# Perceived Strategic Uncertainty and Environmental Scanning Behavior of Hong Kong Chinese Executives

Bahman P. Ebrahimi
UNIVERSITY OF DENVER

*Against the backdrop of the handover of Hong Kong to the People's Republic of China (PRC) and the existence of an atmosphere of uncertainty in the territory, I attempted in this study to examine the relationship between perceived environmental uncertainty and scanning behavior of Hong Kong Chinese executives. Contrary to expectations, results indicated that Hong Kong Chinese executives perceived higher degree of uncertainty in the competitive, customer, and economic sectors than the political. These managers also scanned the task environment more intensely than the remote. Finally, there was a positive relationship between the degree of perceived strategic uncertainty and scanning behavior as measured by frequency and interest.* J BUSN RES 2000. 49.67–77. © 2000 Elsevier Science Inc. All rights reserved

Hong Kong is at the dawning of a new era. On July 1, 1997, Hong Kong ceased to be governed by Great Britain and became a Special Administrative Region of the People's Republic of China (PRC). During this period of political and economic change, companies operating in Hong Kong face the formidable task of adapting to new and uncertain environmental conditions. The merger of a dynamic and ambitious China with entrepreneurial Hong Kong poses tremendous opportunities as well as enormous risks (Barnathan, 1997). On one hand, integration with the mainland appears to provide an opportunity to explore the potential of a huge market, cheaper labor, and manufacturing sites and an abundant supply of cheap labor (Phillips and Calantone, 1994; Barnathan, 1997). On the other hand, although Beijing officials have promised a "one country, two systems" and a period of 50 years with no change in the social and economic system of the territory, the Hong Kong environment has plunged into a "quagmire of uncertainty" (Lau and Kuan,

1988; Kirkbride and Westwood, 1993; Phillips and Calantone, 1994; Wang, 1995; Du Bois, 1997).

The social, political, and cultural distinctiveness, which sets Hong Kong apart from the mainland and has been taken for granted, now appears uncertain (Lau and Kuan, 1988). Despite Chinese promises, no one knows with certainty how a communist and a capitalist system will function together in harmony. Many analysts, however, believe that Beijing wants the transfer of sovereignty to be smooth. There are at least two reasons for this desire. First, the smooth transition is a matter of saving face for Beijing. Second, Beijing hopes that a smooth transition may persuade Taiwan to rejoin the motherland (Du Bois, 1997). Only time will tell!

The uncertainties regarding future political and regulatory conditions pose great challenges for strategic decision makers in the territory. Under these circumstances, strategic managers can not afford to be oblivious to their environment. Strategic management and environmental scanning are major vehicles for adapting to external environmental change. The purpose of strategic management is to align or match the organization with its external environment (Ansoff, 1965; Andrews, 1987; Zahra, 1987). Environmental scanning is the process of seeking and collecting information about events, trends, and changes external to the business to guide the company's future course of action (Aguilar, 1967; Fahey and King, 1977).

Environmental scanning is primarily the arena of corporate elite, that is, top executives. Top executives can spend as much as one quarter of their time monitoring the environment (Kefalas and Schoderbek, 1973; Hambrick, 1981). Top executives, however, are not the only source of environmental scanning in organizations. While structure models of strategy such as Porter's (Porter, 1980) recommend the formation of formal scanning units, relatively few companies have dedicated individuals or units to environmental scanning (Fahey and King, 1977; Thomas, 1980). In addition, research has failed to show benefits associated with utilization of formal scanning programs (Stubbart, 1982; Lenz and Engledow, 1986). Therefore,

---

most senior managers conduct informal environmental scanning in their capacity as strategic decision makers (Keegan, 1974; Jain, 1984).

With few exceptions (Aiyepeku, 1982; Ghoshal, 1988; Auster and Choo, 1993, 1994; Sawyerr, 1993; Tan and Litschert, 1994; Elenkov, 1997), most prior research on the relationship between environmental uncertainty and scanning behavior has been conducted in the U.S. The current research is an attempt to fill this void. The purpose of this research is to study the relationship between perceived uncertainty and environmental scanning behavior of a sample of Hong Kong Chinese executives.

# Review of the Literature and Hypotheses

The external environment offers great constraints and opportunities for organizations. In fact, one can argue that a firm's competitiveness, success, and even survival depends on its ability to monitor and adapt to environmental conditions. The environment serves as a great source of strategic information (Lawrence and Lorsch, 1967; Duncan, 1972; Tung, 1979; Lawrence, 1981; Daft, Sormunen, and Parks, 1988). Environmental scanning is an informal or sometimes formal information acquisition strategy used by strategic decision-makers. Ever since the seminal work of Aguilar (1967), environmental scanning of executives has received a great deal of research attention (for example, Collins, 1968; Keegan, 1974; Fahey and King, 1977; Thomas, 1980; Hambrick, 1981, 1982; Culnan, 1983; Javidan, 1984; Rhyne, 1985; Daft, Sormunen, and Parks, 1988; Sawyerr, 1993; Subramanian, Fernandes, and Harper, 1993a, 1993b; Subramanian, Kumar, and Yauger, 1994; Tan and Litschert, 1994; Boyd and Fulk, 1996; Peters and Brush, 1996; Yasai-Ardekani and Nystrom, 1996; Elenkov, 1997).

Environmental scanning has been linked to the personal perceptions of uncertainty of strategic decision makers (Blandin and Brown, 1977; Daft, Sormunen, and Parks, 1988). Uncertainty has been conceived as either an objective dimension of the external environment or as the end result of a perceptual process through which decision makers assign meaning and interpret their situation (Milliken, 1987).

A major emphasis of research has been on perceived environmental uncertainty and the subjective rather than the objective data generated and utilized by strategic decision makers. Perceived environmental uncertainty refers to the absence of information with regard to organizations, activities, and events in the environment (Daft, Sormunen, and Parks, 1988). Some researchers indicate that perceived uncertainty is a necessary but not sufficient condition for scanning activity (Pfeffer and Salancik, 1978; Aaker, 1983; Daft, Sormunen, and Parks, 1988). These researchers assert that unless environmental events are perceived as important to organizational performance, executives have very little interest in scanning them.

Therefore, environmental uncertainty and importance combined create "strategic uncertainty" for executives, which result in their scanning events in selected environmental sectors (Daft, Sormunen, and Parks, 1988). Daft and his colleagues defined strategic uncertainty as the perceived uncertainty in strategically important sectors.

