Uncertainty Avoidance, Individualism versus Collectivism, and Masculinity versus Femininity (also referred to Quantity versus Quality of Life, Robbins, 1993). Comparing the three countries included in this study (Britain, F.R.G. and U.S.) across these dimensions identifies a number of similarities and differences. On the two dimensions of Power Distance (the pattern of interpersonal relationships when differences in power are perceived) and Masculinity versus Femininity (the degree to which countries value the acquisition of money, material things, and assertiveness [masculine] as opposed to meaningful relationships and the overall quality of life [feminine]), the U.S., Britain and F.R.G. exhibit very similar patterns. All are below average on Power Distance and above average on Masculinity. The dimension of Uncertainty Avoidance (the extent to which people are threatened by ambiguous situations or stimuli and have beliefs and institutions that help them to avoid this uncertainty) identifies one major difference in the three cultures examined here: the U.S. and Britain are both below average whereas Germany is above average on this construct. The dimension of Individualism (the extent to which individuals are concerned with the welfare of themselves and their immediate family as opposed to the welfare of the group) also identifies a slight departure in German culture from that found in the U.S. and Britain. The latter two are both very high on this dimension while the F.R.G. is much lower, although still above average.

There are a number of other labels which appear useful in explaining cultural differences which we would like to consider here. The first of these is high-context vs. low-context. In high-context cultures, people rely heavily on situational cues such as status or position for meaning when communicating with others. In low-context cultures, written and spoken words are heavily relied upon in important communication. The U.S., F.R.G and Britain are all classified as low-context cultures (Dulek, Fielden & Hill, 1991). A second cultural difference factor is

reflected in perceptions of time – monochronic vs. polychronic. Monochronic cultures adopt an ordered, precise, schedule-driven use of time. Northern Europeans and North Americans use this type of orientation. Polychronic cultures like the Mediterranean, Latin American and Arab adopt a more cyclical view of time, engaging concurrently in activities with different people (Moore, 1990). A third factor is that of interpersonal space. People from high-context cultures typically stand closer to another person when engaging in interpersonal communications whereas people from low-context cultures (like Britain, the F.R.G. and the U.S.) tend to prefer a greater degree of interpersonal space (Hall, 1966). A fourth and final factor which reflects a somewhat similar pattern across the three countries under present study is that of religion. In comparing five of the major religious affiliations adopted internationally (Catholic, Protestant, Buddhist, Muslim and no religious preference), the three affiliations of Catholic, Protestant and no preference would appear to be well represented in all three countries and the remaining two affiliations of Buddhism and Muslim much less well represented (Kreitner & Kinicki, 1992).

In summary, it would appear that the three countries involved in the present research (Britain, U.S. and F.R.G.) have largely similar patterns of dominant cultural beliefs, values and practices. Therefore, we hypothesize that the causal flow of the stress process will be replicated across these cultures.

METHOD

Subjects

Data were collected from 464 individuals occupying professional positions in the U.S., Britain and F.R.G.: 235 in the U.S., 123 in Britain and 106 in the F.R.G. The U.S. data was collected from professionals employed in diverse companies within the Southern California Orange County area. Approximately 40 percent of the data was collected as part of a series of university management education seminars attended by participants, the response rate for this portion of the data was 90 percent. The remaining 60 percent of the data was collected from respondents at four different worksites for research purposes, including two manufacturing companies, a waste management organization and an insurance company. The response rate across the four sites averaged at 57 percent. The British subjects were drawn from executive management programs being run in British university business schools. The subjects were middle and senior managers employed by a number of diverse companies in Britain, occupying a variety of occupations (including marketing, general management and production management). The response rate for the British sample was approximately 85 percent. The majority of the German sample were also middle and senior executives enrolled in executive management programs in Liblar. A small number of subjects were drawn from diverse companies in the North-Rhine Westfalia area of Germany. The response rate for the entire German sample averaged at approximately 80 percent. The sample from Germany also held a

range of different positions, including operations management, information technology, sales and marketing, research and development, quality assurance and human resourcing.

Across the entire sample, 70 percent are male and 30 percent female. The median age of the sample is between 21 and 36 (61 percent); 32 percent were aged 37-55; two percent were under 21 and five percent over 55 at the time of data collection.

Questionnaire

All variables were measured using the Occupational Stress Indicator (O.S.I.) which consists of 167 variables and has been shown to be reliable and related to managerial and professional occupations (Cooper & Marshall, 1976; Cooper, Sloan & Williams, 1988; Kirkcaldy & Hodapp, 1989; Schuler, 1980). The O.S.I. is made up of six questionnaires, which measure different dimensions of stress: Type A personality (14 items); locus of control (12 items); coping strategies (28 items); sources of pressure (61 items); job satisfaction (22 items); and current state of health (30 items). The questionnaire took approximately 35 minutes to complete. Descriptions of the observed variables grouped according to the constructs they are proposed to measure are provided in Appendix A. The observed variables are paraphrased from the original questionnaire used in the study (Cooper et al., 1988). The same version of the questionnaire was used for the U.S. and British samples. For the German sample, the questionnaire was translated into German by a native German psychologist with experience in the research in the field of psychology and then was back-translated into English by the fourth author to check for accuracy.

RESULTS

This study attempted to determine whether there is or is not a difference in the structure of the model of occupational stress across managers from three countries. If the model is not similar, to what degree does it differ and how? In the methodological literature, tests of these hypotheses are generally referred to as testing the invariance of a proposed model. The value of any proposed model is greatly enhanced if the same model can be replicated in samples from similar and from different populations (Heck & Marcoulides, 1989).

The invariance of the model of the occupational stress process was tested in this study using LISREL VIII (Jöreskog & Sörbom, 1993). In the LISREL approach to testing invariance, the same model is fit to covariance matrices from the different groups. The fit of the model is subsequently examined in order to determine whether the model and the parameter estimates of the model are the same across the different cultural groups.

Assessment of the fit of the model across the three countries in the present study was based upon several criteria. Statistical criteria include the goodness of fit index (GFI), the root mean square residual (RMR), and the ratio of the chi square to degrees of freedom (χ^2/df). Practical criteria include the Bentler and Bonett (1980) normed index (NFI). Selection of these indices to test the model was based on their widespread use and their usefulness in comparing samples of unequal sizes (Marsh, Balla & McDonald, 1988).

Table 1
GOODNESS OF FIT INDICES

Index	Value		
	U.S	U.K.	FRG
Goodness-of-fit index	0.93	0.94	0.95
Chi-Square: degrees of freedom ratio	1.95	1.00	0.79
Root Mean Square Residual	0.08	0.07	0.07
Normed Fit Index	0.93	0.90	0.92

Table 1 presents the criteria describing the fit of the proposed model of stress. The assessment of the fit of the model to the data from each country is revealed by examining the goodness of fit index, the root mean square residual, the ratio of the chi square to the degrees of freedom, and the normed index. It is generally recognized that GFI and NFI values above .90 indicate a satisfactory model fit. For this model these indices all suggest a reasonably good model fit. The GFI and NFI can be considered measures of the relative amount of variance and covariance in the data accounted for by the proposed model. On the other hand, the root mean square residual is a measure of the average unexplained variances and covariances in the model. This index should be close to zero if the data fits the model. The observed RMRs are all very small, indicating that very few of the variances and covariances are unexplained by the proposed model. A ratio of the chi-square to the degrees of freedom ranging from one to five also indicates a reasonable fit of the model, although recent research indicates that this ratio should be closer to two (Byrne, 1989; Wheaton, Muthen, Alwin & Summers, 1977). In this study the observed ratios are 1.95, 1.00 and 0.79 for the U.S, Britain and F.R.G. respectively. Finally, parameter estimates with t-ratios that are greater than two are considered to provide evidence that the parameter is significantly different from zero and important to the proposed model. Estimates of the direct and indirect effects of the variables in the model were also tested through t tests, and all parameters were found to be significant ($p < .01$). Given the variety of tests that were used to assess the fit of the model, we would consider that the model fairly accurately accounts for the observed variability in the data from each country.

Table 2
PROPORTION OF VARIANCE EXPLAINED BY THE MODEL FOR EACH OUTCOME VARIABLE

COUNTRY	JOBSAT	HEALTH
U.S.	59%	63%
U.K.	47%	77%
F.R.G.	40%	45%

A second goal of the analysis in this study was to estimate the relative strength of the proposed variables in explaining the stress process and to assess how much variance in the outcomes can be accounted for by the theoretical model. Table 2 presents the proportion of variance in the outcome variables (job satisfaction and health) accounted for by the variables included in the model for each country. As can be seen, a large portion of the variability in health can be accounted for. Similarly, almost half of the variability in individuals' job satisfaction can be accounted for by the other variables measured as part of the study across each of the three countries included in the analysis.

Table 3
PARAMETER ESTIMATES FOR STRUCTURAL EQUATIONS OF CONSTRUCTS

	STRESSORS	JOBSAT	HEALTH	TYPE A	LOCUS	COPING
STRESSORS	--	--	--	0.37	0.51	0.02
JOBSAT	0.07	--	--	-0.32	-0.67	0.26
HEALTH	0.26	--	--	0.27	0.59	-0.38
STRESSORS	--	--	--	0.17	0.41	0.02
JOBSAT	0.15	--	--	-0.18	-0.70	0.07
HEALTH	0.36	--	--	0.50	0.79	-0.27
STRESSORS	--	--	--	0.14	1.45	0.16
JOBSAT	0.03	--	--	-0.42	-0.39	0.08
HEALTH	0.38	--	--	0.13	0.28	-0.36

Table 3 presents the parameter estimates for the contribution of each latent variable in the model for each country. As can be seen, there are some small differences in the relative importance of each variable in the model. Although none of the observed differences reach a

level of statistical significance, a brief review of the findings for each country may be of interest. For the U.S., the greatest predictor of perception of stressors, job satisfaction and health-related outcomes is locus of control. Locus of control is also the best predictor of perception of stressors, job satisfaction and health for the British sample included in the present study. For the German sample, the results are slightly different: while locus of control emerges as the best predictor of perception of stressors, type A behavior emerges as a better predictor of job satisfaction and coping appears to be the best predictor of health-related outcomes. The slight difference in observed results for the German sample mirrors previous findings about the degree of variability of the three cultures included here from one another (Hofstede, 1984).

DISCUSSION

The reality of working in multicultural environments, in multinational companies and in a global marketplace have made an understanding of potential cultural differences imperative. Over the past decade, researchers have been trying to determine whether the effect of stress on an individual's well-being is universal or whether cultural values have a mediating effect. This study examined the generalizability of a model of stress across three different countries (Britain, U.S. and F.R.G.). Overall, the results indicate that the model of occupational stress does not differ across the three groups. The present research helped to enhance our understanding of the applicability of the dynamics of workplace on a more global level by examining the influence of personality and coping strategies on the perception of job stressors and in turn, their combined impact on the well-being and job-related attitudes of the individual. Results from the study support the generalizability of the model (shown in Figure 1) across the American, British and German dominant cultures. The present results convey a number of implications for how managers of international as well as national organizations conceptualize and try to cope with workplace stress.

The present results showed that personality (Type A behavior and LOC) determine the perception of stressors and subsequently affect the mental and physical well-being of the individual and his/her job satisfaction. The methods of coping adopted were found not to affect the perception of stressors but they were found to have an impact on the health (physical and mental) and attitudes of respondents. The fit of the proposed model lends support to the assertion that the variables affecting occupational stress can be determined and measured.

One of the important findings from this study is that stress is a function of both individual and organizational factors and implies that attempts to cope with the problem need to focus on the environment as well as the individual. These results help to remove some of the ambiguity that has typically been associated with interpretations of stress-related outcomes where managerial personnel often view stress as a function of maladaptive personal lifestyles whereas labor representatives depict stress as a consequence of organizational structure and design

(Neale, Singer, Schwartz and Schwartz, 1982). The present results indicate that increases in perceptions of stress have a significant effect on the mental and physical ill-health of the individual. If organizations do not attempt to minimize the negative impact of work stress, it is likely to result in severe outcomes for both employee and employer. The issue of stress-related disability legislation is one example of the types of problems that are likely to become more apparent if organizations do not take a proactive stance against workplace stress (Stevens, 1992).

A second very significant finding from the present results is the emergence of LOC as the strongest predictor of perceptions of stress for each of the three countries surveyed. Respondents who indicated a more external LOC also indicated a higher incidence of workplace stressors. For the British and American samples, LOC also emerged as the best predictor of job satisfaction and both mental and physical ill-health, with an external LOC resulting in lower satisfaction and poorer levels of health. While this is consistent with the existing literature on LOC (Anderson et al., 1977; Fusilier et al., 1987; Gemmill & Heisler, 1972; Spector, 1987), it is important to emphasize that the LOC scale contained in the OSI is a state measure. It examines feelings of control over the work environment as opposed to generalized feelings of control. Clearly, there is much that organizations can do to give people more control over the immediate work environment. For example, managers can provide more information to employees on relevant issues such as assessment procedures, company policies and regulations, organizational change and how this is likely to affect individual employees. Previous studies have shown that attempts to increase worker control over the work environment through participation in decision-making, increased job autonomy and increased autonomy over work schedules resulted in positive individual and organizational outcomes (Jackson, 1983; Pierce & Newstrom, 1983; Wall & Clegg, 1981). Future studies will need to assess how this type of information can best be communicated in different cultures (for example, low-context as opposed to high-context cultures).

A third important finding which emerges from the present research is the role of coping in the occupational stress model. Methods of coping, in all three cultures, appeared to have little effect on the perception of job stressors, yet they did help to prevent the symptoms of ill-health.

While it has been suggested that all methods of stress management have the same basic objective of assisting people to minimize their dysfunctional experiences (Matteson & Ivancevich, 1987), there are different ways of categorizing such techniques. For example, stress management may be individual-focussed (refers to actions taken by individuals) or organization-focussed (refers to actions taken by management). DeFrank and Cooper (1987) list the following individual-focussed strategies: relaxation techniques, cognitive strategies, biofeedback, meditation, exercise, EAPs, time management. Research on the benefits of such programs again shows very positive results in terms of the mental and physical health of the employee and his/her work behavior (Cooper & Sadri, 1991; Cooper, Sadri, Allison &

Reynolds, 1990). The following are classified as organization-focussed strategies: adapting organization structure, selection and placement, training, altering physical and environmental job characteristics, emphasizing health concerns and resources, job rotation (DeFrank & Cooper, 1987). An alternative way of conceptualizing stress management strategies is whether the technique emphasizes stressor reduction (primary), stress management (secondary), or a curative approach such as counseling (tertiary; Murphy, 1988). A systematic approach to minimizing stress at all levels (i.e., primary, secondary and tertiary), is likely to be most productive for today's diverse workforce. Results from the present research suggest that primary, organization-focussed strategies such as increasing the level of worker control over the environment are likely to lead to the most positive long-term outcomes.

Results from the present study also indicated that Type A behavior plays an important role in the model of stress. For the present sample, Type A's experienced more pressure, lower job satisfaction, and higher levels of ill-health (mental and physical). Again, this corroborates previous findings on Type A behavior (Froggatt & Cotton, 1987; Ganster et al., 1989; Zylanski & Jenkins, 1970). In terms of stress management, employees may be encouraged to try to limit the dysfunctional aspects of their Type A behavior (e.g., high competitiveness, high hostility). Since most organizational psychologists now accept the importance of environmental and situational factors as determinants of behavior (Robbins, 1993), we suggest that an organization can assist in this process by fostering a culture that is more collaborative than competitive. An interesting path for future research would be to determine whether a more collectivistic cultural orientation might assist organizations in this type of endeavor.

The present study has shown that models of the occupational stress process can be generalized on an international level and that structural equation modeling techniques provide a vital link in this type of research. Further research of this nature is needed across more cultures. Of particular interest would be the replicability of the model with samples from very diverse cultures. Future research on a model of this nature might also utilize additional variables: hardiness and negative affectivity would be good personality variables to include; turnover, absenteeism and productivity would be appropriate behavioral variables and self-esteem and self-efficacy would be appropriate psychological measures. The present research represents an initial step toward evaluating the generalizability of a model of occupational stress across different countries. The present results bear both methodological and substantive implications for future research across international boundaries. Structural equation modeling techniques can make a significant contribution to future research questions concerning the comparison of workers from various countries.

Appendix A

Observed Variables Included in Study

Type A Personality (14 items - 3 subscales)

- X1: Attitude to living, e.g., ambition, desire for career progression
- X2: Style of behavior, e.g., impatience when listening to another
- X3: Ambition, e.g., competitiveness

Locus of Control (12 items - 3 subscales)

- X4: Control over organizational forces, e.g., importance of upper management
- X5: Control over management processes, e.g., influence of hard work on performance appraisals
- X6: Individual influence e.g. belief in luck, chance, fate

Coping Strategies (28 items - 6 subscales)

- X7: Social support, e.g., seeking advice from superiors
- X8: Task strategies, e.g., reorganizing work
- X9: Logic, e.g., attempting to approach problems objectively
- X10: Home and work relationship, e.g., activities outside of work
- X11: Time management, e.g., forcing oneself to slow down
- X12: Involvement, e.g., recognizing one's limitations

Sources of Pressure (61 items - 6 subscales)

- Y1: Factors intrinsic to the job, e.g., having too much to do
- Y2: The managerial role, e.g., lack of power and influence
- Y3: Relationships with other people, e.g., having to supervise others
- Y4: Career and achievement, e.g., overpromotion
- Y5: Organizational structure and climate, e.g., inadequate guidance from superiors
- Y6: Home/work interface, e.g., having to take work home

Job Satisfaction (22 items - 5 subscales)

- Y7: Satisfaction with achievement, value and growth, e.g., how much one's efforts are valued
- Y8: Satisfaction with the job itself, e.g., job security
- Y9: Satisfaction with organizational design and structure, e.g., communication flow
- Y10: Satisfaction with organizational processes, e.g., style of supervision
- Y11: Satisfaction with personal relationships, e.g., peers

Current State of Health (30 items - 2 subscales)

- Y12: Mental health, e.g., changes in self-confidence at work
- Y13: Physical health, e.g., sleeplessness

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THE NONVERBAL DIMENSION IN CROSS- CULTURAL NEGOTIATIONS

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As the global economy becomes more entrenched and the importance of internationalization becomes evident to American businesses, the number of contacts with foreign agents will escalate. Regardless of the type of exchange (from wheat to software), the end result is often cross-cultural negotiations. This paper examines the dimension of nonverbal communications in cross-cultural communications and provides recommendations for increasing the likelihood of success in a cross-cultural negotiation.

