Environmental Scanning Behavior of Small and Medium Firms in Developing Economies: Evidence from Botswana

Zelealem T. Temtime
University of Botswana, P.O.Box 70471 Gaborne, Botswana

Abstract: Although environmental scanning is a key concept in management research, its application and importance particularly in developing African countries is not well investigated. Researchers in strategic management in African developing countries have paid only little attention to the study of the environmental scanning behavior of corporate leaders. Scanning the company's external environment for the purpose of exploiting opportunities and minimizing threats is a precondition for the survival and success of firms in the developed economies. Does this precondition also apply to African developing countries like Botswana? Are firms in Botswana formulating their strategies for the attainment of organizational goals without scanning their environment? If not, what are their scanning behaviors?

Data were collected from a randomly selected sample of 44 firms in Botswana to answer these and other basic questions. The perceived uncertainty of six environmental sectors is determined by measuring the perceived importance (I), degree of complexity (C), and rate of change (R) in each environmental sector on a 5-point Likert scale ranging from very low (1) to very high (5). Then perceived strategic uncertainty (PSU) is found by adapting the formula used by Saweyerr (1993) and Elenkov (1997), i.e., $PSU=I(C+R)$. Frequency of scanning sources employed by corporate leaders to analyze each environmental sector is also measured using a 5-point Likert scale, ranging from least frequently used (1) to most frequently used (5) sources. Finally correlation coefficients were calculated between frequency of scanning sources and perceived strategic uncertainty of environmental sectors to evaluate how frequently corporate leaders gather, interpret and use information about each sector as perceived strategic uncertainty increases and decreases.

The findings indicated that companies in Botswana do scan their environment and use the information in major managerial decision-making processes, particularly in strategy formulation. Though more importance is attached to the customer/market, competition and economic sectors, corporate leaders in Botswana tend to rely more on impersonal and internal sources as opposed to personal and external sources to analyze an increasingly uncertain sector. This scanning practice calls for the attention of researchers in strategic management in developing African countries. Further implications for future research are highlighted.

Keywords: Scanning, Scanning sources, Scanning Frequency, Strategic Planning, Small and Medium Enterprises, Environmental sectors

Introduction

An increasing intensity of competition, globalization of the world economy, rapid technological changes, and the growing expectations of customers and the work force characterize today's business environment. Success in this turbulent and dynamic business world depends on the ability of firms in gathering and processing information from their environment, and the amount of relevant information used in the strategic planning process. Environment can create problems and opportunities for organizations, which depend on it for scarce and valued resources. It, perhaps more than any other factor, affects organizational structures, internal processes and managerial decision-making. It is important both from an information processing perspective and its role in creating uncertainty for managers. Environmental uncertainty increases information processing within organizations because managers must identify opportunities, detect and interpret problem areas, and implement strategic or structural adaptations. An important competitive weapon for firms is, therefore, to acquire superior information about the environment. An information advantage about environmental opportunities and problems depends on management's perception of signals that other organizations miss Duncan, (1972). The process of gathering and interpreting pertinent information from the environment and introducing the results into the strategic planning process is referred to as environmental scanning.

Corporate leaders scan their environment in different modes and frequency. Information could be obtained about the environment through different sources. Personal sources include face-to-face and telephone communication whereas impersonal (written) sources include documents, reports survey results, magazines and newspapers. The sources of information could also be internal or external to the organization. Internal information includes memos; reports, discussions and meetings with organizational members whereas external sources include personal contacts and other media outside the organization. The informal (personal) sources are unstructured but content-rich while written sources enable to obtain tangible data about discrete events. The frequency of scanning is also very crucial. Corporate leaders may gather and interpret information irregularly or continuously, or regularly on daily, weekly, monthly, quarterly or yearly basis.

Environmental scanning has long been considered as a precondition for the survival and growth of firms in the western societies Bourgeois, (1980). Does this precondition also apply to firms in developing African countries? The purpose of this paper is to examine the environmental scanning behavior and sources of information employed by corporate leaders in Botswana by testing a model of scanning behavior adapted from Sawyer (1993) and Elenkov (1997). The study has attempted to answer questions like what environmental

sectors considered highly important by corporate leaders in Botswana; which environmental sectors bring greater strategic uncertainties for corporate leaders; what sources of information were most utilized to obtain information about these sectors?