Because of the complexity and interconnectedness of the environment, some authors have suggested that analyzing the environment as a whole is an impossible task. Thus, they propose the decomposition of the environment into segments (Bourgeois, 1980; Fahey and Narayanan, 1986; Dill, 1958). In this context, two broad environmental segments have been identified. These broad segments are the remote and the task environment (Dill, 1958; Hall, 1972; Pearce and Robinson, 1988; Asheghian and Ebrahimi, 1990; Sawyerr, 1993). The remote environment consists of political/legal, economic, social/cultural, and technological sectors (Dill, 1958; Hall, 1972; Bourgeois, 1980; Daft, Sormunen, and Parks, 1988; Pearce and Robinson, 1988; Asheghian and Ebrahimi, 1990; Sawyerr, 1993). The task environment consists of all aspects of the environment that are relevant to organizational goal setting and goal achievement (Dill, 1958; Thompson, 1967; Duncan, 1972; Bourgeois, 1980). The task environment includes competitors, customers, and suppliers of resources sectors (Daft, Sormunen, and Parks, 1988; Pearce and Robinson, 1988; Asheghian and Ebrahimi, 1990).

Sectors in the remote and task environments influence scanning and other organizational activities differently because these sectors differ in their degree of uncertainty (Daft, Sormunen, and Parks, 1988). Two characteristics of the environment affect environmental uncertainty. The first is environmental complexity, and the second is rate of change (Duncan, 1972; Tung, 1979). Complexity is caused by the heterogeneity of relevant environmental events (Child, 1972). High environmental complexity results from diversity and larger number of external events. Rate of change refers to the frequency of changes occurring in the external environment (Daft, Sormunen, and Parks, 1988). The degree of environmental uncertainty perceived by strategic decision makers increases with the increased complexity and rate of change in environmental sectors (Duncan, 1972).

Daft, Sormunen, and Parks (1988) stated that one should expect the task environmental sectors to pose a greater strategic uncertainty than the sectors in the remote environment. There are two reasons for this expectation. First, the task environment normally changes more rapidly and is considered more complex and important than the remote environment. In other words, while the remote environmental sectors may indirectly influence the organization, the task environment may affect the organization's day-to-day performance more directly (Daft, Sormunen, and Parks, 1988). Second, the task environment seems to play a greater role in strategic management as it is more relevant in the goal setting and goal attain-

ment of the firm (Dill, 1958; Thompson, 1967). Thus, the following is hypothesized:

> H1a: The degree of perceived strategic uncertainty in Hong Kong associated with the task environmental sectors will be greater than those of the remote environment.

Prior research has shown that developing countries are characterized by a high degree of political and economic instability (Flores, 1972; Anastros, Bedos, and Seaman, 1980). Thus, political and legal sectors in these countries possess a high degree of environmental uncertainty (Sawyerr, 1993). Although, Hong Kong may not be considered a developing nation, because of its sovereignty handover to China, one expects a high degree of uncertainty associated with the political/legal and economic sectors. Therefore, one expects Hong Kong executives also perceive the political/legal and economic environmental sectors with greater degree of strategic uncertainty than other sectors. I, thus, hypothesize:

> H1b: The degree of strategic uncertainty in Hong Kong associated with the political/legal and economic sectors will be greater than other sectors of the environment.

Another important research question relates to the scope of the scanning behavior. Two factors contribute to scanning behavior: frequency by which the environmental sectors are scanned and the sources from which environmental information is obtained. Frequency of scanning has a direct effect on the amount of information an executive obtains from the environment (Hambrick, 1982). While some managers obtain information passively, others engage in an active search for environmental information (Aguilar, 1967). The process of information collection also may be depicted as irregular or continuous (Fahey and King, 1977). An important question for extremely busy executives with bounded rationality and limited capacity for information processing (Cyert and March, 1963; Hambrick, 1981) is whether to focus their scanning equally or narrowly across different environmental sectors (Daft, Sormunen, and Parks, 1988). According to Daft, Sormunen, and Parks (1988), the frequency of environmental scanning is directly related to the strategic uncertainty and as such should differ by sector. This is because strategic uncertainty is a reflection of the strategic value of information towards organizational performance, and thus, data should be acquired from strategically uncertain sectors more frequently (Kefalas and Schoderbek, 1973; Daft, Sormunen, and Parks, 1988). I, therefore, hypothesize:

> H2a: There is a positive relationship between perceived strategic uncertainty across environmental sectors and frequency of scanning.

In addition, executives should have a greater interest in scanning those sectors that reflect a greater level of strategic uncertainty (Daft, Sormunen, and Parks, 1988). The hypothesis is:

> H2b: The greater the degree of perceived strategic uncertainty of an environmental sector, the higher the degree of interest in scanning that sector.

Figure 1 depicts the perceived environmental conditions and executive scanning model. This model is the base for the hypotheses to be tested in this study.

## Method

### Sample

A sample of 55 top and midlevel Hong Kong Chinese executives attending management training programs in 1995 and 1996 were surveyed. Participating executives represented firms with an average of 2,238 employees. These firms also possessed average revenues of more than HK $7 billion or US:.91 billion (at fairly stable exchange rate of HK $7.73 = US1). Respondents included managing directors (CEOs) as well as various functional managers. Their functional areas of responsibility included sales and marketing (32.7%), finance and accounting (10.9%), R & D (7.3%), general management (5.5%), HRM (5.5%), production (3.6%), purchasing (3.6%). Most of the managers were males (65%), and their mean age was 35 years. Confidentiality of responses was stressed verbally and in writing. Respondents also were offered a copy of the research report.

A multiple industry sample is recommended in scanning research (Hambrick, 1981). The participants in the current study represented a variety of industries. The majority of the executives were employed in various industries in the service sector. Only seven of the participants were employed in the manufacturing sector (12.7%). Overall, the mix of employing firms in this study appears to represent the private sector in Hong Kong. Contrary to popular belief, Hong Kong is no longer a manufacturing center. In fact, Hong Kong has shifted most of its manufacturing to southern China because of cheap labor and land costs (Barnathan, 1997). Today, manufacturing accounts for only "9% of Hong Kong gross domestic product, vs. 24% in 1980" (Engardio, 1997, p. 45). In contrast, Hong Kong's service sector has enjoyed an annual average growth rate of 17% per year and its economy is about "90% services" (Du Bois, 1997; Engardio, 1997).

### Concerns with Nonrandom Sample

Because the sample consisted of participants in training seminars not randomly drawn from the population of Hong Kong Chinese executives, potential problems exist in applying statistical techniques to the present data.[1] In other words, in arriving "at some conclusion about a population by using the information contained in a sample from that population, then the