The impact of international business on American companies has been considerably understated (Adler & Graham, 1989; Adler, Gehrke & Graham, 1987; Fayerweather & Kapoor, 1976; Foster, 1992). For example, in 1995 two-way trade in goods and services amounted to well over 1.6 trillion dollars (Bureau of Economic Analysis, 1996a), or nearly 25 percent of the U.S. GDP (Bureau of Economic Analysis, 1996b). No part of the economy can avoid the international dimension. Over 70 percent of American firms are actively competing against foreign-based firms. If an American firm is not competing against a foreign firm, it is

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probably either being supplied by or selling to foreign-based firms. Foreign direct investment in the U.S. has reached over \$400 billion and continues to increase year by year. In the nineties, only firms that have failed or that are on the brink of failure will be exempt from dealing with foreign organizations.

Agreements between firms are at the forefront of international business opportunities. Agreements are the most important documents requiring negotiations between a U.S. firm and a foreign organization (Anand, 1986; Casse & Deal, 1985). As implementation of agreements becomes more difficult and complex, cross-cultural negotiations will become increasingly important to the global organization (Foster, 1992; Frank, 1992; Gulbro & Herbig, 1996).

All exchanges include some elements of negotiation. Also, every negotiation presents opportunities and dangers for all parties. Thus, while poor negotiations can quickly undo careful prior planning, international negotiations are fast becoming unavoidable for a growing number of U.S. based firms. And negotiation-related problems are often magnified when they cross national cultures (Foster, 1992; Herbig & Kramer, 1991; Herbig & Kramer, 1992a; Herbig & Kramer, 1992b).

CROSS-CULTURAL NEGOTIATIONS

When two people communicate, they rarely talk about precisely the same subject, since meaning is based on an individual's perceptions and cultural conditioning. When negotiating internationally, the "[p]otential for misunderstanding will be greater; more time will be lost in talking past each other" (Fisher, 1980). Frequently, intercultural communication translates into anticipating culturally related ideas most likely to be understood by a person of a given culture, and "[d]iscussions are often impeded because the two sides seem to be pursuing different paths of logic" (Fisher, 1980).

When one takes the comparatively simple negotiation process into a cross-cultural context, it becomes much more complex in a number of ways. It is naive to venture into international negotiation with the belief that "after all people are pretty much alike everywhere and behave much as we do." Even when a person wears the same clothes you do, speaks English as well as (or even better than) you, and prefers many of the comforts and attributes of American life (food, hotels, sports), it would be foolish to view a member of another culture as a kindred spirit (Adler & Graham, 1989; Elishberg, Gauvin, Lilien & Rangaswamy, 1991).

An effective negotiation style that serves you well in domestic settings can be inappropriate when applied interculturally. In fact, its use can often result in more harm than gain (Altany, 1988; Frances, 1991; Peak, 1985). Heightened sensitivity, more attention to detail, and perhaps

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even changes in basic behavioral patterns are required when working in another culture (Moran, & Stripp, 1991).

Different cultural systems produce divergent negotiating styles shaped by each nation's culture, geography, history, and political system (Adler & Graham, 1989; Salacuse, 1991). Unless you see the world through the other person's eyes (no matter how similar he or she appears to you), you may not be sharing the same perceptions. Each person brings his or her cultural assumptions, images, and prejudices or other attitudinal baggage into any negotiating situation (Barnum & Walniansky, 1989).

In cross-cultural negotiations, many of the strategies and tactics used domestically may not apply, especially when they may be culturally unacceptable to the other party (Binnendijk, 1987; Burt, 1989; Druckman, Benton, Ali & Bagur, 1976). One succeeds in cross-cultural negotiations by fully understanding the other negotiating parties. This understanding is used to improve one's own advantage by: first realizing each party's expectations as expressed in the negotiations; and then by turning the negotiations into a win-win situation for both sides (Herbig & Kramer, 1992b).

NONVERBAL BEHAVIOR

The most important emotional messages at the negotiating table are expressed nonverbally by gestures, tone of voice or facial expressions. People you negotiate with will most likely interpret your statements with stronger reliance on nonverbal messages than on what is actually said. An estimated 70 percent of meaning is derived from nonverbal cues during social interactions (Boone & Kurtz, 1994; Bovee & Thill, 1995; Harcourt, Krizan & Merrier, 1996). In fact, receivers tend to favor nonverbal over verbal interpretations when ambiguity is present (Boone & Kurtz, 1994; Bovee & Thill, 1995; Harcourt, Krizan & Merrier, 1996; Kharbanda & Stallworthy, 1991).

Nonverbal behavior may be defined as any behavior, intentional or unintentional, exclusive of words, which can be interpreted by a receiver as having meaning (Kharbanda & Stallworthy, 1991). Nonverbal behaviors either accompany verbal messages or are used independently. They may affirm and emphasize or negate and even contradict spoken messages. Equally important, nonverbal behaviors vary from culture to culture and, due to their habitual and routine nature, are more likely to be used unconsciously and spontaneously (Munter, 1993; Adler, 1991).

The wide range of nonverbal behaviors can be divided into seven categories. The first of these categories includes the kinesic code, commonly called body language. Gestures, body and facial movements, and eye contact are included within this group. Vocalics, the second classification, refers to vocal activity that is not expressed in words. Also called paralanguage,

vocalics includes tone, volume, and vocal sounds other than verbal language. The third set of behaviors involve touching, and are placed in the haptic code. Fourth, proxemics refer to the use of space. The fifth category identifies the use of time and is labeled chronemics. Next, physical appearances, including body shape and size as well as clothing and jewelry, create the sixth group of nonverbal behaviors. Finally, the seventh category represents artifacts or objects that are associated with a person, such as one's desk, car, or books (Birdwhistell, 1952; Birdwhistell, 1955; Birdwhistell, 1963).

It should be emphasized that these codes do not usually function independently or sequentially. Instead, they normally work simultaneously (Birdwhistell, 1952; Fast, 1970). In addition, nonverbal behavior is continuous communication. Nonverbal cues are a vital part of interpersonal communications. However, these same messages may be ambiguous or even contradictory.

The meaning of any nonverbal message depends upon the individual involved, the context in which the message occurs, and the cultural backgrounds of the interacting people. Every contextual influence and nonverbal behavior is potentially significant during negotiations, including: the time of the meeting (morning, lunch time, late in the evening); the shape or the negotiating table (round, square); the lighting (white, in the middle of the room); the use of microphones; frequency and duration of breaks; phone calls; the space between the chairs; and the way the negotiators dress. Even "silent language" has a tremendous impact on the negotiation process. Former United Nations Secretary-General Dag Hammarskjöld correctly summarized the importance of nonverbal behavior in the negotiation process: "The unspoken dialogue between two people can never be put right by anything they say." In negotiation, what is not said is in many cases more important than what is openly expressed by the parties involved. One word of caution: an individual gesture must be approached cautiously. Rather, clusters of behavior provide the greatest amount and the most accurate nonverbal meanings (Fast, 1970).

Effective negotiators are fully aware of the existence of all these factors, and they are able to use them to their advantage (Berlo, 1960; Hayakawa, 1949). Successful negotiators are particularly adept at controlling (consciously or unconsciously) their body language and concurrently responding to the many nonverbal cues that they receive from other negotiator(s). These skills are critical since the negotiator may unintentionally transmit false or confusing messages to his or her counterparts. Contrawise, the negotiator may not pick up on or misinterpret nonverbal messages being transmitted by the other side. Moreover, effective communications often require expression in such important nonverbal messages as gestures, tone of voice, or facial expressions (Harcourt, Krizan & Merrier, 1996; Lehman, Himstreet & Baty, 1996).

Overall, awareness of nonverbal communication can lend tremendous insights into the cross-cultural negotiation process. First, it helps one more closely discern the intent of the other side's verbal expressions (Goleman, 1991; Hickson & Stacks, 1985). Secondly, nonverbal communication enables you to clarify your own message (Burns & Beier, 1973; Leathers, 1986; Mehrabian, 1971).

For these reasons, a crucial negotiation tactic is to always carefully observe the players. The following generalizations should help cross-cultural negotiators to interpret and send messages more effectively.

In most western cultures, strength of commitment is positively associated with the simplicity and directness of the negotiator's language. (These attributes are discussed at greater length in the upcoming "Low-Context versus High-Context" section.) Similarly, the more precisely that western cultures define a position, the higher the level of commitment to that position is likely to be (Lehman, Himstreet & Baty, 1996).

Other interpretive generalizations about nonverbal communications include body language such as crossed arms (indicating dislike for the message) and leaning forward (indicating a favorable reaction to the message). Nervousness can be implied by such signs as blushing, contraction of facial muscles, giggling, strained laughter, or silence. Finally, blinking is sometimes associated with feelings of guilt or fear (Burgoon & Saine, 1978; Mehrabian, 1972).

NOISE

Cross-cultural "noise" consists of the background distractions that have nothing to do with the substance of the negotiator's message. Noise occurs more often in cross-cultural negotiations than in domestic settings, since a whole new range of nonverbal cultural differences may be introduced (Moran & Stripp, 1991; Pascale, 1978). Gestures and body postures with one meaning in a given culture can have a completely different significance in another culture.

The seven categories of nonverbal behavior introduced in the preceding section are the main causes of cross-cultural noise (Bovee & Thill, 1995). The confusion comes because such nonverbal behaviors may conflict with a negotiator's expectations and lead to misinterpretation of the situation, a message's intent, or even the very meaning of the message. At certain levels of intensity, noise makes it more difficult to pay attention to the central message (Bovee & Thill, 1995; Moran & Stripp, 1991; Pascale, 1978).

The adept negotiator recognizes potential sources of noise and consciously attempts to minimize its production. At the same time, he or she has prepared for likely noise elements from the other side of the table so as to minimize their effects on his or her performance. One such

potential noise to American negotiators is silence or the use of long pauses before responding during negotiations (Graham & Sano, 1989; March, 1983; Tung, 1982). The knowledgeable American negotiator is aware that the Japanese often use little verbal activity, nod frequently, use silence, even close eyes while others are speaking. These responses help them concentrate in Zen Buddhist fashion (Graham, 1986; Hawrysh & Zaichkowsky, 1990; Oikawa & Tanner, 1992; Swierczek, 1990). In addition, the Japanese use silence to project a favorable impression, implying deep concentration about the problem. When a negotiation impasse arises, the typical Japanese reply is silence, withdrawal, or change of subject (Graham, Kim, Lin & Robinson, 1988; Tung, 1989; Van Zandt, 1970).

Proxemics also give conflicting cues to cross-cultural interpretations. For example, Americans feel comfortable with spacial distance of two to four feet (and very little touching). In comparison, Mexicans and Italians typically get extremely close to their counterparts (Ober, 1995). Other cultures believe in virtually eyeball to eyeball contact; while Japanese and English prefer greater distances. As Fisher has stated, "[i]n addition, Mexicans use some physical contact to signal confidence, such as a hand on the upper arm" (Fisher, 1980). Mexicans communicate with hand movements, physical contact, and emotional expressions (Adler & Graham, 1989; Fisher, 1980; Harcourt, Krizan & Merrier, 1996). In this context, "Americans who are standoffish from the *abrazo* (Latin American embrace) are probably a bit hard to take. They have signaled a certain coolness" (Fisher, 1980).

General social orientation creates an additional source of potential noise. Japanese politeness can at times come across as artificial and excessive to many Americans. To the Japanese, American directness and overbearing manners may signal a lack of self control and implicit untrustworthiness; at the very least it signals a lack of sincerity (Gudykunst & Kim, 1992; Harcourt, Krizan & Merrier, 1996). Likewise, as Fisher notes, "Americans may have difficulty playing the high status social role that goes with an important positions in societies such as Mexico. There is an art to being waited on and deferred to while at the same time being protective of the personal dignity of people in lower social positions" (Fisher, 1980). Conversely, American expressions of impatience and irritation when things do not work or delays are encountered create considerable "noise" in Mexico - both figuratively and literally. Mexican practices relating to the role of women create their share of noise, too (Adler & Graham, 1989; Fisher, 1980; Harcourt, Krizan & Merrier, 1996).

American conduct also unknowingly creates noise for negotiators from other cultures. Problematic social behaviors include slouching, chewing gum, using first names, forgetting titles, joking, wearing too casual clothing, being overtly friendly towards the opposite sex, speaking too loudly, being too egalitarian with the wrong people (usually in lower social positions), working with one's hands, carrying bundles, and tipping too much (Copeland & Lewis, 1985; The Parker Pen Co., 1990).

Finally, eye contact is another common source of cross-cultural noise. An American attributes an unwillingness to engage in a frank conversation when an Indian does not make direct eye contact. From the alternate perspective, the Indian attributes the American with an attempt to control and dictate by means of direct physical confrontation. To look away is a sign of showing respect to Indians. However, in the United States, respect is shown by looking directly at the speaker. In contrast, the French have direct and intense eye contact, which Americans often attribute to aggressiveness and stubbornness. Meanwhile, the French person is likely to attribute weakness, casualness, and insincerity to the American when the intense gaze is not returned or avoided (Harcourt, Krizan & Merrier, 1996; Frank, 1992).

LOW-CONTEXT VERSUS HIGH CONTEXT

Cultures can be either predominantly verbal or nonverbal. In verbal communications, information is transmitted through a code that makes meanings both explicit and specific (Boone & Kurtz, 1996). In nonverbal communications, the nonverbal aspects become the major channel for transmitting meaning. This interpretive framework is called context. Hall (1989) incorporated this factor into a useful model for communication analysis. Context is the oral and nonverbal characteristics of communication that surround a word or passage and clarify its meaning. Context also refers to the situational factors of implicit and cultural norms that affect communications.

High- and low-context refers to the amount of information that is conveyed in a given message. Nonverbal examples include: eye contact, pupil contraction and dilation, facial expression, odor, color, hand gestures, body movement, proximity, and use of space (Bovee & Thill, 1995). In addition, paralingual context indicators include: rate of speech; vocal pitch or tone; vocal intensity or loudness; vocal flexibility or adaptability to specific situations; variations of rate, pitch and intensity; overall vocal quality; and the fluency, expressional patterns and nuances in vocal delivery (Boone & Kurtz, 1994; Bovee & Thill, 1995; Harcourt, Krizan & Merrier, 1996).

The more communication relies on context in any given culture, the more difficult it is for one to accurately convey or decode the explicit contents of a message. High-context cultures can be found in East Asia (Japan, China, Korea, Vietnam), Mediterranean countries (Greece, Italy, Arabic countries, Spain, and France), the Middle East, and to a lesser extent in Latin and South America (Boone & Kurtz, 1994). On the other hand, it is easier to communicate with a person from a culture in which context contributes relatively little to a message (Boone & Kurtz, 1994; Bovee & Thill, 1995). Low-context cultures include the Anglo-American, Germanic, and Scandinavian countries (Boone & Kurtz, 1994; Bovee & Thill, 1995; Harcourt, Krizan & Merrier, 1996).

A high-context communication is one in which most of the information is either found in the physical surroundings or internalized in the person. Little meaning is contained in the explicit message that is transmitted. As a result, interpretation relies heavily on the social setting, the external environment, and associated nonverbal behavior. Members of high-context cultures are socialized from birth to depend primarily on covert clues given within the context of the message delivered verbally. Subtlety is valued in high-context culture languages (such as Arabic, Japanese, Chinese), and much meaning is conveyed by inference. In some high-context cultures, seemingly harmless and even mundane behavior, such as crossing one's leg, exposing the soles of one's shoes, or putting hands in one's pockets are considered to be in poor taste, offensive, and insulting to the host (Harcourt, Krizan & Merrier, 1996; The Parker Pen Co., 1990).

In high-context cultures, relationships between individuals are relatively long lasting with deep personal involvement. Members from these cultures will focus their energies and time on developing understanding and trust with negotiators and give less attention to the specifics of the deal. Furthermore, a member of a high-context culture will only negotiate in earnest when convinced of the other party's integrity and reliability. High-context businesspeople depend heavily upon confidence derived from interpersonal relations instead of upon a strong and independent legal system for conflict resolution. As a result, agreements tend to be spoken rather than written (Boone & Kurtz, 1994; Bovee & Thill, 1995; Harcourt, Krizan & Merrier, 1996; McCall & Warrington, 1987). For example, the Japanese believe that if the situation changes, the contract should be renegotiated (Graham, 1986; Graham & Sano, 1989; Griffin & Daggatt, 1990).