Materials and Methods

Why Study Environmental Scanning?: The potential significance of this study, which is very limited in its scope, is based on some assumptions. First, scanning is the first link in the chain of perceptions and actions that permit an organization to adapt to its environment. Scanning provides the external intelligence that corporate leaders use in planning, decision-making and strategy formulation. Second, corporate leaders are responsible for the organization-environment alignment. Although corporate leaders do not do all scanning, they are responsible for bringing together specialized information from the various functional units in the organization.

As corporate leaders have limited time and cognitive capacity to comprehensively and completely understand the environment, they must choose among scanning alternatives Elenkove, (1997). They may choose to scan broadly across the general environment or focus narrowly in sectors in the task environment. Firms may attain a strategic information advantage or disadvantage depending on how scanning is conducted. Identifying the corporate leaders' scanning behavior in firms in a developing country may provide insights into effective scanning processes.

There is also a continuing puzzlement about written versus personal scanning modes in organizations. A complex environment would seem to call for an increased use of sophisticated scanning systems. Corporate leaders have access to a variety of formal and informal media. But, most information at corporate level is obtained through ad hoc, human sources Duncan (1972) and the scanning process tends to be irregular rather than systematic. Thus, an examination of the scanning sources can shed some light on the scanning behavior of corporate leaders in a developing country.

Finally, research on formal strategic planning in developing countries has identified several factors that differentiate the planning environment in developing countries from that of the developed countries. These factors include the absence of technology required to systematically monitor the environment and collect needed data, highly unstable economic and political environments, lower levels of general and management education, absence of systematic data depository or information sources, and the absence of the political and social infrastructures necessary for the carrying out of environmental scanning activities Sawyerr, (1993). It is therefore, necessary to extend the external validity of the results of environmental research by examining the scanning behavior of corporate leaders in a developing African country.

Strategic Planning Without Environmental Scanning: The literature on strategic business planning is both descriptive Matthews and Scott, (1995; Pearce, Freeman and Robinson, (1987) and Mintzberg, (1994) and prescriptive Brews and Hunt, (1999); Elenkov, (1997). It can generally be described as an active process of continuously determining what an organization is able or intends to carry out with respect to its future, and how it expects to do this Mintzberg, (1994). This involves setting organizational goals and determining the means by which to achieve the goals. The environment in which strategic planning takes place may have an important effect on how it is conducted Lindsay and Rue, (1980). A significant body of corporate planning literature is currently addressing environmental scanning, which is not conducted for its own sake. It is a critical input to strategic planning. Firms today, more than ever before, are profoundly sensitive to changes in the environment. While environmental changes may be felt throughout the industry, the impact most affects the strategic planning processes of each firm.

Thus, firms must scan and monitor the relevant changes in the environment and meet the challenges presented by these changes. As firms begin to depend more on formalized strategic business planning to pursue their goals, their need for a systematic approach to environmental scanning increases simultaneously. In other words, to cope with the changing and shifting environment, corporate leaders or the strategic planning process must find new ways for exploring the shape of things to come and for analyzing strategic alternatives. The effectiveness of strategic planning is directly related to the capacity for environmental scanning. Accurate analysis provides the best framework for maximizing opportunities and allocating resources for the anticipated future. There is, therefore, an overwhelming consensus in the literature Daft and Weick, (1984); Mintzberg, (1994); Hambrick, (1981a); Aguilar, (1967) that environmental scanning is a basic input for formal strategic planning process.

Environmental Sectors And Strategic Uncertainty: The environment is defined as the relevant physical and social factors outside the boundary of an organization that are taken into consideration during organizational decision making. Several studies on environmental scanning and strategic planning Daft and Weick, (1984) Elenkov, (1997); Sawyer, (1993) and Hambrick, (1983) conceptualized the environment as having several sectors that exist in two-layers- the task and general environment. The task environment involves environmental elements that are commonly defined to include competitors, suppliers, customers and technological factors. The general environment refers to sectors that affect organizations indirectly and include economic, political, demographic, cultural, regulatory and social sectors. These sectors are expected to influence scanning and other organizational activities because they differ in uncertainty. Thus, it is critical that an organization be aware of the nature of the environment that it currently faces and anticipates facing, and the need to incorporate changes in its strategy formulation and implementation.