---

[1] I appreciate an anonymous reviewer's concerns about nonapplicability of statistical techniques to data obtained nonrandomly. I believe addressing this issue here has enhanced the validity of the conclusions drawn.
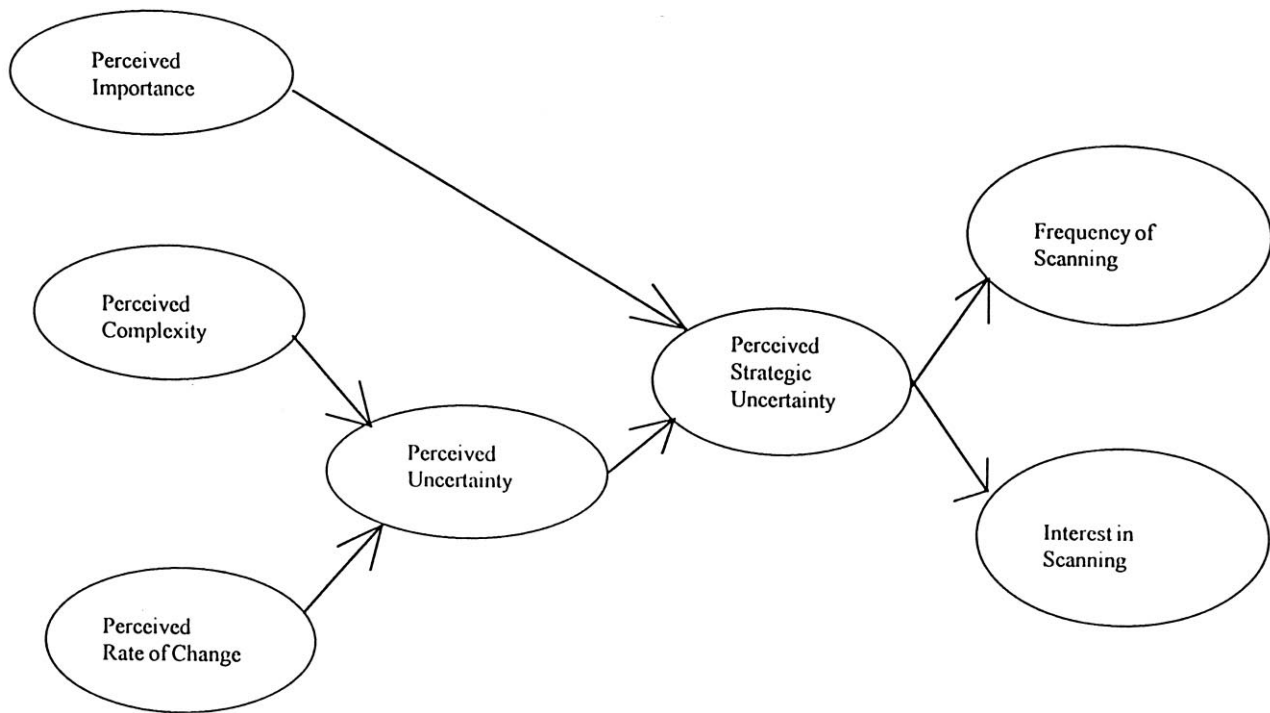
**Figure 1.** Perceived environmental conditions and executive scanning model (adapted from Daft, Surmunen, and Parks, 1988, p. 127).

sample must be random" (Siegel and Castellan, 1988, p. 58). To address this concern, I employed three nonparametric statistical techniques that are based on less stringent assumptions than their parametric counterparts.[2]

All the environmental conditions and scanning variables as well as the characteristics of the participating executives and their firms were subjected to these tests. These included twenty-one variables related to environmental conditions (change, complexity, and importance) and fourteen scanning frequency and interest variables for each of the seven environmental sectors. Executive characteristic variables included age and gender. Company variables consisted of firm size measured in number of employees and total revenues, industry type, and ownership. In sum, there were a total of twenty-one environmental conditions, fourteen scanning, two executive characteristic, and four firm variables leading to a total of forty-one variables.

First, all the data was subjected to the SPSS one-sample runs test. The one-sample runs test is recommended for testing the hypothesis that the sample is random (Siegel and Castellan, 1988). Only one of the possible forty-one variables exhibited a significant departure from randomness. This variable was complexity of the customer/market sector. In other words, the results of the one sample runs test did not allow us to reject the hypothesis of randomness of the sample.

Second, the Mann-Whitney Wilcoxon test was used to test

the hypothesis that two independent samples are drawn from the same population (Siegel and Castellan, 1988). The SPSS procedure was used to conduct this test. The characteristics of the sample in the present study were compared with those of a randomly drawn sample of Hong Kong top executives. Comparative data was available from a study of strategic behavior of Hong Kong firms obtained by a mail survey of randomly drawn top executives. This random sample contained data for 52 firms reported by single informants who were all top executives of their firms. Not all the variables in the present study were included in the second study. A total of twenty-one variables overlapped between the two studies. Variables available for analysis included environmental complexity and change by sector; firm size (number of employees and total revenues) and industry type; and informants' age, gender, department, and position. In other words, a total of fourteen environmental conditions, three firm, and four executive characteristic variables were available.

By using the Mann-Whitney Wilcoxon test, complexity of the political sector was the only one of fourteen environmental conditions, which differed significantly between the two samples. There were no significant differences between the two samples in terms of number of employees, total revenues, or industry type. The respondents' age, gender, and position were significantly different as the present study's sample was younger, consisted of more female executives, and contained both top and middle managers. This finding is not surprising as the current sample consisted of both top and middle manag-

---

[2] The results of these tests are available from the author.

ers as compared with the random sample of top executives used for comparison purposes.

Third, I conducted the Kolmogorov-Smirnov two-sample test to determine if the sample from the present study and the random sample described in the previous section had been drawn from the same population and possessed the same distribution (Siegel and Castellan, 1988). Unlike the Mann-Whitney Wilcoxon test, which is mainly concerned with the differences in location (central tendency), the Kolmogorov-Smirnov two-sample tests differences in many respects (location or dispersion or skewness and so forth) (Siegel and Castellan, 1988). Siegel and Castellan stated that "Of all tests for any kind of difference, the Kolmogorov-Smirnov test is the most powerful" (Siegel and Castellan, 1988, p. 167). None of the environmental conditions or firm related variables were significantly different between the two samples. As expected, because of the differences in the organizational level of the participants in the two samples, the present sample contained significantly younger executives. Based on the Kolmogorov-Smirnov two-sample test, the two samples appeared similar.

In summary, the results of various statistical tests briefly presented here indicated that although the present sample was not randomly obtained it possessed random characteristics. In addition, the observed values for the variables obtained from this nonrandom sample were very similar to those obtained from a randomly drawn sample of Hong Kong top executives. Employing these strategies should alleviate concerns with the lack of randomness of the sample utilized in this study and the appropriateness of applying parametric statistical techniques to the data.

## Instrument and Measures

Data were collected using an English instrument. Use of an English instrument appeared appropriate because English is the commonly used language in business in Hong Kong and the respondents were proficient in this language. The instrument consisted of five parts. In part I, respondents were provided with definitions and examples of environmental sectors.

Part II solicited information regarding environmental scanning practices including frequency and interest. Hambrick (1982) recommended the measurement of scanning using multiple indicators of level of interest, frequency of scanning, and hours spent scanning. Although the first two indicators have received widespread support in the literature (for example, Sawyerr, 1993; Boyd and Fulk, 1996), the hours per week indicator has not. Using a confirmatory factor analysis, Farh, Hoffman, and Hegarty (1984) reported excessive error variance for the hours spent on scanning measure. As a result, similar to research by Daft, Sormunen, and Parks (1988) and Sawyerr (1993), the hours per week indicator was not used in this research.