In high-context countries, negotiators require sufficient knowledge of the culture to communicate understandably and acceptably. In these settings, insiders tend to be clannish (Graham, 1986; Graham & Sano, 1989; Griffin & Daggatt, 1990; Herbig & Kramer, 1992b). Only when negotiators are in a position to share the same perceptions as their partners, can they forge comfortable and satisfactory relationships. Case in point: the Japanese believe in intuitive mutual understanding and are adept at the analysis of nonverbal behavior. They do not understand why Westerners talk so much and often appear to contradict each other while at the bargaining table. The Japanese can relate large amounts of information to one another with merely a glance, a movement, or even silence (Graham, 1988; Graham & Sano, 1989; Griffin & Daggatt, 1990; Hall & Hall, 1987; Herbig & Kramer, 1992a). *Haragei* (belly language) is the Japanese expression which implies being able to communicate without words. During verbal discussions, the Japanese often talk around a subject, believing that the idea should be discovered from the context (Herbig & Kramer, 1992a; Herbig & Krammer, 1992b; Ikle, 1982; Kramer, 1989).

In other cultures, there have actually been cases of entire communities (Sicilian) that are able to carry on conversations by gestures alone. For Russians, silence should not be taken as

consent but rather as disapproval. Silence leaves Russians with their options completely open. They can either say nothing, implying acquiescence and approval, or later express disapproval and state that they had never agreed to any such thing. Or they can do both at different times depending on their interests at the moment (Dreyfus & Roberts, 1988; Graham, Evenko & Rajan, 1992; Nite, 1985; Samuelson, 1984; Smith, 1989).

High-context communications are faster, more economical, more efficient and more satisfying. However, without common understanding between sender and receiver most interpersonal communications are incomplete. High-context individuals are seeking information on multifaceted levels beyond the spoken word. Yet, the spoken word is primary message when dealing with low-context cultures. Due to this phenomenon, low-context individuals are quite confused by the ambiguity contained in the spoken or written answers of high-context individuals (Bovee & Thill, 1995). In comparison, members of high-context cultures, such as Mexicans, look at their U.S. counterparts as more structured, rigid, and direct. Often Mexicans are unable to speak frankly about some matter due to the desire to save face (Boone & Kurtz, 1994).

Within a low-context culture, the written word is binding, regardless of what evolves later. For high-context cultures, the human side of the negotiation process is more important than the technical aspects (Boone & Kurtz, 1994). Form and substance are inextricably linked in the high-context society. The Russians are considerably higher context than U.S. culture. Issues involving authority, risk, control, and their possible impact on the relationships among negotiating parties are so important that these concerns must be resolved before any commitment can be given to negotiation agenda items (Boone & Kurtz, 1994; Dreyfus & Roberts, 1988; Graham, Evenko & Rajan, 1992; Nite, 1985; Samuelson, 1984; Smith, 1989).

In a low-context communication, information is transmitted through an explicit code to make up for a lack of shared meanings and words. In low-context cultures, the environment, situation, and nonverbal behavior are relatively less important; and more explicit detail-oriented information has to be given. A direct style of communications is valued and ambiguity is not well regarded (Bovee & Thill, 1995). Furthermore, relationships between individuals are relatively shorter in duration and personal involvement tends to be valued less. These characteristics can be linked to the tendency for low-context countries to be more heterogeneous and prone to greater social and job mobility. Insiders and outsiders are less closely distinguished, and foreigners find it relatively easier to adjust, since immigration is more acceptable. Accordingly, cultural patterns tend to change faster in low-context societies. In addition, authority is diffused through a bureaucratic system which makes personal responsibility difficult (Dodd, 1991).

In low-context cultures, agreements tend to be written rather than spoken and treated as final and legally binding. Initial relationship creation and emotional expressions may be passed

over fairly rapidly. U.S. businesspeople tend to be low-context. They prefer to focus on substantive issues; "Just the facts please" (Hall, 1989). Another traditionally low-context group of people, the Germans, do not appreciate emotional gestures; hands should never be used to emphasize points. Calm under pressure is their motto. Similarly, U.S. negotiators assume that the only natural and effective way to present ideas is by factual logic. (Boone & Kurtz, 1994; Bovee & Thill, 1995; Harcourt, Krizan & Merrier, 1996).

ADAPTIVE BEHAVIOR IN CROSS-CULTURAL ENCOUNTERS

In some areas of the world, it is customary to overstate a case, while understatement is the norm in others. Equally important, interpreters are essential in many cross-cultural negotiations because neither party has an adequate command of the other party's language. This challenge holds particularly true with Arabic states and with the so-called Pacific Rim countries (Boone & Kurtz, 1994; Bovee & Thill, 1995; Harcourt, Krizan & Merrier, 1996). Some of these languages are so flexible in their translatability that it would be unwise to accept agreement in them.

Arabic is such a language, since official Arabic is divorced from the language of everyday life. This cultural reality is most strongly reflected in the communication flexibility of literate Arabs (Boone & Kurtz, 1994; Casse & Deal, 1985; Wells, 1977; Wright, 1981). Flexible communications and translations are manifested in multi-interpretational thoughts, and in emphasis on the psychological significance of linguistic symbols rather than actual meaning. Often, Arabs will tend to fit the thought to the word rather than the word to the thought. Within these norms, words become substitutes for thought rather than their representation.

In Arabic, over-exaggeration and over-assertion become natural means of expression. Thus, a simple statement in English cannot be literally translated into Arabic without losing part of its meaning. This custom can lead to misunderstandings in negotiation by non-Arabs who are unaware of this language use. Within their own countries, Arabs are compelled to assert and over-exaggerate to avoid misunderstanding. When an Arab says something simply, without exaggeration, other Arabs might think the speaker means the opposite. Arabs also often fail to realize that non-Arab speakers mean exactly what they say when messages are sent in a simple, unelaborated manner. To many Arabs, a direct and simple "no" may be perceived as a sign to continue (Wright, 1981).

While the spoken word remains one of the most powerful and flexible tools of negotiation communication, translation of meaning draws from many more sources. As previously discussed, there are a multitude of graphic, olfactory, tactile, spatial, temporal, and symbolic signs that reduce the ambiguity of spoken language. Application of these nonverbal symbols assist the interpretation of spoken language, particularly in relation to expressions of negotiator

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emotions, and attitudes (Burns & Beier, 1973). These applications are evident when others exploit American willingness to talk by consciously making Americans uncomfortable with silence. The underlying goal is to maximize American disclosure (Harcourt, Krizan & Merrier, 1996).

Emotions affect the ability to negotiate because every emotion brings with it an impetus to take action related to the shown emotion. Emotions can also effect messages sent as well as received by negotiators, and can be used to manipulate counterpart actions. Emotions have also been successfully used as a tactic. Stalin alternated between friendly, cordial discussions and adversarial or even hostile outbursts. His emotional tactics threw the other negotiators off balance and helped strengthen a weak negotiating position. Other Soviet leaders also used this tactic (e.g., Khrushchev's shoe banging in the United Nations). Nevertheless, such tactics should be used cautiously since they can often result in much greater loss than any foreseeable negotiations gain. To avoid related problems, the negotiator has to be sensitive to emotions being displayed by his or her counterpart, particularly when emotions arise from states such as anxiety, feelings of displeasure, or shame (Copeland & Griggs, 1985; Fisher, 1980; Fisher & Ury, 1983; Ricks, 1983).

It is likely that intangible issues related to the anticipated or actual loss of public face or self-esteem will emerge, when a negotiator takes the view that his or her counterpart is being unjustly demanding, unreasonably resistant to proposals or abusive in the exercise of power. The negotiator is likely to react protectively to these perceptions. For example, such emotions can manifest themselves in a stream of external nonverbal signals about an internal state. These messages may be encoded as facial expressions and other gestures, which are sometimes supplemented by vocalizations such as grunts and groans.

Being attuned to the unique characteristics of visual expression in a culture is required to understand the degree of emotional intensity. Within each culture there is a perfectly clear range of visual expression from mild to intense. Some cultures, including certain Asian nations, inhibit emotional expression more than others. Other cultures, are much more demonstrative, such as the Italian, Greek, and most Latin American ones (Harcourt, Krizan & Merrier, 1996).

Perceptions of one party's emotions by the other are not always accurate. The Japanese are not viewed as emotional by other cultures, but consider themselves to be passionate. To Latin Americans, the Norte Americano is a "dead corpse" with no color, too serious in business, and unable to loosen up and enjoy life. On the other hand, Asians often consider Americans too demonstrative in business settings, revealing such emotions as anger, frustration, and disappointment. A display of anger is particularly destructive to Asians, and it should not be expressed. Within an Asian perspective, anger disturbs harmony (Burt, 1989; de Ferrer, 1989; Gulbro & Herbig, 1994; Graham, 1988; The Parker Pen Co., 1990).

Differences in cross-cultural body language can also be factored into the emotional interpretations of negotiators. In many cultures, beckoning to someone with the forefinger is considered ill-mannered. Never touch an Arab on the top of the head, for that is where the soul resides. Similarly, never show the sole of one's shoe to an Arab, or use the left hand with a Moslem, since these gestures can be interpreted as rude. Americans, Germans, and Russians shake hands forcefully; however, in some parts of Europe a polite handshake is usually quick and to the point (The Parker Pen Co., 1990). Furthermore, an Asian might view an American as too abrupt and heavy-handed after a typical American handshake, while an American might perceive less firm handshakes as unassertive (Hall, 1989). Laughter and giggling in the West indicate humor, yet these behaviors often indicate embarrassment and humility in Asia (Harris & Moran, 1991; Moran, 1987). Latins embrace one another at the end of a successful negotiation; Central and Eastern Europeans not only embrace but kiss each other on the cheek.

For strategic reasons signals are often sent that are not genuine. For example, a buyer does not always wish to reveal his or her desire to have a particular product or service in case his or her counterpart revises the negotiation objectives upwards. Moreover, personal inclinations and interests of one or both the negotiating parties may be at odds with the interests of the organizations that they represent. For the preceding reasons, opening moves and concessions allow each party to gauge the other's preferences and intentions. In turn, this feedback gives each negotiator the opportunity to present or misrepresent information.

EXAMPLES OF NONVERBAL CULTURAL COMMUNICATIONS

There are many forms of nonverbal communication that can be adapted to improve cross-cultural negotiations. Some examples are described here under the following categories: Agreements; Body Language; Social Behaviors; Silence/Paralanguage; and Emotions.

Agreements

The Arabs want direct, face-to-face discussions, but do not like to bring open disagreements into a formal session. In fact, rather than voice disagreement, many Arabs will say they agree. Then they will take actions that gently hint at their disagreement, hoping that the other party will get the message. In Algeria, an American consultant noted: "My clients never disagree with my recommendations. They just do not try to implement the ones they dislike" (Copeland & Griggs, 1985; Wright, 1981).

In certain cultures, people will seldom provide a direct "no," even if they disagree (Copeland & Griggs, 1985; Wright, 1981). Among Arabs, hesitation signals that disagreement exists. Furthermore, a person of status is not expected to hesitate over an answer. If you don't know, stall; but don't admit that you don't know.

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The Japanese are also so uncomfortable with open conflict that they hardly ever express it directly. They talk around it, or do not react at all, or give indirect hints that they disagree. In general, they hardly ever say no directly. One must infer "no" from the way they say "yes." Depending on the exact word, a Japanese says "yes" he may mean "no" and often "maybe" but rarely an unconditional "yes." "Hai" means "yes" but it indicates understanding rather than agreement. If a Japanese draws breath between his or her teeth and says something like "*sah*" or "it is very difficult" he or she means "no." The Japanese claim to have as many as twenty or more ways to expressing "no" without having to say it.

Body Language

The meanings of body language vary widely according to specific cultures. Saudi Arabians look closely into another's eyes to gauge honesty through observing the movements of the pupil. In comparison, U.S. citizens think that keeping direct eye contact is a sign of openness, honesty and assertiveness. Still other cultures view it as confrontational, aggressive, hostile, and rude.

Italians, Arabs, and Latin Americans use their hands a great deal to emphasize or support what they are saying (Campbell, Graham, Jilbert & Meissner, 1988; The Parker Pen Co., 1990). United States citizens use hands for verbal support less often, but value firm handshakes. In contrast, the French shake hands without particular conviction and without even a verbal greeting, which a German may misread as indifference. The Japanese interpersonal communication style includes less eye contact, fewer negative facial expressions and more periods of silence (Graham, Kim & Andrews, 1987; Graham, 1981; Graham, 1984a; Graham, 1984b; Heiba, 1984; Hendon & Hendon, 1990; Kramer, 1989; March, 1985).

In Bulgaria, nodding one's head means "no" while shaking one's head means "yes." A "thumbs up" gesture is considered vulgar in Iran but friendly in Brazil. Folding your arms may be considered disrespectful by a Fijian. Pointing at something with a finger is considered rude in many places in Africa. In Greece, waving may be taken as an insult. The "A-OK" gesture, considered perfectly appropriate in the U.S.A., is likely to be viewed as obscene by a Brazilian (Boone & Kurtz, 1994; Bovee & Thill, 1995; Harcourt, Krizan & Merrier, 1996; The Parker Pen Co., 1990).

Social Behaviors

In Japan and the Arab countries business negotiations are often combined with social activities. One purpose of these activities is to demonstrate hospitality. Another, more serious purpose is to determine whether you are the sort of person with whom they want to do business. In fact, the social process can be as important as the negotiations process. In these settings, discussing business at the wrong time is an easy way to create a bad impression. Good manners are very important to the Japanese, and the Portuguese prefer that no business be discussed at

a meal until the conversation is complete and coffee is served (Adler, 1991; Altany, 1988; Druckman, Benton, Ali & Bagur, 1976; Ghauri, 1988; Harris & Moran, 1991; Hendon & Hendon, 1990; Ikle, 1982; Moran & Stripp, 1991; The Parker Pen Co., 1990; Wright, 1981).

Silence and Paralanguage

The Japanese often use little verbal activity, nod frequently, use silence, and even close eyes while others are speaking. Silence to a Japanese means one is projecting a favorable impression and is thinking deeply about the problem. When reaching a negotiation impasse, the typical Japanese response is silence, withdrawal or change of subject. Japanese are more influenced by what is not said, and often prefer a third party to serve as a "buffer" in negotiations (Graham, Kim & Andrews, 1987; Graham, 1981; Graham, 1984a; Graham, 1984b; Heiba, 1984; Hendon & Hendon, 1990; Kramer, 1989; March, 1985).

As with body language, paralinguistic norms can be quite diverse when compared between cultures. Anglo-saxon speakers tend to use unvarying inflections when they are bored or are attempting to show sarcasm. In contrast, Russian speakers use level tones when conveying neutral, non-emotion laden information. Therefore, a Russian negotiator may come across negatively when he or she is merely trying to remain neutral (Harcourt, Krizan & Merrier, 1996).

When a negotiator communicates in a foreign language he or she must not only use correct grammar and idioms, but must also use the inflections and rhythms associated with the meanings to be conveyed. For example, in Middle-Eastern, Latin American, and many Mediterranean cultures, speakers tend to speak more volubly and with greater seeming emotion than is normal in the U.S.A. In turn, U.S.A. negotiators often speak more forcefully than negotiators from many European cultures. These differences should be kept in mind in order to convey the intended emotional content in a negotiation (Harcourt, Krizan & Merrier, 1996).

Displays of Emotions

The range, use, and manipulation of emotions varies dramatically across the globe. Some Asian cultures inhibit emotional expressions. Indians do not approve of displays of emotion, and Chinese negotiators rarely telegraph their next move through a show of emotions. With the Chinese, the level of friendliness or impersonality remains the same whether negotiations are approaching agreement or failure.

Other cultures, such as in Latin American and the Mediterranean countries, are much more demonstrative. "Italians tend to be extremely hospitable, but are often volatile in temperament. When they make a point, they do so with considerable gesticulation and emotional expression" (Rearden, 1982). Moreover, Italians enjoy haggling over prices and dressing in a flamboyant

style. In addition, emotional cues can be misleading. A Thai's laughter in meetings may not indicate amusement. Often, laughter is an embarrassed response when the Thai does not understand a negotiator's point or simply does not wish to reply (Boone & Kurtz, 1994; Bovee & Thill, 1995).

Finally, some cross-cultural negotiating teams strategically encourage emotional stress in counterparts. Stress, the body's response to unusual demands, can be created in many ways to produce concessions by the other side. For example, during the 1972 Nixon-Brezhnev Moscow summit, the Soviet negotiators frequently changed the setting and agenda of the meetings. They also refused to provide the Americans with access to telecommunications equipment and administrative support. These tactics produced considerable stress for the U.S. negotiators, who feared (justifiably) that the Soviets were electronically monitoring their conversations.

CONCLUSIONS

Negotiating across cultures carries the risk of misperception. Potential danger arises from nonverbal cues with divergent cultural meanings. Often, nonverbal behaviors are either over- or under-emphasized for the norms of their particular context. Gestures and expressions embody subtle complexities that vary considerably in their meaning from one culture to another. Thus, misinterpretation can easily occur.

As trust is an essential component to effective negotiation, negotiators must immerse themselves in the culture with which they are interacting. Through careful pre-negotiation training and research, negotiators can familiarize themselves with their counterpart's nonverbal symbols, and create a favorable impression. This strategy also increases the likelihood of optimal interpretation, even if a counterpart deliberately manipulate cues.