Environmental scanning is the means through which corporate leaders perceive external factors, events and trends. Scanning represents a difficult organizational problem because the environment is vast, complex, and changing. As managers have limited cognitive capacity to comprehensively understand the environment Elenkov, (1997), they must find scanning mechanisms that yield adequate information displays of external events. While a number of studies Hambrick, (1981b); Thomas, (1980); Daft and Langel, (1986) have

explored the fit between organization and environment, there is less knowledge, particularly in developing countries, about how impressions of the environment are formed among corporate leaders who are responsible for responding with new strategies and structures.

Perceived environmental uncertainty is the absence of information about organizations, activities and events in the environment. It is the difference between available and derived information Rhyne, (1985). Two environmental characteristics, complexity and rate of change, influence perceived uncertainty. Complexity refers to the heterogeneity of external events that are relevant to the organization. The larger the number and diversity of external events, the higher the complexity. Rate of change refers to the frequency of changes that occur in the organization's environment. When rate of change is high, external activities and events shift rapidly so decision makers do not have accurate information about them. As the rate of change increases, perceived uncertainty of the sector also increases. As level of complexity and rate of change in environmental sectors increase, the amount of uncertainty perceived by corporate leaders also increases Duncan, (1972). However, as shown in Fig. 1, uncertainty by itself will not lead to scanning behavior. Unless the external events are perceived important, managers may have little interest in them. Perceived strategic importance is related to the notion of resource dependency, which is the extent to which the sector provides resources for the attainment of organizational goals. Uncertainty and importance together create 'strategic uncertainty' for corporate leaders. Their combination is expected to generate a need for strategy makers to scan events in selected environmental sectors Hambrick, (1983). Sector complexity and rate of change, therefore, lead to perceived sector uncertainty, which create strategic uncertainty for corporate leaders if the sector is perceived to be important to the strategic planning process of the organization.

Strategic uncertainty is then measured by integrating the measurement for rate of change, degree of complexity, and sector importance as validated by Duncan, 1972 and applied by Sawyerr (1993) and Elenkov (1997). The formula used by Sawyer (1993) and Elenkov (1997) to construct the score for the strategic uncertainty variable for each environmental sector was as follows.

$$PSU = I(C+R)$$

Where:

PSU = perceived strategic uncertainty
I = perceived sector importance
C+R = perceived sector uncertainty
C = perceived sector complexity
R = perceived sector rate of change

Strategic uncertainty is assumed to be a multiplicative rather than a linear function of importance and uncertainty. If, for example, sector importance and uncertainty are both low, then perceived strategic uncertainty is also low. However, if importance and uncertainty are both high, perceived strategic uncertainty will be several times greater for the corporate leader than when importance and uncertainty are both low.

Previous studies by Tan and Litschert (1994) and Hambrick (1983) found that strategic uncertainty is associated with both the frequency and mode of scanning, as reflected in greater frequency and greater use of personal and external sources of information. Sectors characterized by low strategic uncertainty are found to be associated with infrequent scanning and greater use of impersonal sources of information. Corporate leaders are expected to direct their scanning toward the uncertain sectors and to use sources that provide a better picture of the environment.

One issue to be tested, other than scanning sources and frequency, is whether sectors in the task environment generate greater strategic uncertainty than sectors in the general environment. The task environment is expected to change more rapidly, to be more complex, and to be perceived as more important than the general environment Smeltzer et al, (1988). Customers' tastes change, competitive strategies change, and policy-makers must respond to unpredictable events. Economic conditions or social demographics may gradually and indirectly affect the organization, but customers and competitors may affect performance on a day-to-day basis.

Environmental Scanning Behavior, Sources And Frequency: Despite research on environmental uncertainty, the question remains, how do corporate leaders learn about the environment? They may scan the environment directly or learn from others in the organization. They may increase or decrease the frequency with which they scan, and they may select among information modes or channels. Scanning frequency is the number of time managers receive data about the environment. Depending on the nature of the environment managers may process data irregularly, regular or continuously depending upon the perceived need for data about external events. Scanning mode pertain to the source or medium through which managers learn about the environment. It is, therefore, expected that frequency of scanning will differ by sector and will be related to strategic uncertainty. As strategic uncertainty reflects the strategic value of information for organizational performance, managers will more frequently acquire data about strategically uncertain sectors, Hambrick, (1981a).

