

PERCEPTION OF CRISIS MANAGEMENT:
A COMPARATIVE ANALYSIS OF GUATEMALAN AND U.S. SMALL BUSINESSES

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Abstract

Organizations may be confronted with a crisis that strains their resources and impact their mission. Crisis management seeks to minimize the impact of these events. The crisis management literature focuses on larger businesses, there has been less written comparing small enterprises in the United States and those in a foreign country. This study examines and contrasts perception of crisis incidents in U.S. and Guatemalan small businesses. A survey conducted among small firms in both countries indicates that, for most of the crisis types studied, there were significant differences in the level of concern and/or the occurrence rates between the two countries. Reasons for this are discussed and implications for management are presented.

Introduction

Numerous events, scares, and scandals have highlighted the importance of being prepared for a crisis. Managers have analyzed their vulnerabilities and examined organizational priorities. This topic has been extensively researched in the United States. However, the experience within other nations has not been as thoroughly studied. For example, in Guatemala one of the major crisis management events that have had a long history in business is corruption (Miller, 2001). Its impact on stability and survival of businesses is substantial.

Organizations should have a crisis management plan to cope with unexpected crises since being prepared typically lessens some of the trauma and costs of a crisis. The most serious error is to assume that a crisis will never occur. A denial attitude is a formula for ineffective response to any crisis. Effective crisis planning and execution of a plan has shown to control the crisis and even turn the crisis into an advantage for the business (Wilderoter, 1987). There are also many more examples where the lack of preparation resulted in irreparable damage, from individual cases of employee embezzlement (Daniels, 2002) or mass disruption in business continuity due to natural events like Hurricane Andrew (Kruse, 1993). These problems universal to organizations worldwide and demonstrate that business managers

need to develop plans of action to either prevent the occurrence or mitigate the damage from a crisis event.

Crisis management is a method for planning for dealing with an unexpected event in an organization. Most large organizations have now developed crisis management plans and teams to be prepared in the event that some crisis would occur. On the other hand, managers of small businesses seem to avoid preparing for crisis management. Their view is “crises don’t happen in our industry/field” or “we have a well managed business and could manage our way through a crisis without a plan” (Caponigro, 2000). Typical assumptions include: (1) Crisis events only happen to other organizations or that they are somehow protected from a crisis (Mitroff, 1989). (2) Insurance policies cover losses or work interruption that may emerge from the crisis. (3) They do not have the resources or the time to establish plans or readiness requirements (Barton, 1993). (4) Today’s problems are so difficult and time consuming that makes it hard to plan for tomorrow’s uncertainties (Caponigro, 2000). While these are understandable points of view, they may be detrimental to the success of the small business operation.

Crisis management and contingency planning ideas have been discussed in business periodicals and academic literature for over several decades. The business environment seems to be faced with new and more sophisticated internal and external threats, terrorist plots, or other uncertainties that may affect organizational viability or survival. The experience and research within the United States may thus provide insight or guidance for small business managers in other nations. As these issues become essential to sustainable business development, this paper focuses on an overview of crisis management perceptions of managers in the United States and in Guatemala. It empirically investigates: (1) the different perceptions of Guatemalan and American small business managers regarding the concept and practices of crisis management, (2) the explanations for the differences in perceptions and practices that exist among businesses in both countries, and (3) the alternatives or recommendations that can strengthen the preparedness of U.S. and Guatemalan small businesses. A summary of literature is presented and five major areas of potential crisis are identified: operations, publicity problems, fraudulent activities, natural disasters (although we do not analyze this category), and legal crises. Two hypotheses about crisis management teams and the potential for a crisis in a small business are presented. These are tested, analyzed, and evaluated. A discussion focuses on the reasons why the differences exist.

Literature Review

A crisis can be defined as a turning point where events or activities run the risk of escalating in intensity, interfere with the normal operations of the business, endanger the business’s public image, or damage its bottom line in any way (Fink, 1986). This definition is associated with a broad category of events and incidents that can impact an organization.

Small businesses may be confronted with various types of crisis during their existence. Their ability to manage the crisis successfully can mean the difference between survival and disaster. Reviews of crisis preparedness by Fink (1986) and Offer (1998) indicated that half of all businesses stricken by a crisis will not survive if they do not have an adequate business recovery plan in place. Pedone (1997) offers a pessimistic observation indicating that 90% of businesses without a disaster recovery plan would fail within two years of a disaster. The relevant question in management and planning is not *whether* a crisis will occur, but *what* kind and *when* it will occur (Caponigro, 2000; Kruse, 1993). According to Caponigro (2000), crisis management is the function that works to minimize the negative impact of a crisis and helps an organization gain control of the situation.