Frequency of scanning and degree of interest attached to each environmental sector were measured using seven-point Likert type scales adapted from Hambrick (1982) and Sawyerr

(1993). The scale for measuring frequency of scanning of each environmental sector ranged from extremely infrequent (1) to extremely frequent (7). Interest in scanning each environmental sector also was measured with a seven-point Likert scale anchored from low (1) to high (7). Averaging the frequency and interest for the sectors in the remote and task environments yielded frequency and interest scores for these segments, respectively. The frequency and interest level of scanning for the total environment was obtained by averaging the respective scores for the remote and task environments.

In part III, executives were asked to indicate the rate of change over time, the degree of complexity, and the level of importance of each environmental sector. These three factors were measured using seven-point Likert scales ranging from extremely low (1) to extremely high (7) (adapted from Sawyerr, 1993). Perceived Strategic Uncertainty (PSU) was calculated using the formula suggested by Daft, Sormunen, and Parks (1988). The formula is:

$$PSU = PI \, (PC + PR)$$

PSU, perceived strategic uncertainty of the sector; PI, perceived importance of the sector; PC, perceived complexity of the sector; PR, perceived rate of change of the sector; PC + PR, perceived uncertainty of the sector.

Averaging the perceived strategic uncertainty of sectors in each environmental segment (remote and task) resulted in the perceived strategic uncertainty of that segment. In other words, to calculate the PSU for task environment, the PSU scores of competitive/industry, customer/market, and resources sectors were averaged. In a similar fashion, PSU of the remote segment was calculated by averaging the PSUs for political/legal, economic, social/cultural, and technological sectors. Averaging the PSU scores of all seven environmental sectors resulted in PSU for the total environment. The last part of the research instrument contained personal and firm data.

## Limitations

There are a number of limitations inherent in this study. First, the use of a nonrandom convenience sample is a major limitation. The respondents are not necessarily representative of the ethnically Chinese executive population in Hong Kong. These executives may be more Western oriented in their mindset than those who do not attend workshops conducted by an American. However, the strategies described in the section of concerns with the nonrandom sample increases our confidence in the representativeness of the sample. Nevertheless, no attempt has been made here to generalize the findings and caution should be made in the interpretation of the results.

The second limitation is the problem of equivalency of meanings. Western terminology and measures of time, used in the current study, may not be appropriate for Hong Kong executives. However, this limitation may not pose serious problems. First, Hong Kong and its people have been subjected to 156 years of Western cultural influence. As a result,

**Table 1.** Profile of Environmental Sector Characteristics and Scanning Behavior

| Environmental Sector | Environmental Characteristics | | | | Scanning Behavior | |
|---|---|---|---|---|---|---|
|  | Complexity | Importance | Rate of Change | PSU | Interest | Frequency |
| Political | 3.44 (1.52) | 4.29 (1.72) | 4.22 (1.72) | 36.13 (23.66) | 4.00 (1.55) | 3.69 (1.58) |
| Economic | 4.44 (1.46) | 5.14 (1.54) | 5.09 (1.36) | 51.91 (25.52) | 4.98 (1.24) | 4.85 (1.57) |
| Social | 3.58 (1.55) | 4.20 (1.38) | 3.60 (1.55) | 32.58 (19.56) | 4.16 (1.30) | 3.96 (1.48) |
| Technological | 4.60 (1.55) | 4.96 (1.53) | 5.00 (1.71) | 51.07 (25.37) | 4.67 (1.43) | 4.60 (1.53) |
|   Remote | 4.01 (1.06) | 4.65 (1.15) | 4.48 (1.17) | 42.92 (17.02) | 4.45 (0.90) | 4.28 (0.98) |
| Competitive | 5.38 (1.11) | 5.89 (1.07) | 5.25 (1.07) | 63.82 (51.07) | 5.53 (1.14) | 5.31 (1.41) |
| Customer | 5.02 (1.28) | 5.87 (1.23) | 5.09 (1.06) | 60.85 (20.17) | 5.56 (1.23) | 5.44 (1.36) |
| Resources | 4.16 (1.56) | 4.89 (1.49) | 4.38 (1.22) | 44.84 (23.48) | 4.53 (1.45) | 4.80 (1.42) |
|   Task | 4.85 (1.13) | 5.55 (1.03) | 4.91 (0.90) | 55.52 (18.34) | 5.21 (1.02) | 5.18 (1.08) |
|   Total | 4.37 (0.88) | 5.04 (0.90) | 4.66 (0.80) | 48.74 (13.69) | 4.78 (0.74) | 4.66 (0.84) |

Means based on seven-point Likert scales. Standard deviations are given in parentheses; PSU = Perceived Strategic Uncertainty.

Hong Kong is not completely Western or Eastern but a cultural mix with its own ethos (Lau and Kuan, 1988). Second, the participants in the present study were all familiar with Western business practices and the terminology used in this research. Third, similar instruments have been used in previous empirical research conducted in Hong Kong. These limitations notwithstanding, I proceed with the analysis of the data.

# Results

A profile of environmental characteristics and scanning behavior by sector is presented in Table 1. Table 2 depicts Pearson correlation coefficients among research variables for the remote, task, and total environments. Scale reliability of the research instrument was examined using Cronbach Alpha. The resulting reliability coefficient alphas all exceeded 0.70 level recommended in the literature (Nunnally, 1978).

## Method Variance

Use of self-report data is very common in management research. Some, however, caution against the so-called "common-method" or "mono-method" variance problem present with the use of self-reported data. Method variance may lead to spurious results by inflating (Williams, Cole, and Buckley, 1989) or deflating (Ganster, Hennessey, and Luthans, 1983) the magnitude of the relationships. There are a number of reasons why method variance should not substantially influence the results of this study. First, method variance of self-