Managers use different information modes including personal, impersonal, internal, and external sources of information. Personal sources refer to direct human contacts typified by face-to-face and telephone media. Impersonal sources are written, and include formal reports, newspapers, survey results, and the output of management information systems. Personal versus impersonal is, therefore, analogous to the human versus documentary sources Elenkov, (1997). But, which sources-personal or impersonal- are better suited for interpreting an uncertain environment? Personal sources of information have been found important to managers and are consistent with the informal and irregular scanning that typifies many organizations in developed western countries Thomas, (1980). Although the ability to condense a broad base of data into written form also makes impersonal sources useful for environmental scanning, personal sources of information are content-rich and face-to-face and telephone information exchanges provide multiple cues and allow for rapid feedback, thereby facilitating understanding when uncertainty is high. As Elenkov (1997) argues personal communications are content-rich and enable managers to detect weak signals. Written sources are appropriate when environmental events are discrete and analyzable.
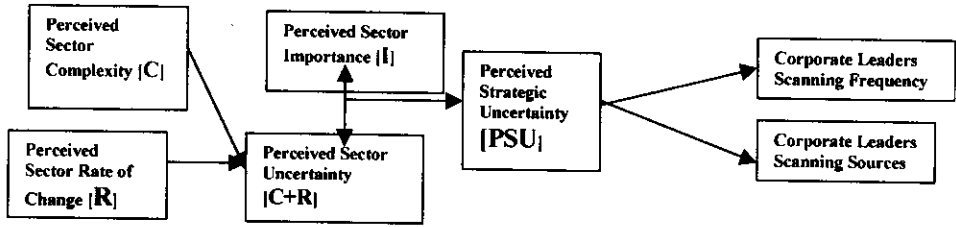
Fig. 1: Model of Corporate Scanning Behavior

When strategic uncertainty is very low, impersonal or written sources may provide sufficient data Daft and Langel, (1986).

The other important issue is whether scanning information originates internal or external to the firm. Internal information pertains to data, reports, memos, or discussions with internal managers and employees about the external environment. External sources include personal tours, telephone discussions with peers in other companies, trade magazines, newspapers, information services, and attendance at association meetings outside the organization. Since many people within the organization scan parts of the environment, corporate leaders will tend to use both internal and external sources of information. However, as strategic uncertainty increases it is expected that managers will want to form their impression through direct contact with key environmental sectors. Direct contact means that data are undiluted and do not suffer from the loss of meaning associated with passing information through intermediaries Tan and Litschert, (1994).

Moreover, internal information tends to be distorted as it is passed up the hierarchy. Although internal sources may still be used by corporate leaders to supplement external sources, top executives are expected to respond to strategic uncertainty in the environment through more frequent use of direct external sources, and less frequent use of internal sources Elenkov, (1997).

Sample selection was designed to include firms for which environmental sectors could be clearly defined. This criterion has led to the selection of small and medium, single business firms. A single business means the firm has a defined task environment, which is not the case when the firm is responsible for multiple businesses operating in multiple environments. Moreover the selected firms were independent businesses, so scanning behavior would be related to environmental forces rather than to the policy of a parent company.

Although 74 firms were drawn from the list provided by the Botswana Confederation of Commerce, Industry and Manpower (BOCCIM) for possible inclusion in the study, only 44 firms satisfied the requirement. This could be attributed to the fact that the manufacturing sector in Botswana is very weak and that several companies are simply extensions of firms in South Africa and Zimbabwe. The data were collected through structured questionnaire completed by the chief executives (referred to as 'corporate leaders' in this paper) in the presence of the researcher in their offices.

Corporate leaders were given a written definition of each environmental sector[1]. They were then asked about three aspects of each sector-degree of complexity, rate of change and importance using a 5-point Likert scale, ranging from very low (1) to very high (5). Perceived

strategic uncertainty of each sector is then derived from these questions by applying the formula $PSU=I(C + R)$ as defined earlier.