Crisis Definition and Identification

Simbo's work (1993) indicated that one of the major reasons businesses do not have effective crisis management plans is because they have not identified the major crisis events that could impact their organization. Consequently, they have not developed the critical tools for developing comprehensive crisis plans for dealing with crisis situations. Fink (1986) asserts that crisis identification is important for two major reasons. (1) When the crisis is properly defined, it can be managed. (2) Once the crisis is defined it allows the manager to determine the degree of influence they have over the desired outcome. Since crises are generally followed by a variety of diversionary problems, it is important that the manager identify the real problem and focus interventions on the core issues rather than being distracted by other issues.

Warwick (1993) points out that one of the major stages important to preparation of a crisis management plan is performing a risk assessment of potential problems. The probabilities of a crisis in a particular area of a business activity vary. Managers should identify vulnerabilities or crisis events that could affect their organization.

The literature replete with classifications for crisis events and there is little agreement. Several scholars have arranged crises groups using two by two matrices (Marcus & Goodman, 1991; Meyers & Holusha, 1986). Others have used cluster analysis (Pearson & Mitroff, 1993). Although classification systems are important to the researchers, managers need to be concerned about their unique vulnerabilities (Caponigro, 1998). McCartney, Crandall, & Ziemnowicz (1999) have developed an efficient method of viewing crises. Their framework organizes crises into five types: (1) operational crises, (2) publicity problems, (3) fraudulent activities, (4) natural disasters, (5) and legal crises. Exhibit 1 summarizes many of the crisis events that confront small business small business managers. As managers identify crisis events and determine their business's possible vulnerability, they can seek additional information to develop proper planning to prepare for a crisis.

Exhibit 1 – Five Categories of Crisis Events

Operational Crises	
<ul style="list-style-type: none">• Loss of records permanently due to fire• Loss of records permanently due to computer breakdown• Major industrial accident• Breakdown of a major piece of production/service equipment	<ul style="list-style-type: none">• Computer system breakdown• Computer system invaded by hacker• Major product/service malfunction• Death of key executive
Fraudulent Activities	Publicity Problems
<ul style="list-style-type: none">• Theft or disappearance of records• Embezzlement by employee(s)• Corruption by management• Corporate espionage• Theft of company property• Employee violence in the workplace	<ul style="list-style-type: none">• Boycott by consumers or the public• Product sabotage• Negative media coverage
Natural Disasters	Legal Crises
<ul style="list-style-type: none">• Flood• Tornado• Snowstorm• Hurricane• Earthquake	<ul style="list-style-type: none">• Consumer lawsuit• Employee lawsuit• Government investigation• Product recall

Adapted from: Crandall, W., McCartney, M., & Ziemnowicz, C. (1999). Internal auditors and their perceptions of crisis events. *Internal Auditing*, 14 (1), 11-17.

Information Needs

The manager should ask the questions, “what crisis is of most concern to our business” and “has such an event or any crisis event actually happened in our business”? The answers are important because (1) when potential crises events are identified, then managers can plan for them and (2) recognition of potential events can enable management to enact measures to prevent the occurrence of that crisis. A manager who lacks sufficient information about the crisis cannot develop a plan to address it. For example, one of the most difficult events in an organization is the on-site death of an employee. If the worker was critical to the day-to-day operations, plans must be available to replace the deceased worker with comparable skill and experience (Wnek, 2000).

Crisis Management Teams

There are very convincing arguments supporting the formation of crisis management teams (Barton, 1993; Caponigro, 1998; Hickman and Crandall, 1997; Pearson and Clair, 1998) that can take charge of planning for a crisis before it occurs, as well as managing the problems that emerge during the crisis. Fink (1986) states that it is necessary to establish a crisis management team before a crisis plan can be developed. Pearson and Clair (1998) report that those organizational managers with crisis management teams show a greater concern for and attention to potential crises than organizations without crisis management teams. Moreover, Fink (1986) argues that organizations that do not have a plan reported that the crisis lasted two and one half times longer than those for organizations that had a crisis plan in place. Caponigro (2000) states that the best way to help insulate a business from the damaging effects of a crisis is to establish a crisis-management culture in the organization. Most organizations develop a crisis management team because their business culture recognizes the consequences of not being prepared for a crisis. They value the team’s contribution in achieving a proper level of preparedness. Additionally, previous crisis events have taught businesses serious lessons and have significantly heightened their awareness. The awareness in the organization that a crisis could happen will lead to planning for that event, and such preparations involves the formation, at least formally, of a crisis management team. Secondly, according to Penrose (2000), experience from actions or activities that proceeded the creation of the crisis management team has taught important lessons.