**Table 2.** Descriptive Statistics and Correlations among Variables in the Remote, Task, and Total Environments

| Variable | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| Remote |  |  |  |  |  |  |  |  |
|   1. Complexity | 4.01 | 1.06 | 1.00 |  |  |  |  |  |
|   2. Importance | 4.65 | 1.15 | 0.69 | 1.00 |  |  |  |  |
|   3. Change | 4.48 | 1.17 | 0.70 | 0.66 | 1.00 |  |  |  |
|   4. PSU | 42.92 | 17.02 | 0.87 | 0.92 | 0.84 | 1.00 |  |  |
|   5. Interest | 4.45 | 0.90 | 0.60 | 0.61 | 0.45[a] | 0.61 | 1.00 |  |
|   6. Frequency | 4.28 | 0.98 | 0.62 | 0.51 | 0.53 | 0.59 | 0.72 | 1.00 |
| Task |  |  |  |  |  |  |  |  |
|   1. Complexity | 4.85 | 1.13 | 1.00 |  |  |  |  |  |
|   2. Importance | 4.55 | 1.03 | 0.74 | 1.00 |  |  |  |  |
|   3. Change | 5.91 | 0.90 | 0.69 | 0.50 | 1.00 |  |  |  |
|   4. PSU | 55.52 | 18.34 | 0.92 | 0.88 | 0.81 | 1.00 |  |  |
|   5. Interest | 5.21 | 1.02 | 0.76 | 0.68 | 0.58 | 0.76 | 1.00 |  |
|   6. Frequency | 5.18 | 1.08 | 0.66 | 0.67 | 0.37[a] | 0.67 | 0.62 | 1.00 |
| Total |  |  |  |  |  |  |  |  |
|   1. Complexity | 4.37 | 0.88 | 1.00 |  |  |  |  |  |
|   2. Importance | 5.04 | 0.90 | 0.68 | 1.00 |  |  |  |  |
|   3. Change | 4.66 | 0.80 | 0.67 | 0.60 | 1.00 |  |  |  |
|   4. PSU | 48.74 | 13.69 | 0.89 | 0.89 | 0.80 | 1.00 |  |  |
|   5. Interest | 4.78 | 0.74 | 0.59 | 0.58 | 0.41[a] | 0.61 | 1.00 |  |
|   6. Frequency | 4.66 | 0.84 | 0.57 | 0.53 | 0.32[a] | 0.54 | 0.66 | 1.00 |

[a] Significant at 0.05. All others significant at 0.001.

**Table 3.** Differences among Perceived Strategic Uncertainty of Environmental Sectors

| | PSU | 1 | 2 | 3 | 4 | R | 5 | 6 | 7 | T |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Political | 36.13 | | [a] | ns | [a] | [a] | [a] | [a] | [a] | [a] |
| 2. Economic | 51.92 | | | [a] | ns | [a] | [a] | [a] | ns | ns |
| 3. Social | 32.58 | | | | [a] | [a] | [a] | ns | [a] | [a] |
| 4. Technology | 51.07 | | | | | [a] | [a] | [a] | ns | [a] |
| Remote | 42.92 | | | | | | [a] | [a] | ns | [a] |
| 5. Competitive | 63.82 | | | | | | | ns | [a] | [a] |
| 6. Customer | 60.85 | | | | | | | | [a] | [a] |
| 7. Resources | 44.84 | | | | | | | | | [a] |
| Task | 55.52 | | | | | | | | | |

[a] Significant at $p < 0.05$; ns, not significant; PSU, perceived strategic uncertainty.

report data is most problematic in research with strong sentiments on the part of respondents (for example, attitudes and job satisfaction). A much less obtrusive phenomenon such as environmental scanning is less likely to be distorted by self-reports. Second, the social desirability aspect of mono-method bias often leads to compressed response range (Podsakoff and Organ, 1986). This sample did not depict compression of response range. Third, previous management research has shown a high degree of correlation between self-reports and objective measures related to strategic issues (Shortell and Zajac, 1990). These theoretical arguments indicate a low probability of common method variance contamination of the present results.

In addition to the theoretical arguments, I subjected the data to statistical analysis designed to test for mono-method bias. One of the most common tests available for examining mono-method bias is Harman's single-factor test (Podsakoff and Organ, 1986). Based on this test, all variables are hypothesized to load on a single factor representing the common method. Three different factor analyses were conducted relating various variables for the remote, task, and total environments.

The factor analysis for the remote environmental segment resulted in five factors. The first factor accounted for 68.9% of the variance. In the case of the task environment, five factors also resulted with the highest variance contribution of 70.1%. Five factors were derived for the model related to the total environment. The first factor contributed 65.1% of variation. Given the results of these factor analyses, it seems unlikely that mono-method bias exists in the data used in this study.

### Test of Hypotheses

In Hypothesis 1a, I postulated a higher degree of perceived strategic uncertainty (PSU) associated with the task environment than the remote segment. To test the first hypothesis, I calculated perceived strategic uncertainty of the remote environmental segment by averaging the PSU of its four sectors, that is, political/legal, economic, social/cultural, and technological. Following this procedure, the PSU for the remote environment was 42.92. In a similar fashion, the perceived strategic uncertainty of the task environment was calculated by averaging the PSU of competitive/industry, customer/market, and resources sectors. The PSU of the task was calculated as 55.52. A two-tail paired sample $t$-test was utilized to test the hypothesis. The resulting $t$-value of 4.25 was significant at $p < 0.01$. The results support hypothesis 1a and indicate a significantly higher degree of perceived strategic uncertainty associated with the task than the remote environmental segment.

Hypotheses 1b proposed a higher degree of strategic uncertainty associated with the political/legal and economic than the other environmental sectors. To test this hypothesis, one way analysis of variance with Scheffe's multiple comparison procedure with $p = 0.05$ was utilized. Table 3 depicts the results of this test. Hypothesis 1b is easily rejected. Based on PSU scores, economic conditions is ranked third and political factors ranked six among seven environmental sectors. The order of environmental sectors in terms of their perceived strategic uncertainty is competitor, customer, economic, technological, resources, political, and social.

Multiple regression analyses were conducted to test hypotheses 2a and 2b. The purpose was to examine the relationship between perceived strategic uncertainty and scanning behavior as measured by frequency and interest. Three regressions were conducted: one each for the remote, task, and total environments. Results are depicted in Table 4. The fitted models are all significant at $p < 0.001$ levels. Except for the frequency of scanning in the total environment model, all the variables were significantly related to their respective PSUs at $p < 0.05$ or better providing support for hypotheses 2a and 2b.

## Discussion

The purpose of this study was to examine the relationship between environmental uncertainty and scanning behavior of Hong Kong Chinese executives. I will discuss the findings in two parts. First, theoretical implications of the research including similarities and differences between the results of the present study and those obtained in prior research in Nigeria and the United States will be discussed. Second, mana-

**Table 4.** Results of Multiple Regression Analyses

| Variables | Beta | t | p |
|---|---|---|---|
| Dependent: PSU Remote | | | |
|   Independent: | | | |
|     Frequency Remote | 0.32 | 2.01 | 0.039 |
|     Interest Remote | 0.38 | 2.53 | 0.014 |
|   Multiple $R = 0.65$ | Adjusted $R^2 = 0.40$ | $F = 19.06 \ (2, 52)$ | $p = 0.000$ |
| Dependent: PSU Task | | | |
|   Independent: | | | |
|     Frequency task | 0.33 | 3.12 | 0.003 |
|     Interest task | 0.56 | 5.26 | 0.000 |
|   Multiple $R = 0.80$ | Adjusted $R^2 = 0.63$ | $F = 46.88 \ (2, 52)$ | $p = 0.000$ |
| Dependent: PSU Total | | | |
|   Independent: | | | |
|     Frequency Total | 0.25 | 1.75 | 0.086 |
|     Interest Total | 0.45 | 3.15 | 0.003 |
|   Multiple $R = 0.64$ | Adjusted $R^2 = 0.39$ | $F = 18.01 \ (2, 52)$ | $p = 0.000$ |

PSU, Perceived Strategic Uncertainty.

gerial implications of the study will be discussed providing plausible explanations for those findings that are unexpected given the uncertainties associated with the handover of Hong Kong from Britain to China.