Environmental scanning sources were measured using questions on internal versus external, and personal versus impersonal. The respondents were given sample information from each source and asked to indicate which source was most frequently utilized to gather information about each sector. The frequency of (number of times) scanning each sector was also measured on a 5-point scale, ranging from least frequently used source (1) to most frequently used sources (5).

Finally the degree of association between perceived strategic uncertainty and scanning sources is evaluated by computing a correlation coefficient between the strategic uncertainty score $[(SU=I(C+R)]$ and the scanning frequency for all sources.

The data analysis involved two procedures using statistical package for Social Scientists (SPSS) version ten. The means and standard deviations for degree of complexity, rate of change and perceived importance were computed for each of the six sectors. Pearson correlation coefficients were calculated to measure the association between perceived strategic uncertainty of sectors and frequency of scanning modes. Multiple range tests were also calculated to determine statistically significant differences in strategic uncertainty across sectors.

Results and Discussion

Out of the 44 respondents, 14 were in the manufacturing industry, 19 in the merchandising (wholesale and retail business) and the remaining 11 were from the service industry. The respondents have, on average, 5.6 years of relevant managerial experience and 4.2 years as managing directors or chief executives. 62 percent of them described that they have a moderately structured strategic business planning process in their firm whereas 23 percent have totally unstructured, informal strategic planning process. Only 6 (13.5 percent) firms (3 in manufacturing, 2 in merchandising, and 1 in the service

Table 1: Weighted Means, Rankings and Variation of Sectors in Importance, Complexity and Rate of Change

	Importance		Complexity		Change	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Task Environment						
Customer	40	07.9	38	10.7	27	10.3
Competitor	38	08.7	25	15.2	26	14.2
Technological	26	10.6	20	10.9	22	12.6
General Environment						
Economic	27	09.6	24	13.9	29	12.1
Regulatory	22	12.3	17	13.3	17	10.3
Sociocultural	17	11.1	12	11.2	15	11.4

sector) were found using formalized strategic business planning process. Only 7 (16 percent) out of the 44 chief executives were women. The findings of the study are presented and discussed under four major topics-sector characteristics, sector strategic uncertainty, frequency of scanning sources, and the relationship between strategic uncertainty and scanning frequency.

Characteristics of Environmental sectors: Characteristics refer to the nature of the sector in terms of complexity, rate of change and perceived importance for the attainment of organizational goals. The profile of sector characteristics is reported in Table 1. Some environmental sectors are more predictable than others. The rate of change taking place in each sector is different. First, customer sector is perceived to be important, complex (unpredictable) and changing. Almost all the corporate leaders attached very high importance to information pertaining to customers as indicated by an average point of 40. In line with previous studies, this finding confirms that corporate leaders in some developing countries attach more importance to the customer and market related information than information pertaining to other sectors.

The next highest degree of importance in the task environment is given to competition. This reflects the increasing intensity of competition and globalization of the world economy. The strong economy (based on abundant mineral resources) coupled with the political and legal stability has been attracting competition from the Southern Africa Development Community (SADC) particularly from South Africa and Zimbabwe, as well as from around the globe. This has increased the perceived importance of information about competition in major managerial decision-making processes.

Although the economic sector is considered to be part of the general environment, it was ranked first for rate of change and fairly high for importance and complexity. This indicated that such economic factors as price, interest rates, inflation, exchange rates and so on are changing rapidly and affecting managerial decisions. The standard deviations of the mean (32) from the response of individual leaders about the complexity of the economic sector were found to be the highest next to competitors' unpredictability (15.2). In other words, the perception of corporate leaders about the unpredictability of factors and trends in the economic sector was different from each other. This could be attributed to the major weakness of this paper-lack of uniformity and mixed nature of the sample firms. The impact of changes in the exchange rate may not be the same for service and manufacturing firms as the later depend more on foreign markets for raw materials, component parts and capital goods.

The lowest variation in all the three characteristics of sectors-importance, complexity and rate of change-was observed for the customer sector, which indicated that most firms regardless of the industry in which they operate, have common understanding and perception about the complexities and changes taking place and the importance of the customer/market sector.

In general, the environmental scanning efforts of corporate leaders in Botswana were geared more toward gathering and processing information about customers, local, regional and global competition, and the local and regional economic trends. This result was in line with the findings of previous studies in developed countries. The technological sector was ranked next to customers,

competitors and economic sectors for degree of importance. The mixed nature of sample companies affected the ranking of technological sectors because only 14 out of 44 firms were manufacturing firms, which are more sensitive to technological changes than service, or merchandising firms.