An interesting question emerges during the discussion of crisis management: why is there more concern for crisis events in some businesses than in others? Is the crisis event the catalyst for concern, or is it merely a consequence of having a management team that considers planning for crisis events to be an integral part of the business’s strategy? An assortment of management literature indicates that organizations are just naturally reactive concerning potential future crisis (Mitroff, Pauchant, and Shrivastava, 1989; Pearson and Mitroff, 1993; Penrose, 2000, Shrivastava, 1993). The crisis event may be the only incentive for a business to initiate the planning process to prevent another occurrence of the same or similar events.

Crisis Planning in Small Businesses

The discussion of general issues brings the question of “what are the crisis events that are of most concern to small businesses?” Investigating this provides useful insights into some of the worst-case scenarios that should be planned for in the crisis management process. Three considerations can be evaluated: (1) has the crisis event occurred in the recent past, (2) what is the current level of concern for that particular crisis, and (3) are there any unique characteristics of the country that would increase the likelihood of a certain type of crisis? A crisis that has occurred in the recent past can become a candidate for future worst-case scenario planning. Crisis management maintains that a potential crisis must be mitigated and hopefully prevented from occurring in the future. For example, computer system breakdowns occur frequently and can cause a major disruption in the running of a business. Management

will want to take steps to prevent their re-occurrence if possible. Consequently, *some* pre-planning must take place. A common practice in larger organizations is to have back-up computer facilities in place (hot standby) before a major disruption occurs. Past experience with a specific crisis can be a catalyst to plan for future occurrence of that same crisis.

The actual concern for a crisis is important to worst-case scenario planning. While it is expected that concern will increase if a crisis has already occurred, it is also possible that concern may be elevated even if the specific crisis has not occurred at the organization. For example, the September 11 terrorist incidents in the United States elevated organizational concerns about similar attacks. Elevated concern for a specific type of crisis can make that event a candidate for worst-case scenario planning.

The particular characteristics of a region may dictate what types of crises should be included in worst-case scenario planning. For example, in parts of the United States such as Florida, weather concerns such as hurricanes are included in worst-case scenario planning (Kruse, 1993). Investigating other nations, such as Guatemala, provides new perspectives. For example, crime and corruption are prevalent in parts of Guatemala. Therefore, businesses elsewhere may be wise to plan contingencies for some of these events.

Guatemala

Guatemala is a developing nation that is the largest and most densely populated country in Central America. It faces many challenges and is among the ten poorest countries in Latin America. The economy is built on two major economic sectors, agriculture and retail services. Both of these segments provide the engine for economic development. The nation enjoys significant factors of endowment and is rich in mineral, oil, and other natural resources. Together with its low labor cost, Guatemala now has a growing light industry sector. It has the largest industrial base in Central America and is an important manufacturer of pharmaceuticals, chemicals, clothing, wood, and food products, (Mahler, 1999). However, North American style of business crisis management is a relatively new concept for businesses in Guatemala.

Crisis events in Guatemala

A major barrier to economic development has been its history of civil strife. Guatemala has been engaged in crises due to civil war, corruption in government, or violence in the streets (Kincaid, 2000). The economy has suffered because of the uncertainty and a lack of continuity in the business climate. In other words, Guatemala has been in a crisis mode for a long time. Moreover, distrust of the government filters down into general business activities. Corruption is a major crisis management issue with a long history within government and business (Miller, 2001). Because wages are low and jobs are scarce, survival is a perpetual thought on the minds of many Guatemalan citizens. Corruption can be an opportunity to escape the problems of poverty. It also may be perceived as a means of wealth accumulation otherwise not available through the normal job creation process.

Another problem is gang-activity that threatens violence on individual citizens and businesses. These gangs can be traced to political problems, as well as the unequal distribution of income (Saltz, 1995). Political problems have led to sporadic guerilla attacks, kidnappings, and high profile murders (Rarick, 2000). The unequal distribution of income has exposed small businesses to problems of internal theft, robbery, murder and extortion. Problems of corruption and violence -- along with other business crisis problems such as Internet hacking, industrial accidents, and computer malfunctioning -- have made Guatemala vulnerable and thus crisis management is a concern within society and business.