In conclusion, an understanding and acceptance of these nonverbal customs can smooth the bargaining process. Even more important, these steps will increase the likelihood of positive negotiation outcomes for all parties.

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THE IMPACT OF CULTURAL DIFFERENCES BETWEEN THE UNITED STATES AND MEXICO: DO BIRDS OF A FEATHER FLOCK TOGETHER?

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Although NAFTA is generally expected to produce positive results, it has been proposed that Mexicans and Americans are often wary and unaccepting of each other due to cultural differences. This study empirically examines the nature of these cultural differences. The study finds that acceptance of foreign nationals by Americans is directly related to the individualistic nature of the culture of the home country from which the foreign nationals come; the more individualistic the culture, the more Americans accept them. Through a recognition of the precise nature of the cultural differences, steps can be taken to develop lasting social acceptance and economic prosperity between the United States and Mexico.

On January 1, 1993 the North American Free Trade Agreement (NAFTA) took effect and created the world's largest trading block. The purpose of NAFTA is to reduce many tariff and non-tariff trade barriers between the United States, Canada, and Mexico. As a result, a market of 370 million people with a combined annual economic output of \$6.5 trillion has been formed (NAFTA, 1993). While trade between the U.S. and Canada is substantial (being the world's two largest trading partners), this paper specifically focuses on the increased relations between Americans¹ and Mexicans resulting from NAFTA.

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Contact between Mexicans and Americans is increasing. As a result of Mexican economic liberalization in the late 1980s, Mexico has become the United States' second largest market for manufactured goods (NAFTA, 1993). Since the late 1980s, total U.S. exports to Mexico have more than doubled. Between 1988 and 1993, 47 of the 50 states increased exports to Mexico, 27 of these states experienced increases of more than 100 percent, and New Mexico, alone, saw its trade with Mexico increase by 380 percent (MISER, 1995). The largest dollar volume increases came from three of the four border states, Texas, California, and Arizona, which together comprised almost 70 percent of total U.S. exports to Mexico in 1993 (MISER, 1995). Trade between the two countries is expected to continue or even accelerate due the further reduction of trade barriers under NAFTA's provisions (Jacobs, 1993).

As this trade information attests, the United States and Mexico have an important and growing economic relationship. Free trade between the U.S. and Mexico is rapidly binding both nations together in a web of economic self-interest. The extent of trade between the U.S. and Mexico means that neither nation can afford to abandon trade with the other without seriously damaging its own economy.

While NAFTA is generally viewed as providing positive economic benefits for both the U.S. and Mexico, cultural dissimilarity has been cited as a possible impediment to the realization of NAFTA's potential (de Forest, 1994; Zamora, 1993). Successful participation in the global economy requires the recognition and understanding of cultural differences between people of different national backgrounds. However, recent polls show that Americans feel threatened by the cultural diversity associated with increased contact with people from different countries (Moore, 1993), and policies such as NAFTA will only further increase such contact.

This study answers a call for empirical work addressing the impact of social variables, such as culture, on U.S./Mexican trade (Nicholson, Lust, Manzanera & Rico, 1994). Although Mexico is our neighbor and an increasingly significant trading partner, it has been proposed that Mexicans and Americans are often wary and unaccepting of each other due, in part, to cultural differences (Zamora, 1993). Through an understanding of the nature of cultural differences between the people of the United States and Mexico, some of the barriers to the NAFTA trade block may be reduced.

CULTURAL SIMILARITY AND SOCIAL ACCEPTANCE

Similarity-attraction theory, a well-established principle in social psychology, states that people are attracted to others whom are perceived as being similar to themselves. The more people share similar beliefs and attitudes the more highly they think of each other. In general, people tend to like other people with whom they share a majority of views and values (Byrne & Nelson, 1965).

Similarity-attraction theory has been tested on individuals in many different contexts, from men living together in a boardinghouse (Newcomb, 1961) to married couples (Byrne, 1971). Demographic characteristics such as age, religion, sex, race, height, intelligence, economic status, and education are found to be related to attraction. The typical finding is that homogeneity prevails; people prefer to associate with others who are similar to themselves (Buss, 1985; Byrne, Clore & Worchel, 1966; Kandel, 1978; Tsui, Egan & O'Reilly, 1992). The theory has been extended to the relationship between groups of people, such as members of political organizations (Rosenbaum, 1986). Additionally, some researchers propose that differences among national cultures are factors affecting attraction (Jones, 1972; Myers, 1993). For example, Mendenhall and Wiley (1994) argue that using impression management techniques in which expatriates adopt the normative behavioral requirements of the host country's culture can result in more accepting treatment by the host nationals. To date, however, no empirical studies of cultural attraction have been conducted.

Different countries have different cultures. Culture represents human behavioral patterns which are communicated from one generation to the next. Culture is reflected in the institutions of a society, in its businesses, schools, churches, and family life; culture is exemplified in all of the forces that impact upon a person's mental development. From the moment people are born, society's culture is at work shaping their personality and the ways in which they interact with one another (Berger & Luckmann, 1966).

The culture of a society is defined as "the shared knowledge, beliefs, values, behaviors, and ways of thinking among members of a society" (Daft, 1994: 90). Culture can also be thought of as the "collective mental programming of the people in an environment" (Hofstede, 1980: 43). It is made up of the collective norms shared by people living within a society.

Culture is a multifaceted concept and can be studied and measured along many dimensions. For this study, we use Hofstede's (1980; 1983a; 1983b) four dimensions of national culture: power distance, uncertainty avoidance, individualism, and masculinity. The dimensions represent a framework for developing hypotheses in cross-cultural studies and to aid in the understanding of the different issues people and organizations face within multi-cultural contexts (Hofstede, 1983a; Hofstede, 1983b).

Generally, we test the idea that Americans are less accepting of people from countries whose cultures are dissimilar to the United States than they are of those from similar cultures. To the extent that foreign nationals are from a country with cultural scores along each of Hofstede's dimensions that are markedly different from the scores of the United States, we expect Americans to be less accepting of them. Conversely, to the extent that foreign nationals are from a country with cultural scores along each of Hofstede's dimensions that are similar to the scores of the United States, we expect Americans to be more accepting of them.

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Specifically, we test the impact of each of Hofstede's four dimensions of national culture upon social acceptance.

Power distance (PDI) reflects the extent to which the people within a society accept the uneven distribution of power throughout organizations. People living in countries with a high PDI generally expect there to be inequalities in the status enjoyed among people everywhere; one of the functions of society is to protect and maintain these inequities. For example, superiors and subordinates consider themselves to be different from each other, and power-holders are entitled to special privileges. People from low PDI countries generally stress equality among all people. Subordinates and superiors are all considered to be very similar and, thus, enjoy equal rights.

The U.S. scores for power distance are relatively low (U.S. PDI=40) compared to that of the average of the countries surveyed (median PDI=54). Based on the concepts of similarity-attraction discussed earlier, we expect Americans to be more accepting of people from countries with relatively low scores on power distance.

Hypothesis 1: Americans will be more accepting of people from countries characterized by relatively low power distance than they will be of people from countries characterized by relatively high power distance.

Uncertainty avoidance (UAI) represents a the general aversion by people within a society to ambiguous situations. People from high UAI countries typically believe uncertainty to be a constant threat that must be fought. The result is a system of formal and informal rules governing conduct. Anxiety and stress tend to run high, nationalism is strong, and there is a desire for regulation. Low UAI countries readily accept uncertainty as a part of life. Stress levels, nationalism, and the desire for rules all tend to be low.

The U.S. is relatively low on uncertainty avoidance (U.S. UAI=46; median UAI=64). Therefore, we expect Americans to be more accepting of people from countries with relatively low uncertainty avoidance.

Hypothesis 2: Americans will be more accepting of people from countries characterized by relatively low uncertainty avoidance than they will be of people from countries characterized by relatively high uncertainty avoidance.

Individualism (IDV) shows the emphasis placed by members of a society on the rights of the individual over those of the larger social group. In high IDV countries, people are responsible for themselves and their immediate families, identity is based on the individual, and everyone has a right to a private life. In low IDV countries, the clan or extended family protects

its members in exchange for the members' loyalties. Identity is based on the group, and one's private life is subordinate to the desires of the collective.

The U.S. score on individualism is very high (U.S. IDV=91, median IDV=48). Thus, we expect Americans to be more accepting of people from countries with relatively high individualism scores.

Hypothesis 3: Americans will be more accepting of people from countries characterized by relatively high individualism than they will be of people from countries characterized by relatively low individualism.

Masculinity (MAS) is a measure of the extent to which a society emphasizes traditionally masculine values over feminine values. People from high MAS countries typically reflect characteristics such as the acquisition of money and possessions, the admiration of success, high performance, and assertiveness. People from low MAS countries typically reflect a value of service, the importance of quality of life, and place little emphasis on advancement and recognition.

The U.S. masculinity score is high compared to the median score of all nations (U.S. MAS=62; median MAS=52). As a result, we expect Americans to be more accepting of people from countries with relatively high masculinity scores.

Hypothesis 4: Americans will be more accepting of people from countries characterized by relatively high masculinity than they will be of people from countries characterized by relatively low masculinity.

METHODS

The data used for this study cover cultural measures and perceived social standing by Americans of people from 17 countries (see Table 1). The dependent variable, social standing, represents the level of acceptance that various groups of foreign national have achieved within American society. Social standing is measured using the results of two surveys conducted by the National Opinion Research Center (Reddy, 1993). In polls taken in 1964 and 1989, 1,537 American adults were asked to rate the social standing of several groups of foreign national in the United States. The survey samples are representative of the adult population in the United States, which consists of 75 percent non-Hispanic white, 12 percent black, nine percent Hispanic, and four percent other ethnic backgrounds².

Hofstede (1983b) describes culture as being relatively stable over time. In his original data set, he finds that the values and beliefs of societies change at a very slow pace. For this reason,

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we suspect that social standings ascribed to various groups of foreign national by Americans will also exhibit little change in the time between the two surveys. A Spearman rank order correlation test reveals that the rankings of social standing in 1964 and 1989 are indeed significantly correlated with one another ($r_s = .8775$, $p < .0001$). As a result, the values from the two polls are averaged to arrive at a single measure of the social acceptance by Americans of each group of foreign national during the twenty-five years from the mid-1960s to the end of the 1980s.

The independent variables represent measures of the culture of each foreign national group's home nation. National culture is operationalized using the scores for the four dimensions of culture from Hofstede's (1980) study: power distance, uncertainty avoidance, individualism, and masculinity.

RESULTS

Multiple regression confirms that the four dimensions of culture do statistically significantly predict social standing ($R^2 = .856$, $F = 17.826$, $p = .0001$). Due to the relatively small sample size, a series of nonparametric Wilcoxon rank-sum tests are used (Cody & Smity, 1991). To test the four hypotheses, a median split is used to divide the countries into two groups along each cultural dimension. The results, shown in Table 2, provide mixed support for the hypotheses.

As Table 2 shows, of the hypotheses relating to the four dimensions of culture, only Hypothesis 3 is supported. Individualism is the only dimension of national culture that significantly impacts social standing.

DISCUSSION

This study finds that individualism is the only cultural variable to impact social standing. However, individualism has an extremely significant impact, accounting for nearly 80 percent of the variance in social standing. People from countries with collectively-oriented cultures are ranked significantly lower on social standing by Americans.

This difference has implications for the working relations between members of various cultures, particularly between members of societies characterized by markedly different levels of individualism. Due to the individualistic nature of the culture of the United States and the collective nature of the culture of Mexico, the findings of this study are especially relevant in light of the increase in contact between the U.S and Mexico resulting from the North American Free Trade Agreement.

Table 1
Countries Used in this Study

Austria	Japan
Denmark	Mexico
Finland	Netherlands
France	Norway
Germany	Spain
Great Britain	Sweden
Greece	Switzerland
Ireland	United States
Italy	

The primary cultural difference between U.S. and Mexican society lies in the cooperative and collective nature of Mexican society and the competitive and individualistic character of U.S. society. The "doctrine of individualism" is a core belief of American culture. This doctrine asserts that the basic purpose of U.S. society is the promotion of the individual (Nash et al., 1986: 288). American society is characterized by a relatively high degree of socio-economic and geographic mobility. This has helped to obviate the need for an extensive network of personal contacts to ensure success; an individual possessed of the requisite skills and energy can advance within society without substantial help from others.

Table 2
Results of Wilcoxon Rank-Sum Tests

Variable	Mean Social Standing		Z-score
	Upper Half	Lower Half	
PDI	8.60	9.57	0.3416
UAI	7.11	11.13	1.5877
IDV	11.78	5.88	-2.3575*
MAS	10.00	7.88	-0.8179

* $p < .05$

Mexican society, on the other hand, stresses the primacy of the group over the individual. The primary building block of Mexican society is the extended family. The importance of the family extends to the makeup of the Mexican economy, which has traditionally been controlled through a system of family and personal alliances. Mexico's paternalistic and protective political, economic, and legal systems reflect its cultural bias towards community and emphasis on cooperation (Zamora, 1993).

Examples of how the differences in the individualistic nature of the two cultures manifest themselves can be found in all aspects of social life. However, for the purposes of highlighting the impact of these differences, we briefly discuss four key areas affecting business and trade relations: the legal system in general, employer/employee cooperation, the employee selection process, and the handling of employee grievances.

The Mexican system of public law is generally non-adversarial and is characterized by administrative action rather than direct legal confrontation. To voice a legal complaint successfully, it is necessary to enlist the help of others through the use of coalitions and/or cooperative group endeavors (Zamora, 1993); whereas the U.S. preference is for individualistic, confrontational remedies to legal disputes.

The primacy of the group in Mexican society is embodied in the relationship of the Mexican worker with the employing organization. Worker/management relations are characterized by interdependence, mutual obligations and allegiance between boss and worker, collectivism and continuity, and belongingness and cooperation. For example, it is not uncommon for executives departing for another company in the same town to take many other employees with them (Flynn, 1994). The ideal work place design is reminiscent of the Mexican family, emphasizing teamwork and cooperation (de Forest, 1994). In contrast, the model American work place focuses on individual achievement, change, and competition.

The Mexican focus on cooperation and collectivism can also be seen in the employee selection procedure. Typically, job applicants are selected for employment based on factors, such as a work history, that demonstrate their ability to meet social obligations and work harmoniously and cooperatively with others (de Forest, 1994). By comparison, U.S. selection procedures focus on prior achievement, individual motivation, and distinctive competency.

Another example of how cultural differences manifest themselves can be found in an examination of systems designed to manage employee grievances. A formal grievance system reduces labor tensions in the United States, but such a system often does not have the same effect with Mexican workers. For instance, an American manager in a Mexican factory installed an elaborate grievance system to forestall serious labor problems at the plant. Though no grievances were ever filed, the workers went on strike (de Forest, 1994). One of the reasons

the grievance system did not work is because confronting one's supervisors with complaints is viewed by Mexican workers as destructive to social harmony in the work place.

The need for maintaining work place social harmony is an important factor designed into Mexican compensation systems (Flynn, 1994). For instance, many U.S. manufacturing facilities are implementing pay-for-performance compensation systems that promote and reward individual achievement. However, such systems are often unsuccessful in Mexico because those workers receiving higher pay are sometimes viewed by their peers as being favored by upper management, thus creating distance and disharmony among workers. In several cases, Mexican workers who received additional pay for work place achievements left their companies because they felt ostracized by their co-workers (Flynn, 1994).

The preceding examples serve to illustrate some of the ways that differences in the individualistic orientations of the U.S. and Mexican cultures manifest themselves. Failure to recognize the nature of differences between the U.S. and Mexico is likely to lead to misunderstandings which could impede the development of trade relationships encouraged by NAFTA. Cultural differences should not be seen as presenting weaknesses to be overcome; instead, cultural differences should be seen as assets. The emphasis on group relations within Mexican culture can lead to the development of social networks among workers, which, when allowed to flourish, have been found to lead to improved work place productivity and efficiency (Ruffier & Villavicencio, 1994).

While this study has examined some of the possible impacts of cultural dissimilarity on social acceptance, it is not without limitations. We do not examine individual and cultural differences not captured in Hofstede's four dimensions of culture. For example, differences in economic development, temporal orientation, language, and religious beliefs may also impact acceptance and the social standing of ethnic group members. Additionally, Americans may simply rate the social standing of an ethnic group lower due to prejudices based on incomplete information and misunderstanding (Aronson, 1976). However, despite its limitations, we feel that this study does shed light on the importance of one very significant difference between the United States' and Mexican cultures: individualism.

CONCLUSION

This study finds that acceptance of foreign nationals by Americans is directly related to the individualistic nature of their home country's culture; the more individualistic their culture, the more American's accept them. These findings are particularly relevant for those companies located in the border states. Because of the significant economic impact of NAFTA for this region, an understanding of the interactions between Mexican and American people is crucial. In short, the future of trade relations between the two peoples promises to be exciting and

productive as long as the nature of cultural differences are fully understood and disseminated, rather than being merely overlooked, over simplified, or naively assumed to be nonexistent.

ENDNOTES

1. We recognize that Mexicans are also Americans in the sense that they live on the North American continent. However, to be consistent with common usage we employ the term "American" in the limited sense of denoting citizens of the United States of America.
2. The terms used to identify these ethnic groups conform to the wording used by the U.S. Bureau of the Census.

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THE ROLE OF LEADERSHIP AND CULTURAL CONTINGENCIES IN TOTAL QUALITY MANAGEMENT IN CENTRAL AMERICA

Asbjorn Osland

This case study contrasts how leaders learn to build on existing cultural contingencies while implementing total quality management (TQM) in a Central American context. The specific contingencies discussed are high power distance in relation to the quality council and allocentrism in reference to the cross-functional quality action teams.