Regulatory and sociocultural issues related information was considered least important as they have the lowest degree of complexity and rate of change. This could be attributed to the existence of reasonable degree of political, social, cultural and economic stability in the country. Firms seem not tightly controlled or regulated at the local or national level. Sawyer's study (1993) revealed that high rate of change and complexities were observed in the regulatory sectors due to political and social instability in Nigeria in 1992.

Environmental Sector Strategic Uncertainty: Strategic uncertainty (SU) for corporate leaders was defined as the sum of degree complexity (C) (unpredictability) and rate of change (R) multiplied by perceived sector importance (I), i.e., $PSU=I(C+R)$. Perceived strategic uncertainty across the six sectors is ranked and reported in Table 2. Each sector presents a different level of strategic uncertainty for corporate leaders. As shown by the formula, sectors with high points in complexity, rate of change and importance will exert high level of strategic uncertainty for corporate leaders. These sectors in decreasing order of strategic uncertainty are customer, economic, competitor, and technological, regulatory and socio-cultural sectors. The top three are statistically different from the bottom three. In sum, it cannot be generalized that task environment creates more strategic uncertainty, because the economic sector is considered part of the general environment and ranked second in strategic uncertainty.

Table 2: Difference among environmental sectors for Strategic Uncertainty

Environmental Sectors	Strategic Uncertainty $SU=I(C+R)/100$
Task Environment	
Customer	26
Competitor	19
Technological	11
General Environment	
Economic	20
Regulatory	08
Socio-cultural	05

The technological sector is ranked fourth. This sector was important, but less strategically uncertain than customer, economic and competitor sectors. This could be attributed to reasons mentioned earlier. The regulatory and sociocultural sectors had minor strategic uncertainty for the firms. There is much consensus in the literature Elenkov, (1997); Daft and weick, (1984) that disaggregating the environment into sectors would show that the task environment creates more uncertainty than the general environment. However, this statement is rejected as the technological sector (task environment) has less perceived importance, complexity and change than the economic sector (general environment).

The Frequency of Scanning Sources Applied to Each Sector: The model of scanning behavior being tested shows that sectors with high level of strategic uncertainty will be scanned or analyzed by corporate leaders most frequently. However, the researcher included all possible modes of scanning to see which

mode is considered effective and used more frequently than the others to gather information about each sector. Nine scanning modes are identified as validated by Sawyer (1993) and Elenkove (1997). These are Personal External (PE), Personal Internal (PI), All Personal (AP), Written External (WE), Written Internal (WI), All Written (AW), All External (AE), All Internal (AI), All Sources Table 3 shows that all scanning sources are used by corporate leaders with varying frequency to gather information about each sector. But, the most important finding was that information pertaining to customers was gathered most frequently through the use of written sources. But, studies by Daft and Lengel (1986), Elenkov (1997), and Sawyerr (1993) found that personal sources were most frequently utilized to get information related to customers and markets. The other important point was that information about competitors was obtained from internal sources (mean=29), particularly personal internal sources (mean=29). This could be attributed to the tendency of corporate leaders to depend on the scanning service of other organizational members or the scanning responsibility has been delegated to other managerial personnel.

The most frequently used scanning channels for information about technological changes and trends were external sources. This is in line with the findings of other studies. However, the personal external sources (14) were less frequently used than personal internal sources (21), which is contrary to the practice of most firms in the developed countries. It is through personal contacts outside the organization, by attending workshops and trade fairs that companies collect and process information about competitors and technological changes.

The written external sources were used most frequently for scanning of the economic and regulatory sector, perhaps because most data about the economy and government policies come in the form of published reports.