Research Methodology

Response Criteria

There were three possible ways in which a respondent could answer each question about the concern for a particular crisis event: “High,” “Low,” and by failing to answer; the occurrence questions were either answered “yes” or not answered. As exploratory research the statistical analysis of differences, was performed in a manner that allows statistical proof of differences.

As the proportion of respondents answering in a particular way is a type of average, the Central Limits Theorem guarantees that the measured proportion is a asymptotically normal distribution about the true proportion of respondents that would answer that way. Furthermore, as the U.S. and Guatemalan answers are both normally distributed, the difference between the measured values for each country will also have a normal distribution. In particular, if there is no difference between two countries,

$$\frac{p^{us} - p^g}{s^p} \sim Z \quad (1)$$

or $N(0,1)$, where p^{us} and p^g are the proportions for the United States and Guatemala, respectively and s^p is the standard error of the relevant proportion.

Hypotheses

The test begins with a null hypothesis that the attitudes and experiences are the same in both countries or

H₀: there is no difference in the proportion of U.S. firms and Guatemalan firms that are highly concerned about crisis events and crisis occurrences

H₁: there is a difference in the proportion of U.S. firms and Guatemalan firms that are highly concerned about crisis events and crisis occurrences

If the null hypothesis is true, the measure of differences in proportion should, on average, be zero. Values significantly different than zero are unlikely if there is no actual difference, and thus allow us to conclude that, for that category, the countries are different. Thus Table 3 shows “FtoR,” for “fail to reject,” for small differences. This means that we cannot prove that they are different. The result is that countries are the same (but does not prove it; the result is simply inconclusive). Entries of “Reject” mean that the difference was large enough that we can be at least ninety-five per cent certain that there is a difference. This happens for a reported Z value of 1.96 or greater, and for 1.96 or less, with positive meaning that more respondents in the U.S. answered in that manner, and the negative meaning that more Guatemalans answered in that manner.

Finally, when calculating the differences of high concern, the failure to answer was treated as low concern, while failure to answer was treated as high concern when working with low concerns. This conservative approach insures that the differences are *at least* as strong as that claimed by the statistics. Answering a question in a particular manner can be treated as a Bernoulli variable, having a success (or value of 1) when answered that way, and a failure (or value of 0) when answered in any other manner. p_i is the underlying parameter indicating the proportion of the population that will answer in that manner, also called the frequency. It is customary to define

$$q_i = 1 - p_i \quad (1)$$

The fraction of respondents answering in this matter is then a sample mean, and can be calculated as

$$\hat{p}_i = \frac{x_i}{n_i} \quad (2)$$

For “large” samples, the Central Limit Theorem guarantees that this variable will be asymptotically normal distributed, and using the well-known variance of the Bernoulli trial,

$$\hat{p}_i \sim N\left(p, \frac{p_i q_i}{n_i}\right) \quad (3)$$

where n_i is the number of responses.

Generally, a large sample is taken to be thirty or more. In the particular case of frequencies, the additional requirements are generally made that

$$n_i p_i \geq 5 \quad (4)$$

And

$$n_i q_i \geq 5 \quad (5)$$

when this is not the case, the distribution is not sufficiently normal for the test.

For the present data, the null hypothesis for any given survey question will be that the American response and the Guatemalan are identical. Under this hypothesis, \underline{p}_{ica} and p_{ig} are separate observations of the same underlying parameter; \underline{p}_i . That is, if the hypothesis is true, p_i is the true frequency for both American and Guatemalan firms, while \underline{p}_{ica} and p_{ig} are two separate variables drawn from the distribution. Linear combinations of normal variables are distributed normally themselves; in the case of straightforward addition and subtraction the combined variance is the sum of the variances, while the combined mean is the sum or difference of the means. In this case, the means are the same under the hypothesis; their difference is hypothesized as mean zero, and is distributed

$$\hat{p}_{i,us} - \hat{p}_{i,g} \sim N\left(0, \sigma_{\hat{p}_{i,us}}^2 + \sigma_{\hat{p}_{i,g}}^2\right) \quad (6)$$

with the individual variances being of the form

$$\sigma_{\hat{p}_{i,us}}^2 = \frac{pq}{n_{ii}} \quad \sigma_{\hat{p}_{i,j}}^2 = \frac{pq}{n_{i,j}} \quad (7)$$

which combine as

$$\sigma_{\hat{p}_{i,us} - \hat{p}_{i,g}}^2 = \frac{pq}{n_{i,us}} + \frac{pq}{n_{i,g}} = pq \left(\frac{1}{n_{i,us}} + \frac{1}{n_{i,g}} \right) \quad (8)$$

and therefore the quantity

$$Z_{p_i} \equiv \frac{\hat{p}_{i,us} - \hat{p}_{i,g}}{\sqrt{\hat{p}_i \hat{q}_i} \sqrt{\frac{1}{n_{i,us}} + \frac{1}{n_{i,g}}}} \quad (9)$$

has a standard normal distribution.