The approaches of two leaders are contrasted. One leader implements TQM interventions at multiple levels of the organization simultaneously; his approach has a statistically significant impact on employee attitudes. Another leader, in a different but comparable site, uses the TQM program opportunistically to further his managerial agenda and proves ineffective in changing employee attitudes.

Since culture reputedly accounts for more than fifty percent of the variance in managerial behavior (Hofstede, 1980), a leader must build on the cultural contingencies of the organizational setting when implementing organizational changes (Schein, 1992), such as total quality management (TQM). In the Central American context, two cultural contingencies are particularly important: high power distance -- the acceptance of unequal distribution of power within social institutions (Hofstede, 1980) -- and in-groups within Latin collectivist societies, which Triandis et al. (1988) referred to as allocentrism (Triandis, Bontempo, Villareal, Asai & Lucca, 1988).

Since TQM is predicated on high levels of employee involvement (Juran & Gryna, 1993; Ishikawa, 1985), the organizational implications of high power distance must be understood. At first glance, high employee involvement seems to be in conflict with high power distance norms where both leaders and subordinates expect that only leaders will have the

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unquestionable power to make decisions. Employees will find it more difficult to express their views as equals with management, and leaders often find sharing power to be uncomfortable. For example, the autonomy of quality councils, which provide guidance and support for the TQM intervention (Sholtes, 1988) is sometimes threatened by the physical presence of top-level leaders in a high power distance setting. Though they may understand the importance of granting autonomy to a quality council, they are likely to assume control, be it direct or unobtrusive (Perrow, 1986), when the participants flounder or move in a direction unanticipated by the leaders.

Allocentrism, the second cultural contingency, is manifested in the Central American work setting by strong departmental (in-group) loyalty and "we-they" attitudes and friction with other departments (out-groups). Organizations often experience turf battles and intergroup tension that does not lend itself to the cross-functional teamwork that is a hallmark of TQM.

As TQM generally entails changing the organizational culture, the role of the leader is crucial to the success of the intervention (Deming, 1986; Ishikawa, 1985; George, 1992; Juran & Gryna, 1993). Within this context, leaders must develop clear strategies for implementation. Ishikawa (1985) refers to this as TQM policy deployment -- that is, consistent, explicit and concrete quality policies diffused to all levels of the organization. TQM policy deployment is based on the leader's perception of the contingencies affecting the implementation of TQM.

The research question that guides this study is: How can leaders deal successfully with existing cultural and organizational contingencies while implementing TQM, when this innovation promotes behavior contrary to the organizational and national culture?

Since the research is based on grounded theory (Glaser & Strauss, 1967), the empirical data from the participant observation phase enabled the author to operationalize the research question into the following propositions:

- (1) The leader is so prominent in a high power distance setting that he or she cannot actively participate in a quality council.
- (2) "Turfism" can be overcome in cross-functional quality action teams if leaders build on the cultural contingencies of high power distance and allocentrism in the organizational change effort to implement TQM.
- (3) Conversely, the change effort could falter if such cultural contingencies are ignored.
- (4) TQM should be implemented through policy deployment at multiple levels of the organization.

METHODS

Research Setting

The Tropical Export Company is a family-controlled North American based multinational corporation with very extensive production operations in Latin America that produce a labor intensive tropical export product, primarily for North America and Europe. The company has a century long history in Latin America. It is one of the four major players in the industry. The two research sites (Bocagrande and Playa Negra, both production divisions) are economies-of-scale operations (approximately 5,500-6,000 employees each) located in the Central American country of Morazan -- a fictitious name used to preserve the anonymity of the company. The village-like, relatively closed environments around the production divisions create social situations that are more extreme than those found in most modern organizations. The distinction between work and social roles in these isolated company towns is often blurred.

TQM was generally welcomed at the administrative levels of the company but the general managers were hesitant to diffuse it too quickly into the union ranks as they feared the union leaders would perceive it as a Machiavellian ploy to subvert the political solidarity of the union. Thus, the present research covers only the salaried personnel and their involvement with TQM.

Ethnographic Methodology

I was a participant observer from May 28, 1990 until July 23, 1992; I served as the human resources manager for the company in the country of Morazan. As an expatriate American citizen who had spent close to seven years in Latin America, first with Peace Corps and then as a manager of a development project, I was fluent in Spanish. At the time I took the job with the Tropical Export Company, I was a doctoral candidate in organizational behavior. I spent approximately one third of my time in Playa Negra, a third in Bocagrande, and a third in the capital city office, with some time at Packaging, Inc., a subsidiary of the Tropical Export Company that produced production and packaging material for Playa Negra and Bocagrande. As a participant observer and staff executive reporting to the same vice president as the general managers of Playa Negra and Bocagrande, I attended staff meetings, conversed with the employees, conducted over 150 interviews, spoke frequently with corporate visitors from the U.S., and interacted socially with the residents of Playa Negra and Bocagrande who worked for the company.

Survey Instrument

The second phase of the research involved the development of a questionnaire to measure organizational changes in relation to the TQM program. This instrument was translated by an educated native speaker from the region and revised by two bilingual educated individuals. The

questionnaire consisted of the relevant portions of the Socio-technical Systems Benchmark Survey (Sabiers & Pasmore, 1992), several questions specifically developed for the survey, and an instrument to measure organizational commitment (Mowday, Steers & Porter, 1979).

The Sabiers and Pasmore instrument consists of twenty scales used to measure the degree to which an organization follows sociotechnical systems design principles. Each scale or variable consists of a series of questions that yielded internally consistent responses (i.e., Cronbach alpha greater than .66). The instrument utilizes a Likert scale of 1 (strongly disagree) to 5 (strongly agree). An example of the questions used follows: "Information about my department's objectives is shared with me." The variables that proved reliable in this study appear below.

Inclusion: This variable measures perceptions relating to the extent to which one interacts with other levels and departments of the organization, is privy to financial and objectives related information, understands how decisions are made, and feels like a partner who is heard.

Support for innovation: This scale measures perceptions relating to good ideas being put into practice, being encouraged to try new ways of doing things, and being rewarded for coming up with new ideas.

Facilitative leadership: This scale focuses on receiving clear feedback, messages, and guidance from one's superior plus the autonomy to figure out best how to work.

Cooperation: This relates to assistance from co-workers.

Upward influence: This scale measures perceptions of how well the supervisor listens to one's opinions, solicits advice, and whether or not the subordinate is consulted on job changes.

Activity feedback: This variable measures one's perceptions of feedback from others regarding the quality of one's work as well as the ability to give feedback to others.

The questions developed for the survey measured group efficacy (i.e., one's attitudes toward working in groups), positive attitude toward TQM, and positive view toward one's superior. Again, the respondents utilized a Likert scale of 1 (strongly disagree) to 5 (strongly agree). An example of the questions used follows: "When I talk to those who are involved in the TQM groups, I find that they seem enthusiastic about TQM."

The organizational commitment measure also used a Likert scale but measured from 1 (strongly disagree) to 7 (strongly agree). An example of the questions used follows: "I talk up this organization to my friends as a great organization to work for."

Selection of Survey Subjects

The results of the implementation of TQM in Playa Negra were contrasted with the results in Bocagrande by looking for significant differences between the TQM participants with the non-participants.

The subjects in Playa Negra were divided into two groups, those involved in TQM (n=47) and those uninvolved (n=45). This sample included all the participants in TQM, with the exception of the members of the quality council. They were excluded because almost all the executives were members of the quality council, making it impossible to match them with non-participants at the same hierarchical level. The non-participant group was formed by drawing a random sample of comparable size and organizational level to match the TQM participants.

In Bocagrande, the subjects were also divided into comparable groups, TQM (n=33) and non-TQM (n=37). Because fewer employees were involved in the TQM effort here, it was necessary as well as feasible to include subjects at the executive level. Two stratified random samples of non-participants from comparable levels of the organization were drawn from an employment roster.

The two locations were similar in many respects. The ethnic makeup of the monthly employees who responded to the survey was almost uniformly Latin with the exception of the European general manager in Bocagrande, Karl. Both general managers, several department heads, and some lower level monthly employees had worked in both locations. The technologies employed in both locations were essentially the same. The demographics of the subjects from Playa Negra and Bocagrande are shown in Table 1.

RESULTS

Ethnographic

The case study was an effort to build grounded theory (Glaser & Strauss, 1967) around the role of leadership in the implementation of TQM. The impacts of the different managerial styles of the two leaders regarding employee involvement in the two locations were contrasted through qualitative data recorded during the participant observation phase and, later, a survey and follow-up interviews. I labeled the different TQM implementation approaches used by the leaders *policy deployment* (i.e., Armando's approach) versus *managerial opportunism* (i.e., Karl's approach). The contrasts between the managerial styles of the two managers are shown in Table 2.

Armando & Policy Deployment

Armando, the general manager of Playa Negra, is native to that community. His father provided services to the company. Armando was educated in the U.S. and completed a degree in the sciences. He began working for the company in a research capacity but moved to production where he spent his entire career of more than 25 years. He has highly developed political skills and charismatic leadership qualities. He is a large fit man who strikes an imposing image. He combines an engaging manner with total authority; one can speak frankly with him and challenge him with well founded arguments yet one is always aware of his authority. His talents are in production, including labor relations, and general leadership. He permits the support functions (e.g., the controller's office and materials) considerable autonomy as long as policy is followed, budgets respected, and targets met. He handles the human resource functions for key people himself in terms of career development and succession planning and tends to plan and then offer options to subordinates, rather than converse with them to determine how they see their careers developing.

Armando derives his power from the support the organizational culture gives to the role of the general manager, the national culture's perception of power distance, and his ability to create and deploy policy. His former controller in Playa Negra stated, "Armando does half the work of a controller in that he makes people follow the rules and is very cost conscious." Others who work with Armando also describe him as predictable. The methodical and deliberate approach he has adopted to TQM policy deployment is consistent with the approach he has taken in implementing other programs in the past.

Karl & Managerial Opportunism

Karl, the general manager of Bocagrande, was born in the Caribbean and spent his early years in another Central American production division where his father worked. His background was clearly rooted in the neo-colonial history of the company, so much so that Karl did not become highly fluent in Spanish though he had resided in Latin America for much of his life; he understood Spanish and could make himself understood in poor Spanish. Karl attended boarding school in Europe where he was eventually educated as a military officer. He spent several years in a war zone, left the military, and eventually went to work for the Tropical Export Company. It is very common for executives to arrange for one or more of their children to be employed by the company. Nepotism is one of the bonds that holds the organizational culture together. Karl worked in many different locations including Playa Negra before his promotion to the general manager's slot in Bocagrande. Karl is very effective during crises, perhaps in part due to his military background. He said the only remaining disaster that had not touched Bocagrande during his tenure was a volcanic eruption. Karl is described by his subordinates with the English word "pusher," meaning one who gets things done through an insistence on task completion.

Table 1
Demographics of Survey Participants

<u>Department</u>	<u>Playa Negra</u>			<u>Bocagrande</u>		
	<u>Total</u>	<u>TQM</u>	<u>Non-TQM</u>	<u>Total</u>	<u>TQM</u>	<u>Non-TQM</u>
Production	44	22	22	28	9	19
Controller's office	12	5	7	12	3	9
Materials	9	4	5	3	-	3
Engineering	9	3	6	9	7	2
Legal	-	-	-	1	-	1
Transportation/exp.	5	3	2	4	3	1
General Manager's office	1	-	1	5	5	-
Quality control	7	7	-	3	-	-
Packaging	2	2	-	-	-	-
Labor relations	2	-	2	5	3	3
Research	1	1	-	-	-	-
Total	92	47	45	70	33	37
<u>Years of Service</u>						
0-5	5	1	4	4	2	2
6-10	25	14	11	13	6	7
11-15	24	13	11	15	6	9
16-20	10	4	6	11	6	5
More than 20	25	13	12	24	12	12
Missing information	3	2	1	3	1	2
Total	92	47	45	70	33	37
<u>Age</u>						
18-25	1	-	1	3	1	2
26-35	37	23	14	15	5	10
36-45	34	16	18	30	17	13
Over 45	17	8	9	16	7	9
Missing information	3	-	3	6	3	3
Total	92	47	45	70	33	37
<u>Gender</u>						
Male	84	46	38	67	31	36
Female	8	1	7	3	2	1
Total	92	47	45	70	33	37
<u>Occupational Level</u>						
Assistant foremen/unskilled	7	1	6	1	0	1
Foremen	31	15	16	2	-	2
Skilled technician	13	7	6	14	5	9
Unit manager/assistant	30	18	12	7	1	6
Supervisor/professional	10	5	5	31	14	17
Department head/manager	-	-	-	15	13	2
Missing information	1	1	-	-	-	-
Total	92	47	45	70	33	37

Table 2
Managerial Opportunism versus Policy Deployment Strategies for Implementing Total Quality Management

Factor	Observations Relating Factor to Managerial Opportunism (Bocagrande)	Observations Relating Factor to Policy Deployment (Playa Negra)
Description of implementation process:	Managers in council developed consensus view of TQM priorities and implementation strategy before pushing it downward	Massive training and implementation of quality action teams concurrent with consensus building process in council.
General manager's role:	General manager coopted council to force preferential treatment of his proposals	Gen. manager allowed council to develop autonomous consensus while pushing basic TQM downward.
Initial policy deployment:	Limited to preparing council & facilitators	TQM introduction, leadership training, prob. solving within functional teams. Pushed by GM through internal coordinator.
General change in employee involvement:	None until manager's council was prepared to diffuse TQM to the lower levels of the hierarchy.	Employees involved in functional teams in established units so hierarchy was not threatened. Databased dialogue used within established patterns.
Impact of department heads/supervisors:	Socialized dept. heads allowed general manager to co-opt council.	Dept. heads were unable to cooperate without leadership. Turf consciousness precluded cross functional teams. Quality council did not develop autonomy.
Risks for general manager:	Easy to slip into autocratic behavior. Socialization of department heads in quality council caused them to look to the general manager for guidance. The more they depended on the general manager the less autonomous they became.	GM risked alienating dept. heads if he pushed to hard too fast at lower levels. GM limited TQM policy deployment at lower levels to measures perceived by department heads and superv's as helping them.

Given his style of pushing to get results, Karl was eager to implement the different projects he envisioned -- so eager that he unabashedly manipulated the quality council into what he called "a manager's council." He expressed discontent that some of the people on the council disagreed with him, so he "rotated" them off the council and replaced them with several of his direct reports whom he could count on for support. Given the employee's willingness to accept a high level of direct control from the general manager, Karl's actions are by no means unusual.

However, his subordinates complain about his inconsistency from one day to the other but accept it as the general manager's prerogative.

Karl could be characterized as one who was deeply concerned for the welfare of his employees, consistent with the paternalistic background of the company. The other side of this paternalism was the command and control orientation of the expatriate managers. Karl's military background and his family's roots in the neocolonial past of the company probably both contributed to his command and control orientation and desire for direct control.

Karl had grown up within the company and as an adult worked in remote locations for more than 15 years; he was strongly socialized to the company town culture found in the production divisions and therefore somewhat insular. In contrast to Armando, who attempted to develop social contacts outside the company, Karl spent most of his free time with company employees or contractors. Though very capable and intellectually gifted, Karl's insularity made him somewhat resistant to change. Though he understood TQM, he continued to exhibit the strong direct control general managers always had. Managerial opportunism resulted.

Observations/Vignettes

The direct control (i.e., orders issued by the powerful -- Perrow, 1986) of the general managers was significant. It was based on the power given to the position by the company and the cultural emphasis on high power distance. Historically, the general managers had always been expatriates and operated in relatively isolated locations managing operations that faced great uncertainty in terms of governmental and union relations and production conditions. These high levels of uncertainty, coupled with the neocolonialist orientation of the company, gave the role of the general manager great power over the employees and others dependent on the company. For example, one Spanish businessman stated that many years ago he bought the first car owned by a "civilian" (i.e., non-company resident) in Bocagrande. When it was delivered on the company train, the general manager initially refused to allow it to be unloaded saying he hadn't given his authorization. Thus, the general manager had been and continued to be seen as a very powerful figure within the company towns.

High power distance continued to be evident in the relationships between superiors and subordinates. Superiors commonly expressed the need to dominate subordinates. For example, a subordinate, a professional, threatened to quit if he did not receive a raise in his salary to increase it to a level comparable to that of other employees at his level. His manager swore the human resources manager to secrecy and said, "Julian is very good." The inference was that subordinates should not be told by their superiors how valuable they were because such knowledge would give them power. For another department head, hierarchy was more than simple power associated with a senior position. It had a raw element to it wherein his authority could not be questioned. He expressed the explicit desire that his subordinates fear him. His

preference for primitive domination was extreme but such a desire for control over subordinates was not unusual in the corporate culture. He actually asked the human resources manager (i.e., the author) to do a survey feedback of his department to find out if his subordinates held a sufficient degree of fear for him. Some of the more interesting stories came out as people stood around the bar in the evenings discussing how the Americans had been very strict in the past, in the neo-colonial era before 1970. One relatively uneducated individual who had become a senior level manager related how he had learned English; he said, "It was easy. My boss said, 'No Spanish!'"

By reviewing some of the qualitative data regarding the TQM implementation process, obtained through participant observation, one can better understand how policy deployment, as implemented in Playa Negra by Armando, had a more beneficial impact than the managerial opportunism of Karl.