Table 3: Weighted Means and Rankings of Frequency of Scanning Sources

	PE	PI	AP	WE	WI	AW	AE	AI	AS
Task Environment									
Customer	25	26	29	32	28	33	20	18	36
Competitor	22	29	17	17	14	20	16	29	31
Technological	14	21	15	14	24	22	31	24	26
General Environment									
Economic	23	23	27	32	22	32	33	24	34
Regulatory	12	12	13	35	16	29	27	14	21
Sociocultural	13	11	16	16	10	09	16	11	20

Review of their response indicated 7 out of the 14 manufacturing firms considered the socio-cultural sector as very important and must be studied most frequently because the work ethics, working culture, and expectations of the workforce has becoming a decisive factor of profitability and success. Although demographic shifts and social changes are not significantly affecting organizational performance in Botswana, the attitude of the people toward work, innovation, productivity, creativity, as guided by the culture will have great consequences.

The Relationship between Frequency of Scanning Sources and Strategic Uncertainty: Pearson correlation coefficients were calculated using the variables in Table 2 and Table 3. The correlation coefficient between over-all scanning frequency and strategic uncertainty across the sectors is 0.63, which is significant beyond the 0.001 level. The primary finding

was that all correlations were positive and statistically significant. This means that corporate leaders use every scanning mode more frequently when strategic uncertainty is high. Thus, it can be inferred from this finding that strategic uncertainty is a predictor of the frequency with which corporate leaders scan environmental sectors.

Table 4: Correlations Between Strategic Uncertainty and Frequency of Scanning Sources

Scanning Sources Frequency	Sector strategic Uncertainty (Correlation Coefficients)%
All sources	63
All Personal sources	43
Personal Internal sources	43
All External sources	46
All Internal sources	47
Personal external sources	56
All Written sources	56
Written Internal sources	57
Written External sources	58

Many research findings Bourgeois, (1980); Hambrick, (1983); Tan and Litschert, (1994) indicated that as environmental uncertainty increases, corporate leaders rely more heavily on personal sources than on written sources, and on external rather than internal sources. However, this study found the opposite. The highest correlation (r=0.58) is between written external modes and strategic uncertainty. The higher the uncertainty in environmental sectors the more frequently corporate leaders rely on written modes both within (r=0.57) and outside (r=0.58) the organization. The lowest correlation is for personal (r=0.43) sources. Frequency of personal sources does not increase as rapidly with strategic uncertainty. The correlation between internal sources (r=0.47) and external (r=0.46) are almost identical. This means that corporate leaders relied as much on internal discussions and reports as they did on external media. There is no difference in the use of internal and external sources, and both are used more frequently as strategic uncertainty increases. This is in contrast to the results of previous studies by Smeltzer et'al (1988), Elenkov (1997), and Aguilar (1967). Their studies concluded that as strategic uncertainties increases, the scanning mode shifts toward personal, informal, and external sources of information.

This could be attributed to two causes. First, most corporate leaders seem to prefer to give the job of environmental scanning to other managerial staff in the firm. Second, there seems to be lack of well organized scanning system as well as the necessary scanning and information processing skills and knowledge. The interview result (not in the tables) also shows the existence of misconception of environmental scanning. Most respondents tend to associate it with information (about price, competitors, customers reaction, etc) that comes to their desk and used in the decision making process without them putting meaningful effort to obtain it. This implies that there is strong need on the part of corporate leaders in Botswana for re-examination of the scanning sources that best suit for analyzing an increasingly uncertain business environment.

Implications For Future Research: The external environment is a significant contingency for organizations. The purpose of this study was to examine the means through which corporate leaders in Botswana scan and interpret the environment. The findings indicate that environmental sectors differ widely in the amount of strategic uncertainty created for corporate leaders, and

customers, economic, and competition sectors had greater strategic uncertainty than technological, regulatory and sociocultural sectors. The customer and the competitor are both in the task environment, but the economic sector is in the general environment. Thus, sectors in the general environment do create uncertainty and need to be scanned by corporate leaders.

Corporate leaders responded to perceived strategic uncertainty across sectors with greater scanning frequency in all modes. The greater use of all modes suggests that corporate leaders use multiple sources to interpret the environment. But, unlike other findings, somewhat greater use of written compared to personal modes has been found. Written and personal sources may complement one another to give a better view of an uncertain environment. Personal sources are important because their richness enables subtle signals to be detected. Although the use of personal sources requires interpersonal, technical and analytical skills, greater reliance on written media will have strategic disadvantage for the firm. The greater preference for written modes as uncertainty increases reflects the inability of corporate leaders to acquire new and unique data from their environment.