## *Theoretical Implications*

There are some similarities as well as differences between the results of this study and those conducted in the United States and Nigeria by Daft, Sormunen, and Parks (1988) and Sawyerr (1993), respectively. With respect to the degree of perceived strategic uncertainty (PSU), the task environment yielded higher scores than the remote environment. One expects a higher degree of PSU associated with the task environment than the remote because the former is more relevant to goal setting and goal attainment (Dill, 1958; Lawrence and Lorsch, 1967; Thompson, 1967; Duncan, 1972; Bourgeois, 1980). This finding also is consistent with that obtained by Sawyerr (1993). Daft, Sormunen, and Parks (1988), however, found no significant differences between the PSU of the task and the general (remote) environment. There are two plausible explanations for this contradiction. First, in the present research, I used composite indices of the PSUs of sectors in the task and remote environment to arrive at the respective PSUs of these two segments. Daft, Sormunen, and Parks (1988), on the other hand, compared the individual PSUs across their six environmental sectors to form their conclusion.

I agree with Sawyerr (1993) that in order to test the hypothesis related to the differences between PSU of the task and remote environment, one should compare the PSU of these two segments rather than comparing six or seven different environmental sectors that represent them. In fact, similar to the results of the present study, the environmental sectors in the task and remote segments in the Daft, Sormunen, and Parks (1988) study did not show a consistent pattern in terms

of their PSU. The second possible explanation may be actual differences in how environmental uncertainty is perceived by Hong Kong executives in contrast to U.S. managers. That is, Hong Kong executives may actually perceive the task environment as posing a greater level of uncertainty than the remote environment.

Given the uncertainties associated with the sovereignty handover of Hong Kong to the PRC, I postulated a greater degree of perceived strategic uncertainty for the political/legal and economic sectors than other environmental sectors. Surprisingly, the data do not support this contention. It appears that regardless of the atmosphere of uncertainty existing in Hong Kong, executives are very pragmatic and focus on the factors most related to their firms' day-to-day performance more directly. Therefore, these strategic decision makers similar to their American counterparts (Daft, Sormunen, and Parks, 1988) consider the competitive and customer sectors as more strategically uncertain than the political/legal sector. In the present study, the environmental sectors in order of their PSUs are competitive, customer, economic, technological, resources, political, and social-cultural. The order in the Daft, Sormunen, and Parks (1988) study was customer, economic, competitor, technological, regulatory, and socio-cultural. For the Sawyerr (1993) study of Nigerian executives, the order was customer, economic, political, competitor, resources, technology, and socio-cultural.

There are similarities and differences in these rank orderings. It seems that customers are considered as a highly uncertain environmental sector by all three national executive samples. Hong Kong managers seem to consider competition their top source of environmental uncertainty, while American and Nigerian executives perceive customers as the highest source of uncertainty. Economic conditions also are ranked very high by all three executive samples. Unlike the Nigerian executives,

the other two national samples do not associate the political sector with a high degree of strategic uncertainty. This may be due to the volatile political climate existing in Nigeria for the past two decades (Sawyerr, 1993). The socio-cultural sector consistently was considered as the least strategic uncertain environmental sector across the three national executive samples.

In the present research, I also found an increase in the intensity of environmental scanning associated with higher levels of strategic uncertainty of environmental sectors. This result is consistent with the Daft, Sormunen, and Parks (1988) finding and is in partial agreement with the results of Sawyerr's research (Sawyerr, 1993).

This study examined the relationship between environmental uncertainty and scanning behavior of Hong Kong Chinese executives. Strategic decision makers in Hong Kong face the formidable task of devising their firm's strategy under the uncertain conditions associated with the handover of Hong Kong to China on July 1, 1997. Given the complexity and the scope of the environment and the bounded rationality of executives (Cyert and March, 1963), these executives still focus on the task at hand, that is, scanning the competitive, customer, and economic conditions with more intensity than other environmental sectors.

## Managerial Implications

There seems to be two different views of the handover. One is an optimistic view held by the territory's elite, seeing Hong Kong as the cosmopolitan capital of Chinese capitalism (Barnathan, 1997). To the local optimists, Hong Kong is poised to become the crucial nexus between the booming China market and the rest of the world, and thus, there seems to be no need to be alarmed. This optimism is apparent in the rush of buying "red chips," which are shares of companies controlled by Chinese interests but listed on the Hong Kong Hang Seng stock exchange. Another sign of this optimism is the unbelievable rise in real estate values in Hong Kong preceding the handover (Barnathan, 1997; Clifford, 1997).

The other view is a pessimistic image shared by many in the West, visioning Hong Kong facing Chinese-style capitalism overridden by bureaucracy, connections, and corruption (Barnathan, 1997; Einhorn and Barnathan, 1997). Of course, it is not possible to predict with certainty that of these scenarios will come closer to the truth.

In light of these contrasting views of the handover, there are a number of plausible reasons for the lower degree of perceived uncertainty and the resulting lack of scanning attention paid to the political/legal sector by the participating executives. First, business executives may be depicting their sense of resignation and political apathy. That is, they should not worry too much because there is little that they can do to influence the political and economic environmental conditions. Prior social research in Hong Kong supports this explanation. For instance, in a survey conducted by Lau and Kuan (1988) majority of Hong Kong Chinese indicated that in the

face of future uncertainties and their inability to control their fate, they can only adjust as best as they can. Hong Kong Chinese preoccupation with harmony, apprehension about erosion of authority, and a sense of political powerlessness are still the most important factors in perpetuating political lethargy among them (Lau and Kuan, 1988).

Second, it is possible that when faced with what many may consider as the highest, most clearly defined probability of radical change in the political/legal context of their work, many Hong Kong executives are like ostriches with their heads in the sand. At the time when both common sense and scanning theory would expect Hong Kong executives to worry about the impending catastrophic change in their political (remote) environment, they seem to concentrate instead on their competitors (task) environment. In other words, in flagrant disregard for expectations, these business executives act as if they are in the middle of the most stable environment.

Third, the surveyed business executives maybe are behaving as some journalists and editors who are believed to exercise self-censorship. Accordingly, some journalists and editors print stories about Chinese dissidents and Hong Kong opposition groups on inside pages or do not print them at all (Lindorff, 1997). Maybe, these executives also are exercising self-censorship in responding to the research questionnaire.