Involvement of the Leaders With the Quality Councils

Both general managers had attended seminars where they were taught that TQM practices involved employee involvement and relative autonomy for the quality council, the group appointed to guide the TQM process. Part of Armando's understanding of the process was that he should not intervene in the quality council's activities. He used his understanding of the need for an autonomous council to restrain himself in the quality council meetings he attended. His actions were guided by the policy he had deployed, which included autonomy for the council. He was able to avoid the culturally induced reflex of directing the activities of the council because he had adopted a policy toward TQM. This policy became a cognitive road map that he followed.

The council proved capable of taking some initiative after 18 months of marginal activity, but this breakthrough occurred only after Armando finally ordered them to remain in the room until they developed a plan to make the quality council effective in its leadership of TQM. His direct control was consistent with the style of leadership practiced in Morazan, but he removed himself from the discussion to foster the autonomy he perceived as essential for a quality council within TQM. After his departure, the quality council chose to replace the ineffectual leader of the quality council, a young expatriate controller, with the second-in-command, the production manager.

An outsider might wonder how there could be such a difference between the power of the general manager and the second-in-command. The second-in-command was highly respected but not feared in the same way as the general manager. There can only be one maximum authority in the hierarchy, embedded in the high power distance Latin society, of the production division. The individual filling that role deals with most of the decisions required to resolve uncertainty, a basic source of power within organizations (Crozier, 1964).

In contrast to the policy deployment of Armando, Karl, the general manager of Bocagrande chose to co-opt the quality council and use it to opportunistically pursue his own agenda for the division. Given the organizational members' willingness to accept a high level of direct control from the general manager, his actions were by no means unusual. He told me that the council was a "manager's council" that he controlled. He related one anecdote to the author regarding the control of the cognitive premises for action, an example of an unobtrusive control described by Perrow (1986). Those who achieved the rank of department head were usually very skillful at organizational politics; they gave ample consideration to what they perceived the desires of the general manager to be. According to Karl, "Even if I ask a question, they are trying to guess what's on my mind."

Another example of the power of the control over the cognitive premises for action in a high power distance setting was found in a packaging subsidiary of the Tropical Export Company, which was not surveyed due to its dissimilar context -- it was an urban manufacturing facility lead by professional engineers. The general manager was asked by his second-in-command, the head of the quality council, not to attend the council meetings until the members had a specific proposal to present to him. His second-in-command believed that if the general manager were present he would unduly sway the council, thereby precluding genuine participation. Simple questioning on the part of the general manager was enough to influence the council members because they would attempt to determine what it was the general manager wanted and then tailor their comments and suggestions accordingly. Although the second-in-command still possessed a great deal of authority, he was not accorded the same deference as the general manager.

Thus, in reference to the first proposition, one could conclude that the leader is too prominent in such high power distance settings to be able to effectively participate in a quality council.

Allocentrism and Cross Functional Teams

The traditional importance given to hierarchy and "turf" made it difficult to introduce cross functional teams in Playa Negra and Bocagrande. Allocentrism, with its emphasis on in-groups, fosters the turfism that TQM is to break down through cross functional teams.

Department heads and supervisors were regularly described by their subordinates in the production divisions as people to fear. Subordinates found it difficult to interact with peers from other departments when they were unsure about what their supervisor or department head desired. This demand from superiors for personal loyalty from their subordinates, coupled with allocentrism, constrained cross functional problem solving in both the production divisions. Ignoring these cultural contingencies and attempting to impose cross functional teams too soon

caused the TQM implementation process to falter initially in Playa Negra, confirmation of proposition three.

The TQM coordinator in Playa Negra related how they addressed this problem. After encountering initial resistance, the general manager, Armando, advised him not to push interdepartmental problem solving quite so aggressively; instead he suggested limiting the problem solving teams to departments until the department heads became more accepting. Later, Armando instructed him to adopt the following hybrid solution, which the TQM coordinator described as:

A key operations manager was assigned a quality problem. He was then empowered to choose the members of his or her team which included people from other departments. These people met and analyzed the specific problem. Significant improvements in quality outcomes resulted. The market feedback has been very positive.

Allowing respected individuals to name their own team members builds upon the cultural value of traditional respect for leaders. The team leaders named people they felt were trustworthy and competent with regard to the problem to be solved and with whom they enjoyed mutual respect. Though the team members came from various departments, they found common ground in their strong relationships with the team leader as well as their perceived competency relating to the problem under study. Thus, this solution succeeded because it was compatible with existing cultural values concerning leadership (i.e., high power distance), hard work and loyalty, and took into consideration the strong sense of in-group feeling (i.e., allocentrism) as well as the competence of the individuals chosen. Armando's awareness of these culturally based unobtrusive controls facilitated the TQM implementation process, thereby confirming proposition two. One must recall that Armando was native to the culture whereas Karl was not; it is logical that Armando would devise a culturally astute means of implementing cross functional teams that promoted TQM while not asking the participants to stray too far from their cultural assumptions.

Quantitative

Policy deployment at multiple levels of the organization proved more effective than managerial opportunism. This was tested by contrasting the participants of the TQM program with the non-participants in both Playa Negra and Bocagrande. Since the samples were small, with non-normal distributions, nonparametric tests were used. The means were ranked for each of the variables using the Kruskal-Wallis test. The median test was also employed to contrast the TQM and non-TQM groups using the survey variables previously discussed; it ranked cases above and below the median. In the case of Playa Negra, the TQM participants were

significantly differentiated from the non-participants in terms of the following variables: inclusion, upward influence, activity feedback, and attitude toward TQM, as shown in Table 3.

The results for Bocagrande (see Table 3) differentiated the TQM participants from the non-participants only with regards to inclusion, which was higher for TQM participants. Non-participants, however, reported a higher level of organizational commitment. None of the Kruskal-Wallis tests were supported by significant results from the median tests. Since nonparametric tests are fairly weak, the significant findings for the Kruskal-Wallis tests reported for Bocagrande in Table 3 should be viewed with caution. Furthermore, there are alternative explanations for the significant findings in Bocagrande that may be unrelated to TQM. For example, inclusion may be higher for the TQM participants in Bocagrande because 13 of the 15 subjects in this group are at the bonus eligible level. They participate in managerial decision making because of their position, not their TQM involvement. Organizational commitment could have been higher for non-TQM respondents because the previously mentioned executives are better educated and have more alternatives outside of the organization. Thus their dependency on the company may be weaker than those with little education who have more limited employment alternatives. Those with little education would have difficulty finding jobs that paid more than the ones they held within the company. Therefore, we cannot conclude that TQM had an impact in Bocagrande, as measured by the survey results reported in Table 3.

In conclusion, Armando, the leader in Playa Negra, simultaneously focused on multiple levels of the organization through TQM policy deployment. The preceding statistical results from Table 3 show that Armando's policy deployment had an impact. In contrast, Karl's managerial opportunism (i.e., first aligning the quality council with the leader's perception of TQM) did not have a comparably significant impact. One could assert that Karl really had not implemented TQM but rather his perception of how TQM techniques could serve his agenda -- i.e., managerial opportunism. The greater success of policy deployment versus managerial opportunism confirms proposition four.

DISCUSSION

Ethnographic

The conceptual implications for practice point to the necessity of acknowledging and building upon cultural and organizational contingencies. If high power distance is prominent, one cannot expect a quality council to assume an autonomous role if the general manager or leader is present -- even as a silent observer. On the other hand, relatively leaderless groups were also incapable of functioning effectively. Using the second-in-command to lead the quality council seems to satisfy the need for leadership as well as allowing the quality council members

to feel relatively free to express their views, thereby fostering a measure of autonomy essential to the quality council within TQM.

Table 3
Significant Differences Between TQM and Non-TQM Respondents

			Playa Negra Kruskal-Wallis Nonparametric Test					
Variables: Inclusion			Upward Influence		Activity Feedback		Attitude Toward TQM	
	<u>Mean rank</u>	<i>n</i>	<u>Mean rank</u>	<i>n</i>	<u>Mean rank</u>	<i>n</i>	<u>Mean rank</u>	<i>n</i>
In TQM	52.78	46	55.49	47	51.81	47	54.31	47
Not in TQM	39.07	45	37.11	45	39.8	44	38.34	45
$(\chi^2=6.18; p=.0129)$			$(\chi^2=11.01; p=.0009)$		$(\chi^2=4.74; p=.0295)$		$(\chi^2=8.33; p=.0039)$	
			Playa Negra Median Nonparametric Test					
Variables:			Upward Influence		Activity Feedback		Attitude Toward TQM	
			> Median	< Median	> Median	< Median	> Median	< Median
In TQM			22	25	28	19	26	21
Not in TQM			11	34	15	29	11	34
			Median=3.33; $(\chi^2=4.07; p=.0436)$		Median=3.33; $(\chi^2=4.94; p=.0262)$		Median=3.67; $(\chi^2=7.88; p=.0050)$	
			Bocagrande Kruskal-Wallis Nonparametric Test					
Variables: Inclusion			Organizational Commitment					
	<u>Mean rank</u>	<i>n</i>	<u>Mean rank</u>	<i>n</i>				
In TQM	39.79	34	28.98	33				
Not in TQM	30.34	35	39.7	35				
$(\chi^2=3.85; p=.0499)$			$(\chi^2=5.00; p=.0254)$					

As indicated previously, Playa Negra initially followed conventional TQM methodology and assigned cross functional teams. Allocentrism and "turfism" hindered the effectiveness of these groups so they resorted to functional teams, much like quality circles. When Armando realized that many organizational problems were of a cross functional nature, he encouraged the quality council to have respected managers lead the quality action teams and choose their own

members. This solution is consistent with both high power distance and allocentrism, in that a recognized leader is free to choose members from his or her in-group. Such an in-group may reflect personal loyalties from various departments rather than functional area loyalties, thereby permitting a cross functional approach to operate. This may be a way to avoid the resistance initially faced when cross functional groups are imposed on organizational systems susceptible to turfism; one achieves cross functional problem solving and communication but in a culturally sensitive manner.

Quantitative

Armando's policy deployment approach was effective because it was based on a cognitive framework that considered the critical organizational and cultural contingencies and attempted to change the organization at multiple levels simultaneously. This cognitive road map was important in countering the strong cultural pull of autocratic leadership. The clarity and consistency in TQM training and quality action team activities fostered a more positive attitude among participants than non-participants.

Armando realized that a cascading approach, from top to bottom, would not produce the desired change in that his immediate subordinates, the department heads and supervisors, would likely be obstacles as they would see their power and autonomy threatened. Therefore, he did not expect them to change rapidly. He correctly assumed that those at the lower levels would prove very interested in TQM as it offered them a chance to have more impact through collaborative problem solving. On several occasions he was encouraged by consultants to press his direct reports to take more initiative in the quality council and to be more accepting of cross functional teams. However, he refused to be strongly assertive, "I know I could beat them over the head and, like good soldiers, they'd do what I want. However, I could be transferred at any time and total quality would stop if they didn't assume ownership."

The other leadership approach observed in this study, managerial opportunism, did not produce significant differences that can be solely attributed to TQM training and participation in quality action teams. Opportunism created an ad hoc inconsistency that allowed capriciousness to manifest itself as autocratic behavior (e.g., Karl's co-optation of the quality council).

Therefore, one can conclude that a simultaneous focus on multiple levels of the organization through TQM policy deployment at various levels of the organization (i.e., the saturation approach) was more effective than a cascading approach handicapped by managerial opportunism. Table 3 shows the attitudinal differences of the TQM participants, reflected in terms of inclusion, upward influence, activity feedback, and positive attitude toward TQM, in relation to non-TQM participants in Playa Negra. This was not the case in Bocagrande.

However, in a sense, Karl had not really implemented TQM but rather his perception of how TQM techniques could serve his agenda, i.e., managerial opportunism.

Implications

Thus, the initial action steps one might suggest, in regard to cultural contingencies, when implementing TQM are for the leader to first interpret the organizational and national culture (Schein, 1992). Leaders should be sensitized to the culture of the specific location. The next step is to realize that cultural continuity can be a foundation for innovation while providing a satisfying environment for the employees (Salipante, 1992; Fry & Srivastva, 1992). This involves looking for solutions that incorporate cultural contingencies in a way that promotes rather than hinders the implementation process; the leader needs to make effective use of unobtrusive controls (Perrow, 1986), based on culture (e.g., Armando's cross functional teams) in the implementation process. The leader also must understand that the innovation needs to be modified during the adoption process (Lewis & Seibold, 1993); an off-the-shelf or cookie-cutter approach to innovation is especially risky when dealing with cultural contingencies.

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AUTOMATION IN BANKING SERVICES, MANAGERS' PERCEPTIONS AND BANK PERFORMANCE: THE UAE EXPERIENCE

Kamel E. Ghorab

A survey of thirty-eight UAE bank managers was conducted for the purpose of investigating their perceptions toward automation. Analysis of the survey data combined with collected financial performance data yielded several important findings. First, the UAE banks are adopting automated banking technologies in the expectation of improving their equity multiplying effect. Second, managers perceived improved service quality and the realization of a distinct competitive advantage to be the most important benefits arising from banking automation. The system security, training personnel on the use of the system, and increased system development cost were perceived as the most important problems in operating the automated system. Third, analysis of the interrelationships among bank managers' beliefs, experience, and participation on one hand, and their attitudes toward automation on the other, were successful in identifying the significant influencing beliefs on their perceived benefits and problems of automated systems.

United Arab Emirates' (UAE) local banks have been under growing pressure from their foreign counterparts to become more competitive and advanced in order to capture a reasonable share of the fast-growing total demand on banking services. While anxiously searching for solutions, these banks have learned that one of the most important competitive weapons is an efficient and effective operations system, a system that is capable of increasing their business while decreasing average operations costs.

Information Technology (IT) possesses the capability to facilitate the daily business operations, to reduce the costs of these operations, and to attract new business. In recent years,

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radical changes have been taking place in the banking sector as various automated banking systems and technologies have been introduced to many banking functions in the UAE.

Many researchers have investigated various issues related to choosing and planning for the use of advanced information technologies in manufacturing (Steele, 1983; Bullinger, 1986; Meredith, 1986). Others have studied the role of management perceptions in the automation process (Meredith & Hill, 1987; Tambak & De Meyer, 1988; Farhoomand, 1990). Alpar (1992) has investigated the managerial implications of automating bank functions; and Apcar (1987) has reported the effect of automation in banking. Despite growing interest in the area, little attention has been paid to the role of management perceptions toward automation in the automation process in general (Meredith & Hill, 1987) and in banking in particular (Alpar, 1992). These and other controversial results concerning the impact of automating services on banks' performance make further empirical inquiries necessary.

Theoretically speaking, managers' perceptions are important factors that affect the system's acceptance and hence its use (Fishbein & Ajzen, 1975; Davis, 1986; Davis, Bagozzi & Warshaw, 1989). Empirical investigation of these perceptions and the factors that influence them should be useful in understanding their role in adopting, accepting, and using an automated banking system.

The current study is an attempt to investigate bank managers' perceptions towards automating their bank systems. In order to achieve this goal, the study seeks to find answers to such basic questions as: How do UAE banks justify their huge IT investment? What kind of benefits can IT realize? What potential problems might a bank encounter in the process of using an automated information system? What are the important factors that affect the perceptions of bank managers towards automating their bank operations?

BACKGROUND

A considerable amount of literature investigates the strategic and operational impacts of automated systems on firm performance. However, much of this literature consists of empirical studies based on the economic or technical expectations of experts and concerned parties (Humphrey, 1987; Tambak & De Meyer, 1988; Alpar, 1992; Alpar & Kim, 1992; Jones, 1993; Palmer, 1994). In their analysis of the effect of automation on firm efficiency, most of these studies have only considered the cost factor. They have not equally considered the revenue factor. Experts tend to disagree on the effects of such systems on short-term cost reduction objectives (Lawrence & Shey, 1986; Roach, 1989; Alpar, 1992; Alpar & Kim, 1992). Nevertheless, they all agree that the real advantages of implementing these systems normally materialize in the long-run (Apcar, 1987; Humphrey, 1987; Alpar, 1992).

Strategic Impact of Banking Automation

The importance of information for effective management, as a fundamental concept of survival and prosperity, hardly needs to be argued. However, it is necessary for developing countries, such as the Arabian Gulf States, to go beyond this concept. The huge spending on computers and computerized systems reflects the interest of these countries in IT as a means of handling managerial problems.

The strategic application of IT in the banking sector may be the sole and most important factor in determining winners and losers (Sinkey, 1992). However, research reveals much doubt that banks have succeeded so in reaping satisfactory benefits from IT investments (Palmer, 1994). Roach (1989), for example, claims that despite the large investments in IT, productivity in the service sector did not increase much in the period from 1962 to 1988. He, therefore, concludes that IT investments did not pay off. On the other hand, Alpar & Kim (1992) conclude that IT did help to decrease the average costs of American commercial banks. Notably, they have performed their analysis at the bank function level and adjusted costs to total funds in the function.

In the competitive environment of the 1990s, technological innovation presents banks, through the Electronic Funds Transfer System (EFTS), with an opportunity for gaining a competitive advantage by controlling costs, generating revenues, or both (Sinkey, 1992). EFTS is a generic term referring to various computer-based technologies for delivering banking services. The basic EFT components are Automated Teller Machines (ATMs), Automated Checks Clearinghouses (ACHs), and Point-of-Sale systems (POSS). In addition, other services such as cash management, telephone bill payment, automatic transfers, checks verification, checks truncation, and home banking are part of the total EFT picture.