The implication is that scanning systems should not be locked into continuous data on limited sectors of the environment. Management information systems tend to provide periodic information of a repetitive nature. Repetitive data may be valuable for perceiving stable elements in task sectors but may not be valuable for unstable or hard-to-measure sectors. Another question for future research is to determine whether designers of information systems should try to provide only certain types of data through formal channels, and the extent to which the best view of the environment comes from multiple information sources. Another research implication pertains to the debate about whether formal versus informal sources of information provide better input to the organizational strategic planning process.

The findings indicated that both personal and written sources are valued, and that both internal and external sources are used. Most important, the use of all sources increased as strategic uncertainty increased, suggesting that multiple sources are the appropriate information system for corporate leaders. Written sources provide systematic, periodic data that can show trends and provide other relevant facts whereas personal sources provide a view of intangible aspects of the environment that may be filtered out by written media. However, corporate leaders must re-examine the degree of importance they are attaching to each sources of scanning, because there is no one best source that could be universally applied to the analysis of environmental sectors. The choice of source depends on the degree of strategic uncertainty exerted by the particular environmental sector.

Acknowledgment

References

Aguilar, Francis Joseph, 1967. Scanning the Business Environment, New York: Macmillan.

Ansoff, H. Igor, 1975. 'Managing Strategic surprise by Response to Weak Signals', California Management Review, 18: 21-33.

Bourgeois, L.J., 1980, 'Strategy and Environment: A conceptual Integration', Academy of Management Review, 5: 25-39.

Brews P.J. and M.R. Hunt, 1999. 'Learning to Plan and Planning to Learn: Resolving the Planning School/Learning School Debate', Strategic Management J. 20: 889-913.

Daft Richard L. and Robert H Lengel, 1986. 'Organizational information requirements media richness and structural designs', Management Science, 32: 554-571.

Daft, Richard L and Karl E. Weick, 1984. 'Toward a model of organizations as interpreting systems', Academy of management Review, 9: 284-295

Duncan Robert B., 1972. 'Characteristics of Organizational Environments and Perceived Environmental Uncertainties', Administrative Science Quarterly, 17: 313-327.

Elenkov Detelin S., 1997. 'Strategic Uncertainty and Environmental scanning: The Case for Institutional Influences on Scanning Behavior', Strategic Management J. 18: 287-302.

Hambrick Donald C., 1981a. 'Environment, Strategy and power within top management teams', Administrative Science Quarterly, 26: 253-275.

Hambrick Donald C., 1983. 'Environmental Scanning and Organizational Strategy', Strategic Management J. 3: 159-147.

Hambrick Donald C., 1981b. 'Specialization of Environmental Scanning Activities among Upper Level Executives', J. Management Studies, 18: 299-320.

Lindsay William M and Leslie W. Rue, 1980. 'Impact of the Organization environment On the Long Range Planning Process: A contingency View', Academy of Management J. 23: 385-404.

Mathews C.H. and G. Scott Susanne, 1995. 'Uncertainty and Planning Small and Entrepreneurial Firms: An Empirical Assessment, J. Small Business Management, 34-52.

Mintzberg H., 1994. The Rise and fall of Strategic Planning, London, Prentice Hall Int. (UK) Limited.

Pearce, J., E. Freeman and R. Robinson, 1987. 'The Tenuous Link between formal strategic planning and financial performance', Academy of Management Review, 12: 658-675.

Rhyne, Lawrence C., 1985. 'the relationship of information usage characteristics to planning system sophistication: an Empirical Examination', Strategic Management J. 6: 319-337.

Sawyerr, O.O., 1993. 'Environmental Uncertainty and Environmental activities of Nigerian Manufacturing executives: A comparative Analysis' Strategic Management J. 14: 287-299.

Smeltzer Larry R., Gail R Fann, and V. Neal Nikolaisen, 1988. 'Environmental Scanning Practices in Small Business,' J. Small Business Management, 26 : 55-62.

Tan Justine J. and Robert J. Litschert, 1994. 'Environment Strategy Relationship and Its Performance Implications: An Empirical Study of the Chinese Electronics Industry,' Strategic Management J. 15:1-20.

Thomas Philip S., 1980. 'Environmental Scanning-the state of the art,' Long Rang Planning, 13: 20-28.