Fourth, it is entirely possible that these executives in fact may be expressing the optimistic sentiments that are shared by many other business analysts (Chowdhury, 1996; Du Bois, 1996a, 1996b, 1997; Zipser, 1996; Editorials, 1997). This optimism is apparent in the way multinationals are "so gung ho" about Hong Kong (Engardio, 1997). Hong Kong is the premier business hub for more than 2,300 multinationals with no slow down in sight as its stature is set to become a bigger dealmaking center for thousands of mainland companies (Engardio, 1997). Furthermore, a recent survey by the American Chamber of Commerce (Engardio, 1997) found that U.S. business people have a favorable view of the Hong Kong business climate, and 53% plan to expand their business in the next three years. The way some people look at it, in the future, "Hong Kong will be the Dragon head of one-third of China" (Engardio and Barnathan, 1997). Perhaps the respondents in the present study share these sentiments.

Finally, it is possible that Hong Kong economic and political conditions are neglected in speculation of the mainland's motivation for smooth transfer (Du Bois, 1997). In other words, there maybe a lack of concern on the part of people in general and these executives in particular because of a belief that the mainland government greatly values the economic significance of Hong Kong to China.[3]

In the absence of concrete data, we can not determine which of the above are the real reasons for the findings of

---

[3] This valid argument was suggested by one of the anonymous reviewers of this journal.

the study. Personal observations and discussions with many executives to some degree support all of these explanations.

## Conclusion and Directions for Further Research

Strategic decision makers have limited capacity and resources for environmental scanning. Therefore, one expects they would focus their scanning attention on those environmental sectors that they perceive as possessing the greatest strategic uncertainty. The results of this study lend support to this hypothesis. This sample of Hong Kong Chinese executives perceive the competitive, customer, and economic sectors as the greatest source of strategic uncertainty and scanned these sectors with greatest frequency and interest.

Future research should examine environmental scanning in different national settings. Another valuable avenue is to examine the influence of national culture (Hofstede, 1980) on the scanning behavior of executives with different nationalities operating in one environmental setting. With the existence of an array of foreign and local firms and executives, Hong Kong provides a very unique setting for this stream of research.

Future research also should examine the relationship between environmental scanning, strategic orientation, and firm performance in Hong Kong. This stream of research has great potential in the effective formulation of business strategies.

## References

Aaker, D. A.: Organizing a Strategic Information Scanning System. *California Management Review* 25 (January 1983): 76–83.

Aguilar, F. J.: *Scanning the Business Environment*, Macmillan Company, New York. 1967.

Aiyepeku, W. O.: Information Utilization by Policy-Makers in Nigeria, Part II: Characteristics of Information Sources Used. *Journal of Information Science* 4 (October 1982): 19–24.

Anastros, D., Bedos, A., and Seaman, B.: The Development of Modern Management Practices in Saudi Arabia. *Columbia Journal of World Business* 15 (Summer 1980): 81–92.

Andrews, K. R.: *The Concept of Corporate Strategy*, Irwin, Burr Ridge, IL. 1987.

Ansoff, H. I.: *Corporate Strategy: An Analytic Approach to Business Policy for Growth and Expansion.* McGraw-Hill, New York. 1965.

Asheghian, P., and Ebrahimi, B.: *International Business*, HarperCollins, New York. 1990.

Auster, E., and Choo, C. W.: Environmental Scanning by CEOs in Two Canadian Industries. *Journal of the American Society for Information Science* 44 (1993): 194–203.

Auster, E, and Choo, C. W.: How Senior Managers Acquire and Use Information in Environmental Scanning. *Information Processing and Management* 30 (1994): 607–618.

Barnathan, J.: Hong Kong the New Economy: High Hopes-and High Anxiety. *Business Week* June 9, 1997, pp. 30–37.

Blandin, J. S., and Brown, W. B.: Uncertainty and Management's Search for Information. *IEEE Transactions on Engineering Management* EM-24 (1977): 114–119.

Bourgeois, L. J.: Strategy and Environment: A Conceptual Integration. *Academy of Management Review* 5 (1980): 25–39.

Boyd, B. K., and Fulk, J.: Executive Scanning and Perceived Uncertainty: A Multidimensional Model. *Journal of Management* 22 (1996): 1–21.

Child, J.: Organizational Structure, Environment and Performance—The Role of Strategic Choice. *Sociology* 6 (1972): 1–22.

Chowdhury, N.: Hong Kong's Looking Good. *Fortune* December 9, 1996, pp. 269–270.

Clifford, M. L.: Hong Kong Financial Markets: Red Chips are Rising. *Business Week* June 9, 1997, pp. 38–41.

Collins, R. F.: *Scanning the Environment for Strategic Information.* Unpublished Doctoral Dissertation, Harvard Business School, 1968.

Culnan, M. J.: Environmental Scanning: The Effects of Task Complexity and Source Accessibility on Information Gathering Behavior. *Decision Sciences* 14 (April 1983): 194–206.

Cyert, R. M., and March, J. G.: *A Behavioral Theory of the Firm*, Prentice-Hall, Englewood Cliffs, NJ. 1963.

Daft, R. L., Sormunen, J., and Parks, D.: Chief Executive Scanning, Environmental Characteristics, and Company Performance: An Empirical Study. *Strategic Management Journal* 9 (March/April 1988): 123–139.

Dill, W. R.: Environment as an Influence on Managerial Autonomy. *Administrative Science Quarterly* 2 (March 1958): 409–443.

Du Bois, P.: The Bullish View on Hong Kong Takeover: Hang Seng Index at 18,000 by Spring of 1999. *Barron's* May 6, 1996a: MW7.

Du Bois, P.: The Smart Money in Hong Kong Bets China Won't Kill Goose That Lays the Golden Eggs. *Barron's* July 1, 1996b: MW7.

Du Bois, P.: Prize Turf: Three Asia Hands Assess the Future for Hong Kong under China. *Barron's* March 31, 1997, pp. 33–39.

Duncan, R. B.: Characteristics of Organizational Environments and Perceived Environmental Uncertainty. *Administrative Science Quarterly* 17 (September 1972): 313–327.

Editorials: We're Betting on Hong Kong. *Business Week* June 9, 1997, p. 64.

Einhorn, B., and Barnathan, J.: Hong Kong Justice System: The Rule of . . .? *Business Week* June 9, 1997: 50–51.

Elenkov, D. S.: Strategic Uncertainty and Environmental Scanning: The Case for Institutional Influences on Scanning Behavior. *Strategic Management Journal* 18 (1997): 287–302.

Engardio, P.: Why Multinationals are so Gung Ho. *Business Week* June 9, 1997, p. 45.

Engardio, P., and Barnathan, J.: Hong Kong Industry: Drawing a New Map. *Business Week* June 9, 1997, pp. 42–44, 46.

Fahey, L., and King, W. R.: Environmental Scanning for Corporate Planning. *Business Horizons* 20 (August 1977): 61–71.

Fahey, L., and Narayanan, V. K.: *Macroenvironmental Analysis for Strategic Management*, West, St. Paul, MN. 1986.

Farh, J., Hoffman, R., and Hegarty, W.: Assessing Environmental Scanning at the Subunit Level: A Multitrait-Multimethod Analysis. *Decision Sciences* 5 (1984): 197–220.