Equation (9) still requires a calculation of \hat{p} , which in turn yields a usable \hat{q} . Returning to the hypothesis that both groups are the same, the best estimate of the true frequency will come from the underlying frequency p_i can be best estimated by using the degrees of freedom for each observation to form a weighted average,

$$\hat{p}_i = \frac{n_{i,us} \hat{p}_{i,us} + n_{i,g} \hat{p}_{i,g}}{n_{i,us} + n_{i,g}} \quad (10)$$

which substituted into yields the final distributed test statistic of:

$$\begin{aligned}
z_i &= \frac{\hat{p}_{i,us} - \hat{p}_{i,g}}{\sqrt{\hat{p}_i \hat{q}_i} \sqrt{\frac{1}{n_{i,us}} + \frac{1}{n_{i,g}}}} \\
&= \frac{\hat{p}_{i,us} - p_{i,g}}{\sqrt{\frac{(n_{i,us} \hat{p}_{i,us} + n_{i,g} \hat{p}_{i,g}) [1 - (n_{i,us} \hat{p}_{i,us} + n_{i,g} \hat{p}_{i,g})]}{(n_{i,us} + n_{i,g})}} \sqrt{\frac{1}{n_{i,us}} + \frac{1}{n_{i,g}}}} \quad (11) \\
&= \frac{(\hat{p}_{i,us} - \hat{p}_{i,g})(n_{i,us} + n_{i,g})}{\sqrt{(n_{i,us} \hat{p}_{i,us} + n_{i,g} \hat{p}_{i,g}) [1 - (n_{i,us} \hat{p}_{i,us} + n_{i,g} \hat{p}_{i,g})]} \sqrt{\frac{1}{n_{i,us}} + \frac{1}{n_{i,g}}}}
\end{aligned}$$

which can easily be calculated partwise on a spreadsheet.

Survey Instrument

The unit of analysis was the small business manager. The objective was to measure their perceptions about business crises and crisis management. The survey instrument was based on that used by Crandall, McCartney, & Ziemnowicz (1999) and developed around the crisis events listed in Exhibit 1.

Data collection

For U.S. firms, a directory of small businesses was obtained from the state Small Business Forum and from the university's continuing education statewide small business database. The survey was mailed to 1,000 randomly selected small businesses in Pennsylvania and New York. Each survey contained a stamped, self-addressed envelope, and was addressed to the human resources or executive offices of each company. One hundred and sixty two useable surveys were received for a response rate of 16.2%.

The survey was translated into Spanish and then back translated into English to assure consistency and accuracy of the questions. For the Guatemala participants, business owners and managers from 212 enterprises located in 6 major cities (Guatemala City, Coatepeque, San Marcos, Quezaltenango, Mazaltenango, and Retalhuleu) were contacted and asked to complete the survey. All of the participants were recruited on the basis of accessibility and participated voluntarily.

Procedure

Each respondent completed one survey that asked for information on four different sections. The first section asked for demographic information on the type of business, number of employees, and number of year in the business. The second section focused on the type of crisis events such as operational crisis, publicity problems, fraudulent activity, natural disasters, and legal crisis that the business may have experienced. The third section requested an indication as to whether the organization had a crisis management team. Finally, the fourth section asked open-ended questions on how the organization reports crises to management and what other crises they have encountered that were not on the survey. Each participant was asked to answer all survey questions by marking the appropriate box or circling a response. For section two, the respondent could choose a level of concern about a crisis by circling a scale from one for "low" to a five for "high".