Perceptions of Managers Towards Automation

In order to determine the full range of managers' potential perceptions toward banking automation, the literature within the field of IT adoption was consulted. Farley et al. purchasing model (1987) suggested that the perceptions about automation are influenced by the current state of automation in the firm. The perceived benefits and problems of automation will in turn affect the attitudes toward automation. On this basis, it is contended that managers are concerned with technical and economic uncertainties surrounding new technology adoptions (Tambak & De Meyer, 1988). Using this model as a starting point, the study predicated two streams of research: the theory of reasoned action (Fishbein & Ajzen, 1975), and the model of innovation decision process (Rogers, 1983). Both models will be presented in the next section on the study methodology.

Published results on managers' perceptions towards automation are diverse. For example, Meredith and Green (1986) have emphasized the importance of employees' involvement in various stages of technology introduction. However, Farhoomand et al. (1990) have found that managers perceived this aspect of automation to be the least serious problem that arises from an increase in the firm's automation. Their study also indicated that managers perceive "cost reduction" to be a less important benefit arising from an increase in the firm's automation system than "improved flexibility" and "product quality." This is what the present analysis will attempt to examine.

METHODS

Study Model

As aforementioned, the literature suggests two models that can help in deciding on adopting an automated management information system:

1. the theory of reasoned action (Fishbein & Ajzen, 1975) which maintains that the intention to adopt a certain automated information system is influenced - among other things - by the managers' beliefs about the potential outcomes of actually adopting an innovation; and
2. the model of innovation decision process (Rogers, 1983) which states that, based on the perceptual characteristics of an innovation, an adopter forms a certain attitude toward that innovation during two stages of the adoption process - the persuasion stage and the confirmation stage. First, a favorable attitude would lead to a behavioral intention during the persuasion stage of the decision process. Second, attitude formation takes place in the confirmation stage of the adoption decision process when the adopters reevaluate their attitudes toward the innovation depending upon the correspondence between their prior expectations and the actual outcomes of the innovation.

The aforementioned two models will be used as a theoretical basis to the empirical investigation in this study.

Sources of Data

Published financial information on 44 local and foreign banks in the UAE was retrieved from The Gulf News Agency Banking and Insurance annual reports. For this research, the banks' financial data from 1985 through 1993 were available.

A specifically designed questionnaire was used (see Appendix). Examining all questionnaires used in related empirical literature, consulting with several faculty members of

the department of business administration, and discussing alternative questions with bank managers constituted the initial steps to develop this study's questionnaire.

The questionnaire contained five questions. Only four of them are related to this study. The first question, which consisted of ten items, elicited data pertaining to the perceived benefits of automation in such areas as cost reduction, revenue increase, service quality, and control. The second question included another ten items to gather information on perceived problems related to: inadequate financial justification of the system, resistance to change, and system implementation and maintenance. Each item in the first two questions had a five-point Likert scale ranging from "very important" to "not important at all." The third question included four sections to measure four different personal beliefs and attitudes: (1) beliefs about computers, (2) beliefs about new technology, (3) attitudes toward banking automation, and (4) personal participation in developing or acquiring the bank's current system. The last question investigated the different features of a current automated system and collected demographic data on the bank.

The study utilized a set of ten semantic differential items to measure each manager's beliefs or attitudes. Each scale had a five-point scale ranging from "one" to "five." The average of all ten scales for each belief or attitude constituted its index.

A panel of seven industry experts and university academics have subjectively assessed every participant bank's level of automation. A score between (zero) and (five) was assigned to each bank based on the availability of electronic facilities. These facilities include data processing equipment to manage customer accounts, an electronic credit management facility, ATMs and the functions they perform, an electronic network communication arrangement among the bank headquarters and branches, a worldwide interbank telecommunication network such as SWIFT, electronic payment services, and POS machines and telephone/home banking systems.

A sample of ten banks has participated in testing the validity of the questionnaire. The responses and comments of these bank managers were subsequently used to modify the instrument. Testing the internal structure stability of the questionnaire, it appeared that Cronbach Alpha for the first two questions was always higher than 0.82. It could not be increased if any item was dropped from any of these questions. Alpha was at least 0.75 for the items in question three and four. The conclusion was that the instrument was highly stable.

Between January and July of 1994, 42 local and foreign banks that operate in the UAE were visited. During those bank visits, the bank managers in charge of making system automation decisions using the above-mentioned questionnaire were interviewed. The choice of increasing the managers sample through interviewing a number of managers in each bank was available. However, to avoid intraclass correlation, only a single manager for each bank

answered the questionnaire. Since the information systems in question were centrally managed, only central information managers were viable candidates for the study. Acknowledging the likely high correlation between central information managers' responses, it seemed more reasonable to restrict the interviews to the banks' Central Information Officer or equivalent.

Based on available financial data, the possible sample size ranged from 39 to 44 banks. However, this study concentrated its analysis on 38 banks that had complete financial time-series data on record, had an automated system, and agreed to participate in the study in order to test the long term effects of banking automation. This sample accounted for 88.5% of all banks in the UAE. Although the sample is not large, it is enough for an exploratory study of its nature.

ESTIMATION AND RESULTS

The study analysis proceeds in two steps. The first step attempts to examine the sample banks' economic justification of their investment in automation according to the theory of reasoned action. The second step endeavors to analyze the sample bank managers' perceptions toward automation according to the model of innovation decision process. Data on the most recent financial records, 1993, is utilized in estimating these models.

Justification of Investment in Automation

The well-known return-on-equity (ROE) model is utilized in this study to analyze a bank management's efficiency performance. It states that (Sinkey, 1992):

ROE	=	PM	*	AU	*	EM
<u>Net Income</u>	=	<u>Net Income</u>	*	<u>Operating Income</u>	*	<u>Average Assets</u>
Average Equity	=	Operating Income	*	Average Assets	*	Average Equity

The ROE model implies those electronic banking needs to support the bank's profit margin (PM) by holding costs down and needs to pump up the bank's asset utilization (AU) by generating additional service revenues. To the extent that a bank can use electronic banking as an aggressive tool to expand its asset base safely, it can increase its equity multiplier (EM), given a fixed capital base. With a constant return on assets (ROA = PM * AU), this greater leverage will mean a higher return on equity (ROE). If this higher ROE can be achieved without changing the market's perception of the bank's risk exposure, the bank's market value should rise. (Sinkey, 1992).

In order to answer the question of how the UAE banks justify their huge investment in IT, multivariate regression analysis is performed. The following regression model is employed.

$$\begin{Bmatrix} PM \\ AU \\ EM \end{Bmatrix} = \beta_0 + \beta_1(BankAutomationLevel) + \beta_2(LogofBankTotalLoansAmount) + \epsilon$$

It tests the significance of the relationship between PM, AU, and EM as dependent variables, and the bank automation level controlled for the bank total loans amount as independent variables. Total loans amount is used as proxy for the bank size. Total assets amount was not used because of its high structural correlation with both AU and EM. The dependent variables in the model, by definition, are assumed to reflect changes in a bank's revenues and expenses that result from changes in its profitability, assets utilization, and efficient equity deployment.

In 1993, the profit margin has ranged from a minimum of -.20 to a maximum of 1.13 with an average of .38. As for the assets utilization, it has ranged from .02 to .30 with an average of .05. But, the sample equity multiplier has ranged from 1.19 to 22.06 with an average of 9.18. In addition, the loans amount has ranged from 43.58 million Dirhams (1 Dirham = \$0.27) to 10,036.20 million Dirhams with an average of 1,575.10 million Dirhams. Table 1 shows the distribution of participating banks among the different automation levels.

Table 1
Automation Levels of Participating Banks

Automation Level	Number of Banks	Percent
1. (lowest level of automation)	2	5.3
2. (low automation)	8	21.1
3. (Average automation)	12	31.6
4. (high automation)	11	28.9
5. (highest level of automation)	5	13.2

Of course, when multivariate analyses are undertaken, it is not sufficient just to look at the characteristics of the variables individually. Information about their joint distribution must also be obtained. Similarly, identification of outliers must be based on the joint distribution of variables (Norusis, 1990). Investigation of information on the multivariate distribution of the above variables indicates its normality and equality of variance-covariance matrices. In addition, unreported Pillai's, Hotelling's, and Wilk's statistics and their approximate F-values show that the null hypothesis that the population means do not differ from zero is rejected.

Table 2 shows Univariate F-tests for the proposed regression model. The relationship between EM and both automation level, AUTOLVL, and the logarithm of total loans, log (LOANS), is significant at .01. Further investigation of this relationship seems necessary to identify which independent variable is responsible for changes in EM.

Table 2
Regression of Profit Margin, Assets Utilization and Equity Multiplier on Automation Level and Log (Loans): Univariate F and t-tests with (2,35) d. f.

Regression				Covariate			
Variable	Adjusted R ²	F	Prob > F	Term	Beta	t	Prob > t
PM	.0151	1.283	.290	AUTOLVL	-.2956	-1.499	.143
				Log (LOANS)	.0739	0.375	.710
AU	.0212	1.401	.260	AUTOLVL	.3291	1.674	.103
				Log (LOANS)	-.1905	-0.969	.339
EM	.1859	5.224	.010	AUTOLVL	.3976	2.301	.032
				Log (LOANS)	.2636	1.470	.150

As can be seen from Table 2, bank size, that is, log (loans), does not significantly affect its performance. In other words, returns to scale do not overshadow the effect of banking automation on performance. In fact, although increasing the level of automation seems to hurt a bank's profit margin in the short-run, it enhances the bank equity multiplier. This equity multiplier is the result of accumulated long term effects of expanding bank assets base given a fixed capital base. This later effect should lead to an increase in the market value of a bank and add to its stockholders' wealth. However, Table 3 should be viewed with some caution. Still, the data suggest that automated banking systems have become the norm, not the exception, in today's UAE banks. The only difference between them is in the degree of automation adopted by each bank.

This finding seems to disagree with some previously reported results that average costs of commercial banks do actually decrease due to the introduction of information technology to banking functions (Alpar & Kim, 1992). It also contradicts other reported findings that average banking costs first fall and then rise with bank size (Humphrey, 1987). Bank size did not appear to have a significant effect on the relationship between automation and economic performance. These two studies (Humphrey, 1987; Alpar & Kim, 1992) have modeled the overall bank production setup with a cost function including major input factors and outputs. This made it possible to measure the impact of IT on total costs while controlling for other input factors. The above-mentioned studies (Humphrey, 1987; Alpar & Kim, 1992) suggest that in order to achieve the given output volumes while minimizing costs, it was better for banks to

demand additional IT rather than labor. This is compatible with our finding that performance improved with higher levels of automation, although our sample, data, and analysis approach were different from theirs. This study considers the costs and revenue dimensions of bank performance whereas both of these studies focused on the cost aspect. At the same time the study findings agree with other studies, e.g., (Davis, 1986; Apcar, 1987; Humphrey, 1987; Alpar, 1992) in that most of banking automation's advantages appear in the long run.

Perceived Benefits of Banking Automation

Table 3 presents the survey results of perceived banking automation benefits. It shows that the mean scores of the responses for all the perceived benefits were at least "relatively important." It also indicates that "improved service quality" is apparently the biggest achievement of banking automation; with a standardized score of 4.365, it ranks number one among all perceived benefits. "Improved accuracy" and "reduced customer complaints" follow in the second and third positions, respectively. Notice that both aspects are related to improved service quality. This proves that banking automation is perceived as a successful strategy to increase these banks' service quality and consequently increase their ability to compete in the industry. The reported improvement in service quality is obviously going to evoke more interest among UAE banks for further automation endeavors. This result agrees with Hughes (Hughes, 1990) and Beyer's (1994) findings that the use of advanced IT in an industry leads to an increase in the overall levels of information technology in use in this industry.

Table 3
Means, Standard Deviations, Standardized Scores and Ranks of Perceived Benefits

Variable	Mean	Standard Deviation	Standardized Score ^(a)	Rank
Increased Volume	4.16	.68	1.706	5
Business Flexibility	4.08	.75	1.440	7
Reduced Cash	3.63	.94	0.670	9
Reduced Labor Cost	3.61	1.15	0.530	10
Improved Service Quality	4.79	.41	4.365	1
Competitive Advantage	4.42	.86	1.651	6
Improved Accuracy	4.58	.55	2.873	2
Reduced Complaints	4.55	.69	2.246	3
Improved Morale	4.08	.78	1.385	8
Improved Productivity	4.42	.76	1.868	4

(a) standardized score = (mean -3)/standard deviation.

"Increased volume" and "improvement in employees' productivity" are also clearly recognized benefits among the banks surveyed. With standardized scores of 1.706 and 1.651, they rank fourth and fifth, respectively. As a service provider, a bank has no means of storing its service. Increasing its operations efficiency is one major aspect of successful bank management. Operations efficiency is another factor that reflects the cost reduction and increasing revenue objective in managing a bank. Identifying this variable as an important aspect in banking automation is in agreement with Alpar (1992) and Apcar (1987).

"Realized competitive advantage" ranks as the sixth most important contribution of banking automation. Although advanced use of IT technologies in automating the banking systems leads to increasing competition, it helps the IT bank leaders to achieve higher revenues and reduce their operating costs. Further steps in automating their systems are expected to allow them to enjoy further lower costs (Boston Consulting Group, 1968). This is in agreement with Sinkey's (1992) aforementioned argument.

Perceived Problems of Banking Automation

Again, the mean scores of the responses for all the perceived benefits, as depicted in Table 4, were at least "relatively important." "System security" appears as the major problem; with a standardized score of 2.710, it ranks first among perceived problems of banking automation. However, this obstacle has not slowed or prohibited UAE banks from pursuing automation. In fact, most banking automation equipment is the product of current advanced technology, and technical expertise is needed in order to operate it safely and securely. This result is in contrast to Farhoomand et al. (1990) who have found that managers perceived this aspect to be a less important problem in deciding to increase a firm's level of automation. This difference can be related to the fact that Farhoomand et al. study was not concerned directly with banking automation per se. In addition, a recent study by Culpan (1995) reported that end users in the manufacturing industry manifest attitudes and intentions toward IS that may differ from those of users in the service industry.

"Training personnel on the use of the system" ranks second as an important problem of automating bank services. Employees' involvement in developing the system is a crucial factor that affects its future success (Meredith and Green, 1986). Moreover, employees' training to operate and maintain such sophisticated systems are critical to the successful operation of these systems. This result is consistent with the recent findings of Tombak and De Meyer (1988).

"Time required to develop adequate software," "cost of developing the system," and "cost of operating the system" rank third, fourth and fifth, respectively. The finding of the cost of developing the system problem is at a variance with Farhoomand et al. (1990) who found that this problem is one little concern to managers when deciding on increasing the level of automation. However, the same finding is in agreement with the recent findings of Tombak and

De Meyer (1988), who contended that managers are concerned with economic uncertainties surrounding operations automation.

Table 4
Means, Standard Deviations, Standardized Scores and Ranks of Perceived Problems

Variable	Mean	Standard Deviation	Standardized Score ^(a)	Rank
Software Development Time	3.92	.82	1.122	3
Software Development Cost	3.79	.87	0.918	7
IS Developing Cost	3.87	.78	1.120	4
IS Operating Cost	3.89	.80	1.115	5
Employee Training	4.16	.64	1.813	2
System Security	4.68	.62	2.710	1
Customer Awareness	3.66	.71	0.930	6
Financing the System	3.74	.92	0.804	8
Increased Maintenance Cost	3.58	.89	0.652	9
Employee Resistance	3.16	.97	0.167	10

(a) standardized score = (mean -3)/standard deviation.

"Inadequate customer awareness" ranks sixth. As in, most third world countries, illiteracy and customer awareness constitute major problems in offering customers advanced technology equipment to use in accomplishing his banking needs. It takes a great deal of information dissemination and persuading to promote the new banking automation uses and limitations.

"Resistance to change" is the least important problem; with a standardized score of 0.167 it ranks tenth. Bank managers do not seem to worry about introducing the new automated systems to their staff. Our data do not support employees' resistance to change as an important area to worry about when considering banking automation.

Perceived Benefits, Problems and Managers' Beliefs

It should be interesting to examine the interrelationships among managers' perceptions (perceived benefits and problems) and their individual characteristics "(see below)" based on the model of innovation decision process (Rogers, 1983). The model implies that, based on the perceptual characteristics of a system, managers form a certain attitude toward it. A favorable attitude would lead to a behavioral intention during the persuasion stage of the decision process.

First, managers' related beliefs and previous experiences affect their perceptions toward the system. Second, managers reevaluate their attitudes toward the system depending upon the

feedback information that they receive on the system. Their active participation in adopting the system may help them in evaluating correspondence between their prior expectations and the actual outcomes of the system.

The current section intends to evaluate the relationships between these four groups of variables that interact with each other during the persuasion stage of the adoption decision process. For this purpose, a model will be proposed that will relate managers' perceptions, beliefs, experience, and active participation. Estimating this model will be used to understand the functional relationships among these four sets of variables.

Examining related literature, it was possible to identify five related characteristics that may influence managers' perceptions. They are: beliefs about new technology (Millman and Hartwick, 1987), beliefs about computers (Dutta, Cervený, Ghorab and Kasper, 1982), beliefs about banking automation systems (Sinkey, 1992), experience (Dutta et al., 1982), and active participation in developing or acquiring the system (Millman and Hartwick, 1987).