Flores, F.: The Applicability of American Management Practices to

Developing Countries: A Case Study of the Philippines. *Management International Review* 12 (1972): 83–89.

Ganster, D. C., Hennessey, H. W., and Luthans, F.: Social Desirability Response Effects: Three Alternative Models. *Academy of Management Journal* 26 (1983): 321–331.

Ghoshal, S.: Environmental Scanning in Korean Firms: Organizational Isomorphism in Action. *Journal of International Business Studies* 19 (Spring 1988): 69–86.

Hall, R. H.: *Organizations: Structure and Process*, Prentice-Hall, Englewood Cliffs, NJ. 1972.

Hambrick, D. C.: Specialization of Environmental Scanning Activities Among Upper Level Executives. *Journal of Management Studies* 18 (July 1981): 299–320.

Hambrick, D. C.: Environmental Scanning and Organizational Strategy. *Strategic Management Journal* 3 (April/June 1982): 159–174.

Hofstede, G.: *Culture's Consequences*, Sage, Thousand Oaks, CA. 1980.

Jain, S. C.: Environmental Scanning in U.S. Corporations. *Long Range Planning* 17 (1984): 117–128.

Javidan, M.: The Impact of Environmental Uncertainty on Long-Range Planning Practices of the U.S. Savings and Loan Industry. *Strategic Management Journal* 5 (1984): 381–392.

Keegan, W. J.: Multinational Scanning: A Study of the Information Sources Utilized by Headquarters' Executives in Multinational Companies. *Administrative Science Quarterly* 19 (September 1974): 411–421.

Kefalas, A., and Schoderbek, P. P.: Scanning the Business Environment. *Decision Sciences* 4 (January 1973): 63–74.

Kirkbride, P. S., and Westwood, R. I.: Hong Kong, in *Managers and National Culture: A Global Perspective*, R. B. Peterson, ed., Quorum, Westport, CT. 1993, pp. 322–347.

Lau, S-I., and Kuan H-C.: *The Ethos of Hong Kong Chinese*, The Chinese University Press, Hong Kong. 1988.

Lawrence, P. R.: Organization and Environment Perspective, in *Perspectives on Organization Design and Behavior*, A. H. Van de Van and W. F. Joyce, eds., Wiley, New York. 1981, pp. 311–337.

Lawrence, P. R., and Lorsch, J. W.: *Organization and Environment*, Irwin, Homewood, IL. 1967.

Lenz, R. T., and Engledow, J.: Environmental Analysis Units and Strategic Decision Making: A Field Study of Selected "Leading-Edge" Corporations. *Strategic Management Journal* 7 (1986): 69–79.

Lindorff, D.: Hong Kong Media: Information Anxiety. *Business Week* June 9, 1997, pp. 52–53.

Milliken, F. J.: Three Types of Perceived Uncertainty about the Environment: State, Effect, and Response Uncertainty. *Academy of Management Review* 12 (1987): 133–143.

Nunnally, J.C.: *Psychometric Theory*, 2nd ed. McGraw-Hill, New York. 1978.

Pearce, J. A. II, and Robinson, R. B. Jr.: *Formulation, Implementation, and Control of Competitive Strategy*, Irwin, Homewood, IL. 1988.

Peters, M. P., and Brush, C. G.: Market Information Scanning Activities and Growth of New Ventures: A Comparison of Service and Manufacturing Businesses. *Journal of Business Research* 36 (1996): 81–89.

Phillips, L. A., and Calantone, R.: Hong Kong Retailers: The Relationship between Environment Hostility, Planning, and Performance. *International Journal of Retail and Distribution Management* 22 (1994): 13–24.

Pfeffer, J., and Salancik, F. R.: *The External Control of Organizations*, Harper and Row, New York, NY. 1978.

Podsakoff, P. M., and Organ, D. W.: Self-Reports in Organizational Research: Problems and Prospects. *Journal of Management* 12 (1986): 531–544.

Porter, M. E.: *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, Free Press, New York. 1980.

Rhyne, L. C.: The Relationship of Information Usage Characteristics to Planning System Sophistication: An Empirical Examination. *Strategic Management Journal* 6 (October/December 1985): 319–337.

Sawyerr, O. O.: Environmental Uncertainty and Environmental Scanning Activities of Nigerian Manufacturing Executives: A Comparative Analysis. *Strategic Management Journal* 14 (May 1993): 287–299.

Shortell, S. M., and Zajac, E. J.: Perceptual and Archival Measures of Miles and Snow's Strategic Types: A Comprehensive Assessment of Reliability and Validity. *Academy of Management Journal* 33 (1990): 817–832.

Siegel, S., and Castellan, N. J. Jr.: *Nonparametric Statistics for the Behavioral Sciences*, Second Edition, McGraw-Hill, New York. 1988.

Stubbart, C.: Are Environmental Scanning Units Effective? *Long Range Planning* 15 (June 1982): 139–145.

Subramanian, R., Fernandes, N., and Harper, E.: An Empirical Examination of the Relationship between Strategy and Scanning. *Mid-Atlantic Journal of Business* 29 (1993a): 315–330.

Subramanian, R., Fernandes, N., and Harper, E.: Environmental Scanning in U.S. Companies: Their Nature and Their Relationship to Performance. *Management International Review* 33 (1993b): 271–286.

Subramanian, R., Kumar, K., and Yauger, C.: The Scanning of Task Environments in Hospitals: An Empirical Study. *Journal of Applied Business Research* 10 (1994): 104–115.

Tan, J. J., and Litschert, R. J.: Environment-Strategy Relationship and Its Performance Implications: An Empirical Study of the Chinese Electronics Industry. *Strategic Management Journal* 15 (1994): 1–20.

Thomas, P.: Environmental Scanning—The State of the Art. *Long Range Planning* 13 (1980): 20–28.

Thompson, J. D.: *Organizations in Action*, McGraw-Hill, New York. 1967.

Tung, R. L.: Dimensions of Organizational Environments: An Exploratory Study of Their Impact on Organizational Structure. *Academy of Management Journal* 22 (1979): 672–693.

Wang, E.: *Hong Kong 1997: The Politics of Transition*, Lynne Reinner, Boulder, CO. 1995.

Williams, L. J., Cole, J. A., and Buckley, M. R.: Lack of Method Variance in Self-Reported Affect and Perceptions at Work: Reality or Artifact? *Journal of Applied Psychology* 74 (1989): 462–468.

Yasai-Ardekani, M., and Nystrom, P. C.: Design for Environmental Scanning Systems: Tests of a Contingency Theory. *Management Science* 42 (1996): 187–204.

Zahra, S. A.: Corporate Strategic Type, Environmental Perceptions, Managerial Philosophies, and Goals: An Empirical Study. *Akron Business and Economic Review* 18 (1987): 64–77.

Zipser, A.: A Dragon with Teeth: Does Rude Awakening Await Bullish Hong Kong Crowd? *Barron's* December 16, 1996, p. 12.