Results

Participants

The first phase of the analysis developed the descriptive understanding of the businesses and their composition. Table 1 lists the size of the organizations in terms of number of employees that responded to

this survey. In the U.S., ninety-four organizations (64.4%) had less than 25 employees. Twenty-seven organizations (18.5%) had between 25 to 99 employees. Nineteen organizations (13.0%) had between 100 and 499 employees while 6 organizations (4.1%) were over 500 employees. Sixteen organizations did not respond to this question on the survey. In Guatemala, the size of the organization in terms of number of employees is reported in Table 1. One hundred eighty-nine organizations had between 2 to 49 employees for a total of 93.6% of the respondents. Eleven organizations (5.4%) were composed of 50 to 499 employees. One organization had over 500 employees and one did not respond to this question.

Table 1 – Size of U.S. and Guatemalan firms in survey

Size of U.S. Firms	Frequency	Percent	Cumulative Percent
Less than 25 employees	94	64.4	64.4
Between 25 and 99 employees	27	18.5	82.9
Between 100 and 499 employees	19	13.0	95.9
Over 499 employees	6	4.1	100.0
Total	146		
Note: 16 organizations did not report on this variable			
Size of Guatemala Firms	Frequency	Percent	Cumulative Percent
Between 2 and 49 employees	189	93.6	93.6
Between 50 and 499 employees	11	5.4	99.0
More than 499 employees	1	.5	99.5
Non- response	1	.5	100.0
Total	212	100	

Existence of a Crisis Management Team

Table 2 lists the response to the question: Does your organization have a crisis management team? In the U.S., seventeen organizations (11.0%) indicated they had such a team while 138 organizations (89.0%) responded that they did not have a crisis management team. Seven organizations did not respond to this question. Among Guatemalan businesses, nineteen respondents (9.4%) indicated that their organization had a crisis management team. The majority, 183 respondents indicated their organizations did not have such a team while 10 respondents did not answer the question.

Table 2 – Frequency of crisis management team in U.S. and Guatemalan firms

Does your organization have a crisis management team? U.S.	Frequency	Percent
Yes	17	11.0
No	138	89.0
Total	155	100.0
Note: seven organizations did not report on this variable		
Does your organization have a crisis management team? Guatemala	Frequency	Percent
Yes	19	9.4
No	183	90.6
Total	202	100.0
Note: ten respondents did not answer this question		

The second phase of the analysis focused on the degree of concern for a specific crisis event occurring in small businesses. Table 3 summarizes the relationship of the crisis occurrence and concern that is associated with the specific crisis events in this business type. Crisis event by crisis event comparison reveals that there are some significant differences between the two countries. The final phase

of the statistical analysis required calculating the Z statistics for each crisis event for both countries. This procedure produced the results that are summarized in Table 3. Column A and B displays values of the proportion of respondents who indicated their concern a crisis and the occurrence of a crisis. Column C calculates the Z value for both countries and presents the results of this calculation. The following discussion provides a perspective on the differences that exist between the types of crisis in each country.

Table 3 – Comparison between crisis concern and crisis occurrence

Crisis Event:	U.S. (A)			Guatemala (B)			Z of Difference (C)		
	Hi	Lo	Occur	Hi	Lo	Occur	Hi	Lo	Occur
Theft or disappearance of records	.63	.25	.77	.40	.36	.63	4.34	-2.21	2.80
Lost records permanently due to fire	.60	.25	.92	.50	.17	.82	1.79	1.99	2.72
Lost records permanently due to computer breakdown	.25	.63	.39	.43	.20	.68	-3.56	8.28	-5.51
Computer system invaded by hacker	.34	.51	.73	.52	.12	.80	-3.44	8.08	-1.52
Major industrial accident	.57	.27	.89	.50	.16	.80	1.50	2.64	2.25
Major product/service malfunction	.46	.40	.78	.39	.30	.38	1.26	1.96	7.78
Death of a key executive	.46	.40	.64	.48	.16	.81	-.35	5.21	-3.54
Breakdown of a major piece of production or service equipment	.51	.33	.83	.42	.26	.59	1.74	1.48	5.04
Internet site disrupted due to hacker or some other act of vengeance	.35	.51	.44	.53	.10	.83	-3.60	8.47	-7.74
Boycott by consumers or the public	.76	.12	.93	.49	.20	.74	5.27	-2.10	4.66
Product sabotage	.73	.14	.87	.48	.16	.76	5.00	-.44	2.61
Negative media coverage	.65	.22	.82	.50	.13	.77	3.05	2.36	1.25
Embezzlement by employee(s)	.69	.19	.83	.36	.35	.62	6.35	-3.29	4.36
Asset misappropriation for employee's benefit	.69	.17	.83	.44	.25	.69	4.87	-1.83	3.07
Corruption by management	.73	.13	.88	.47	.23	.78	5.06	-2.51	2.63
Corporate espionage	.72	.14	.85	.51	.16	.75	4.03	-.60	2.31
Theft of company property or materials	.51	.35	.58	.44	.26	.67	1.46	1.85	-1.83
Employee violence at the workplace	.64	.23	.80	.51	.20	.69	2.53	.73	2.33
Flood	.71	.14	.73	.51	.15	.79	3.87	-.18	-1.31
Tornado	.75	.09	.84	.54	.07	.81	4.11	.63	.69
Snowstorm	.59	.24	.40	.57	.05	.80	.45	5.13	-7.81
Hurricane	.80	.07	.85	.51	.12	.78	5.69	-1.79	1.65
Earthquake	.81	.05	.89	.47	.16	.78	6.61	-3.31	2.80
Consumer lawsuit	.49	.38	.70	.54	.10	.86	-.96	6.44	-3.55
Employee lawsuit	.51	.37	.70	.50	.15	.74	.14	4.75	-.72
Government investigation	.56	.33	.69	.53	.12	.72	.40	4.70	-.55
Product recall	.67	.19	.75	.48	.17	.74	3.66	.57	.34