Before embarking on an analysis of the relationship between managers' perceptions and their individual characteristics, it is important to explain the steps that led to using a nonlinear model in examining these relationships. Due to the lack of a concrete theory that can predict the relationships among the independent variables in the model, we relied on examining the correlation matrix for these variables. Our purpose in examining this correlation matrix was to assess any multicollinearity problems among them.

Table 5
The Correlation Matrix For The Independent Variables In The Model

Variables	X1	X2	X3	X4	X5
X1	1.000	-.0773	.5084	-.0262	.4063
		p=.421	p=.101	p=.438	p=.006
X2		1.000	.0280	.1317	.0344
			p=.034	p=.0001	p=.419
X3			1.000	-.1218	.2811
				p=.233	p=.044
X4				1.000	-.0655
					p=.348
X5					1.000

(b) X_1 is belief about new technology, X_2 is belief about computers, X_3 is belief about banking automation, X_4 is active participation in adopting the system, and X_5 is manager's experience.

As can be seen in Table 5, the correlation coefficients were not considerably alarming; they range between $-.077$ and $.508$. Five correlation coefficients were significant at the level $.10$ or

less. Only the correlation coefficient of the relationship between "belief about new technology" and "belief about banking automation" reached .508 and was significant at .10 level; all other nine correlation coefficients had the value .4 or less. The interrelation between "belief about new technology" and "experience" reached .4 and was significant at .05 level. The other three significant correlation coefficients were less than .4 in value and either significant at .05 or .0001 levels.

Next, using the variance inflation factor method (VIF) to assess the relationship between every independent variable and all possible subsets of remaining independent variables, it appeared that there was no serious relationship of this kind. Further, we postulated that the relationship between everyone of the managers' perceptions and all their five individual characteristics was curvilinear. All twenty dimensions of managers' perceived benefits and problems were subjected to a polynomial regression analysis of the following form:

$$Y = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_4 + B_5 X_5 + B_6 X_1 X_2 + B_7 X_1 X_3 + B_8 X_1 X_4 + B_9 X_1 X_5 + B_{10} X_2 X_3 + B_{11} X_2 X_4 + B_{12} X_2 X_5 + B_{13} X_3 X_4 + B_{14} X_3 X_5 + B_{15} X_4 X_5 + B_{16} X_1^2 + B_{17} X_2^2 + B_{18} X_3^2 + B_{19} X_4^2 + B_{20} X_5^2 + \epsilon,$$

Where Y is one of the managers' perceived benefits or problems of automating bank services, X_i is every of managers' five individual characteristics. We do not claim a specific theoretical justification of this curvilinear equation.

The method used to estimate the model consisted of performing stepwise regression analysis. The partial F-test to let a curvature coefficient enter the equation was conducted at .10 level of significance.

The results of the stepwise regression analyses, with system perceived benefits as dependent variables are presented in Table 6. In addition to regression coefficients, the figures show the model R^2 value. The variables in the regression equations cumulatively explain between 10 (for improving employees' morale) and 41 percent (for helping to gain competitive advantage) of the variance in perceived benefits of banking automation.

"Managers' beliefs about computers" and "managers' beliefs about banking systems" appeared in most of the cases as significant predictors of perceived benefits of banking automation. This finding is in agreement with Huang and Sakurai (1990) and Alper (1992). In addition, "realized competitive advantage" is significantly affected by "bank managers' beliefs about computers." This is in agreement with Hughes (1990). Unexpectedly, "Managers' beliefs about new technology" appear to be unrelated to perceived benefits of the system. However, "managers' experience," and "active participation in adopting the current system" showed in few cases as significant predictors of perceived benefits of banking automation. This is in agreement with Dutta et al. (1982).

Table 6
Estimated Perceived Benefits Stepwise Regression Models ^(a)

Dependent Variable	Regression Model ^(b)	R ²	F
Increased Volume	Y = 3.107 + .061 X ₂ t = 7.29 t = 2.54 (.0001) (.016)	.15	6.44 (.016)
Business Flexibility	Y = 2.320 + .408 X ₂ t = 3.622 t = 2.789 (.0009) (.0084)	.18	7.78 (.0084)
Reduced Cash	Y = 3.404 + .0729 X ₃ - .0872 X ₃ ² t = 6.02 t = 3.525 t = 1.950 (.00001) (.0012) (.0593)	.26	6.217 (.0049)
Reduced Labor Cost	Y = 2.282 + .078 X ₃ t = 4.772 t = 2.959 (.00001) (.0054)	.196	8.76 (.0054)
Improved Service Quality	Y = 4.193 + .0343 X ₃ t = 18.98 t = 2.811 (.00001) (.0079)	.18	7.91 (.0079)
Competitive Advantage	Y = -3.773 + 3.867 X ₂ - .442 X ₂ ² t = -2.052 t = 3.983 t = -3.515 (.047) (.0003) (.0012)	.41	12.02 (.0001)
Improved Accuracy	Y = 3.293 + .0587 X ₃ ² t = 8.751 t = 3.134 (.00001) (.0034)	.22	9.82 (.0034)
Reduced Complaints	Y = 5.5307 - .2429 X ₃ t = 10.54 t = -1.904 (.00001) (.0600)	.09	3.63 (.0600)
Improved Morale	Y = 2.708 + .3175 X ₂ t = 3.857 t = 1.982 (.0005) (.0500)	.10	3.93 (.0500)
Improved Productivity	Y = 3.293 + .0587 X ₄ ² t = 8.748 t = 3.134 (.00001) (.0030)	.21	9.82 (.0030)

a) The number in parentheses indicate the level at which a statistic is significant.

b) X₁ is belief about new technology, X₂ is belief about computers, X₃ is belief about banking automation, X₄ is active participation in adopting the system, and X₅ is manager's experience.

The results of stepwise regression analysis, with system perceived problems as dependent variables and managers' characteristics as independent variables are presented in Table 7. The variables in the significant regression equations cumulatively explain between 22 (for employees' resistance to change) and 47 percent (for increased cost of developing adequate software) of the variance in perceived problems of banking automation.

The estimated models of system perceived problems have considerably higher R^2 than the estimated models of perceived benefits. The association of managers' characteristics with system perceived problems appear more complex than with perceived benefits of automated systems.

"Managers' beliefs about new technology," "managers' beliefs about computers," and "managers' beliefs about banking automation" appeared in most of the cases as significant predictors of perceived problems of automated systems. This finding agrees with Dutta et al. (1982) and with Millman & Hartwick (1987).

CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

This study is an attempt to analyze the automation decision of the UAE banks in terms of two models of adopting innovations: (1) the theory of reasoned action to examine the impact of increasing levels of automation on bank performance, and (2) the model of innovation decision process to examine managers' perceptions toward automation. Many of the relationships proposed through these models were supported empirically. Further, the results were discussed and contrasted with related literature.

Although previous studies have mainly concentrated on the cost aspects of a bank's economic performance, the results of the current study are based on examining both the cost and revenue sides of that performance. Results reveal that the UAE banks are adopting automated banking technologies and even increasing their level of automation on the expectation of improving their equity multiplying effect. UAE banks realize the short term negative impact of this automation on their profit margins and the long term positive effect of this automation on their business volumes and assets bases.

Examining management perceptions towards banking automation reveals that managers perceive "improved service quality," "enhanced accuracy," and "reduced customer complaints" as the most important benefits arising from banking automation. However, "reduced labor cost" shows as the least important perceived benefit of this process.

Bank managers perceive "the system security" as the most important problem in operating a bank automated system. However, "training personnel on the use of the system" and "increased system development costs" rank second and third, respectively, in importance. Interestingly enough, "resistance to change" is the least important problem in the process.

An important and immediate aim of this study is to examine managers' beliefs, experiences, and active participation in adopting the system as determinants of the system's perceived benefits and problems. According to the study model, managers' perceptions towards

automated systems play a major role in forming these managers' attitudes towards these systems. In turn, these attitudes influence the managers' intentions to adopt higher levels of automated systems in the future. We have used multiple regression analysis based on the stepwise technique to examine the association between managers' perceptions towards banking automation, on one hand, and their characteristics, on the other.

Table 7
Estimated Perceived Problems Stepwise Regression Models ^(a)

Dependent Variable	Regression Model ^(b)	R ²	F
Software Development Time	$Y = 1.2240 + .2360 X_1 + 1.404 X_4 - 2389 X_5$ t = 1.098 t = 1.371 t = 2.370 t = -2.610 (.2800) (.1795) (.0230) (.0130)	.23	3.38 (.0234)
Software Development Cost	$Y = 3.3308 + .0840 X_1$ t = 7.486 t = 4.460 (.00001) (.0001)	.47	15.38 (.0001)
IS Development Cost	$Y = 1.8439 + .8902 X_1 - .35757 X_3$ t = 3.06 t = 4.29 t = -2.16 (.0042) (.0001) (.0376)	.36	9.99 (.0004)
IS Operating Cost	$Y = 1.7061 + .5071 X_2$ t = 2.60 t = 3.39 (.0133) (.0017)	.24	11.51 (.0017)
Employee Training	$Y = 5.1720 - .0859 X_5^2$ t = 9.01 t = -1.794 (.00001) (.0812)	.082	3.22 (.0812)
System Security	$Y = 2.1574 + .5471 X_2 + .1077 X_5 - .0212 X_2 X_5$ t = 2.575 t = 2.748 t = 2.258 t = -1.836 (.0146) (.0095) (.0305) (.0751)	.26	3.926 (.0165)
Customer Awareness	$Y = 2.9900 + .0384 X_2$ t = 7.443 t = 1.731 (.00001) (.0920)	.077	2.99 (.0920)
Financing the System	$Y = 1.8126 + .1123 X_4$ t = 3.394 t = 3.712 (.0017) (.0007)	.28	13.78 (.0007)
Increased Maintenance Cost	$Y = 2.2277 + .4111 X_1 - .0084 X_4$ t = 2.734 t = 1.889 t = -1.327 (.0098) (.0673) (.1930)	.10	1.97 (.154)
Employee Resistance	$Y = 2.0406 + .0865 X_3$ t = 5.408 t = 3.193 (.00001) (.0029)	.22	10.20 (.0029)

(a) The number in parentheses indicate the level at which a statistic is significant.

(b) X_1 is belief about new technology, X_2 is belief about computers, X_3 is belief about banking automation, X_4 is active participation in adopting the system, and X_5 is manager's experience.

Analysis reveals that "managers' beliefs about computers" and "banking automation systems" are critical predictors of "system-perceived " benefits and problems. "Managers' beliefs about new technology" and "active participation in adopting the system" are additional worthy predictors of system perceived problems only. While "managers' belief about new technology" is unrelated to system perceived benefits, "managers' experience," is not associated with system perceived problems. This implies that new as well as experienced managers, in our sample, do not perceive banking automated systems differently. Experience is not a statistically significant factor in shaping these managers' perceptions. This is a positive result. It means that although one would expect more aggressive attitudes among young managers towards new technology means, such as automated banking systems, than among experienced managers, this is not validated by our data. Both young and experienced managers show positive attitudes towards the use of IT in banking.

The results of estimating the proposed models of system perceived benefits and problems are encouraging in terms of these models predictability. They are also encouraging in terms of their explanatory power in the case of perceived problems of automated systems, and not so enlightening in the case of system perceived benefits. The association of managers' characteristics with perceived problems of the system appears more complex than with perceived benefits of automated systems. More importantly, since only very few nonlinear terms of the independent variables have entered the estimated model, this would suggest using a linear model as a reasonable approximation in future studies.

The current study provides empirical estimation of its model proposed relationships that can be of reasonable value to the process of adopting automated systems. Note that the literature on information systems success asserts the significant relationship between user satisfaction and system usage. User satisfaction is dependent on the system perceived usefulness, benefits, and ease of use. This study has focused on examining some of the factors that are thought of as important determinants of the user perceptions about the system. Identifying these factors is important to rationalize the process of adopting new automated systems in general.

The above findings can be of reasonable practical significance when planning managerial development activities in banks. These activities should target, in part, enhancing bank managers' beliefs about advanced technologies, including computers, and banking automation. In addition, the findings can help in predicting bank managers' perceptions towards the automated system. The perceptions, in turn, influence managers' attitudes towards the system and intentions to adopt higher level banking automated systems in the future. On the other hand, the findings add to our academic understanding of the functional relationships among the variables that affect the innovation adoption decision. Finally, the study is limited by the models used in the analysis and interpretation of results, the variables included in these models, the database utilized in estimating the models, and by its sample.

Further research using different instruments and alternative research designs will be needed to substantiate the findings of this project and earlier studies. Another equally interesting research idea is to study the perceptions and reactions of customers toward the banking automated systems.

APPENDIX
The Questionnaire

Question # 1: Managers differ in their evaluation of various benefits that may result from automating bank functions. The following is a list of bank automation possible benefits. For each item, please specify your opinion as to the degree of importance of each item.

(VI=Very Important, I=Important, RI=Relatively Important, NI=Not Important, NIA=Not Important at All)

Automating our bank functions:		NIA	NI	RI	I	VI
1	Helps the handling of high volumes of business	1	2	3	4	5
2	Helps providing flexible service	1	2	3	4	5
3	Enables better cash management	1	2	3	4	5
4	Reduces labor cost	1	2	3	4	5
5	Enables providing customers with improved service quality	1	2	3	4	5
6	Helps to gain competitive advantage	1	2	3	4	5
7	Enhances operations accuracy	1	2	3	4	5
8	Reduces customer complaints	1	2	3	4	5
9	Improves employees morale	1	2	3	4	5
10	Results in improved productivity	1	2	3	4	5

Question # 2: Managers differ in their evaluation of the importance of the problems that may result from automating bank functions. The following is a list of possible problems of adopting an automated banking system. Based on your bank experience, will you please indicate your own opinion as to the degree of importance of each item.

(VI=Very Important, I=Important, RI=Relatively Important, NI=Not Important, NIA=Not Important at All)

Automating our bank functions has resulted in:		NIA	NI	RI	I	VI
1	Long time to develop the required software	1	2	3	4	5
2	High Cost of software development	1	2	3	4	5
3	High cost of developing the system	1	2	3	4	5
4	High operating costs	1	2	3	4	5
5	A great deal of Employee training	1	2	3	4	5
6	Troubles from the system security	1	2	3	4	5
7	Inadequate Customer awareness	1	2	3	4	5
8	High initial investment	1	2	3	4	5
9	Increased system maintenance costs	1	2	3	4	5
10	Resistance from bank employees	1	2	3	4	5

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Question # 3: On each section in the following, you will find a different object to be judged and beneath it a set of scales. Will you kindly rate the object on each of these scales in order. Given the two extremes on the sides, please circle the digit that best describes your banking automated system.

A. Computers

worthless	1	2	3	4	5	valuable
regressive	1	2	3	4	5	progressive
threatening	1	2	3	4	5	reassuring
erratic	1	2	3	4	5	flawless
unreliable	1	2	3	4	5	reliable
unnecessary	1	2	3	4	5	essential
hindering	1	2	3	4	5	helpful
unfriendly	1	2	3	4	5	friendly
passive	1	2	3	4	5	active
boring	1	2	3	4	5	interesting

B. New Technology

worthless	1	2	3	4	5	valuable
regressive	1	2	3	4	5	progressive
threatening	1	2	3	4	5	reassuring
erratic	1	2	3	4	5	flawless
unreliable	1	2	3	4	5	reliable
unnecessary	1	2	3	4	5	essential
hindering	1	2	3	4	5	helpful
unfriendly	1	2	3	4	5	friendly
passive	1	2	3	4	5	active
boring	1	2	3	4	5	interesting

C. Banking Automation Systems

worthless	1	2	3	4	5	valuable
regressive	1	2	3	4	5	progressive
threatening	1	2	3	4	5	reassuring
erratic	1	2	3	4	5	flawless
unreliable	1	2	3	4	5	reliable
unnecessary	1	2	3	4	5	essential
hindering	1	2	3	4	5	helpful
unfriendly	1	2	3	4	5	friendly
passive	1	2	3	4	5	active
boring	1	2	3	4	5	interesting

D. Experience with Your Bank Automated System

I did not have actively participated in developing nor acquiring our bank's automated system	1	2	3	4	5	I have actively participated in developing or acquiring our bank's automated system
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Question # 4: Please indicate which features of banking automation your bank has. Place an "X" in front each of the features you already have.

System Features	Included Services	"X" if your system already has the feature or service
Computer to Manage Customer Accounts		
Electronic Credit Management Facility		
Automatic Teller Machines	process withdrawals in local money	
	process withdrawals in foreign money	
	process deposits in local money	
	process deposits in foreign money	
	process account balance inquiries	
	process transfers between accounts	
	handle credit card operations	
	handle telephone bill payments	
Automatic Checks Clearinghouse		
Point of Sale System		
Cash Management System		
Check Verification System		
Check Truncation System		
Home Banking System		
Automatic Transfers System		

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1. How many ATMs do you operate?

Less than 10	Between 10 and 25	More than 25

2. Where are your ATMs located?

Outside your branches	Inside some shopping areas	Within the local airports	Other areas

3. Which size of computers do you have?

Mainframe	Minicomputers	Microcomputers

4. Are you participating in a worldwide interbank telecommunication network such as SWIFT or alike?

Yes

No

5. Do you have an electronic network communication arrangement among the headquarters and branches?

Yes

No

6. If yes, which kind of network do you have?

7. Bank Name:

8. Your Name:

9. Position:

10. How Long is Your Total Seniority:

(with the bank and with any other firm)

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