The Z scores highlighted in gray indicate scores that present “no difference” responses on their respective crisis event.

Guatemalan business managers failed to answer questions far more frequently than did the Americans, which shows in the data. A positive z value indicates that that a larger number of American respondents answered in this manner, while a negative value indicates that more Guatemalans answered in this manner. While the concern rates frequently have opposite signs on their z values, this is not always the case. For example, for the second question about record loss due to fire, Americans reported that they

were highly concerned 60% of the time, compared to 50%, a statistically insignificant difference. However, 25% of American and only 17% of Guatemalans answered that they had low concern, a difference that *is* statistically significant. This apparent paradox is resolved by noting that a far larger number of Guatemalans failed to respond to the question: 33% as compared to the American rate of 15%.

In many areas, the data shows conclusively that American and Guatemalan attitudes and experiences with crisis management are different. Any value with a magnitude greater than 1.96 allows the hypothesis that the response is the same for both countries to be rejected at the 95% level. Similarly, values with a magnitude of 2.576 or greater can be rejected at the 99% level. Values beyond 3 are rejected at any reasonable level. The subsequent discussion presents the results from the analysis as they relate to seven major crisis events in businesses in each nation.

Theft of records

The first question, the theft or disappearance of records, is useful for illustrating most of the possible outcomes of the questions. Note first that the “High” and “low” responses do not total 100%. This is due the fact that not all questions were answered on all surveys. Additionally, the non-response rate is lower on all questions for the Guatemalan data. Accordingly, the statistics developed in the methodology section consider both an answer of “Low” and the lack of a response as “not high” when comparing “High”, and similarly comparing “Low”. This treatment assures that overly strong claims will not be made.

With a z value of +4.34, it is clear that theft or disappearance of records is of far greater concern to American businesses than those in Guatemala. This value is extreme enough to reject a hypothesis that the concern is the same at any reasonable level. The z value for low concern is 2.21, with the sign reflecting the fact that Guatemalans were more likely to express low concern. This, too, is a statistically significant difference, but at the 90% level. Note that the magnitude of the two values is not the same, or even similar-this is an artifact of the different non-response rates.

Finally, most companies in both countries had a theft or disappearance within the last three years. The z value of +2.80 is sufficient to reject the hypothesis that the rate is the same at the 99% level.

Loss of records due to fire

Americans were more likely to report *both* high and low concern than Guatemalans. Again, this is a consequence of different non-response rates for the two countries. In this case, the differences result in rejecting one hypothesis while failing to reject the other. The z of +1.79 is insufficient to conclude that the countries are highly concerned at a different rate, while the +1.99 allows the conclusion the rate of low concern *is* different with 95% confidence. Finally, the occurrence rate is different.

Computer crises

The two computer questions yield startling differences between the U.S. and Guatemala. Firms in the U.S. are far more likely to have a low level of concern than high, in each case; while Guatemalans are more likely to be highly concerned than to show low concern. The z of 3.56 and 3.44 for the high concern yield the conclusion at the 99% level that this rate is different, and the +8.28 and +8.08 values show conclusively at any reasonable level that Guatemalans are less likely to have low concern for computer breakdown or hacker invasion. While the difference in intrusion rate is statistically insignificant, nearly twice as many Guatemalans have had data loss, with a z of a staggering 5.51.

Major product or service malfunction

Having a major product or service malfunction is clearly a significant problem when it happens. Not only are revenues lost, but also the firm's reputation is tarnished. A barely significant statistical difference exists for low concern, and is insignificant for high concern, with the U.S. respondents being more likely to give both answers. An interesting difference is in the occurrence rate where U.S. firms are more than twice as likely to report that they have had this problem. The z statistic of 7.78 makes it among

the highest reported in any category. It can be concluded that U.S. firms have this problem far more often than Guatemalan firms. It is unclear why a more developed country with greater resources would have such a problem. The technical resources would seem to provide a greater ability to avoid catastrophic failure. One possible explanation is that these resources also allow more complicated products and services, thus making them subject to more failure modes.

Product sabotage

While there is a small statistical difference in the proportion of firms suffering from sabotage in each country, and almost no difference in the number of firms reporting low concern. The U.S. firms are a time and a half as likely to be highly concerned about the matter, at nearly three quarters.

Embezzlement and Misappropriation by Employees

An area that shows particularly strong differences is that of embezzlement by employees. U.S. firms are almost twice as likely to be highly concerned, while Guatemalan firms are more than twice as likely to express low concern. Both differences are significant at well past the 99.9% level. Furthermore, the event is far more likely to occur in the U.S. as well. Perhaps most interesting is that Guatemalans express low concern even with a high incidence of the problem. While 62% report a problem, only 36% have high concern, and 35% express low concern. Surprisingly, even firms suffering from the problem express low concern. The asset misappropriation by employees and management corruption questions show similar patterns, the differences are all in the same direction, and are all statistically significant save for low concern about employee misappropriation.

Consumer Lawsuit

While the United States has a reputation for a highly litigious, consumer lawsuits appear to be a far more serious concern in Guatemala. While the difference in high concern is insignificant, at about half for both countries, nearly four times as many U.S. firms report a low level of concern. In fact, the only categories for which fewer Guatemalans reported low concern than the 10% for litigation are tornados and snowstorms. Furthermore, this low concern is in spite of a statistically higher reported rate of litigation in Guatemala, while most firms reported such suits in both countries, only half as many Guatemalan firms do not report the problem.

Product recall

While most categories are interesting for the differences seen, the product recall category is more interesting for the similarities seen. Firms in the U.S. report a statistically higher rate of high concern. The low concern rate, however, and even the occurrence rate, is nearly identical. While it is not possible to prove the null hypothesis statistically, values this small strongly suggest no difference.

The findings in this study reveal no significant difference in the means for the degree of concern for a potential crisis in businesses that have a crisis management team and those that do not. However, there was a significant difference in means for the degree of concern for a potential crisis in businesses that had experienced a crisis versus those businesses that had not experienced a crisis.

At first impression, these are unexpected results. The United States generally uses far more technology, and more advanced computers, and thus could be expected to have more serious concerns. However, the U.S. also has more skilled IT workers available to secure and maintain the systems, and the newer computers will be more likely to have more up to date and more secure software, as well. Similar results were found on the Internet site question. An outright majority of U.S. firms report a lack of concern to site disruption due to malicious actions, while a majority of Guatemalans report high concerns. For both concern levels, the statistics are similar to the other computer questions. Additionally, the incidence is far higher in Guatemala where five out of six firms report having had the problem, nearly twice the rate of the U.S.

Conclusions

This study has looked at the perceptions and experiences of Guatemalan small businesses in relation to crisis events and crisis management. The results indicate that in general, small businesses are not that concerned about crisis issues and subsequently, few having crisis management teams. One reason this may be the case is that smaller businesses experience fewer crisis events relative to larger organizations. As a result, the perceived need to plan for a crisis is not as strong.

However, there is a paradox. Small businesses are also very likely not to recover fully if they do experience a crisis event. In fact, small businesses often have fewer resources and less expertise to handle “the big one” should it occur. As a result, this study concludes that small businesses, like their larger counterparts, should adopt sophisticated crisis management plans. This includes the formation of a crisis management team, the identification of worst-case scenarios, the practicing of mock disasters, and the upgrading of these plans as needed.

These results come from a moderately sized sample and a simple statistical analysis. At this level, it can be seen that significant differences exist between both the expectations and the experiences of businesses in the two countries. However, a larger data set, drawn from a larger cross-section of both countries, would strengthen the findings; the conclusions justify such an effort. Additionally, further statistical analysis of the present data set is possible.

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