

**ENVIRONMENTAL SCANNING AND EFFECTIVENESS IN
STRATEGIC PLANNING**

By

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for the Degree of Masters of Business Administration

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DEDICATION

With love and appreciated to...

*My family-
My beloved father: Encik Che Ishak Mohd Shuib,
My beloved mother : Puan Sauwana Awang,
all my family members....*

And

My supportive supervisor: Professor Mohamed Sulaiman

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ABSTRAK

Tinjauan Persekitaran didefinisikan sebagai satu sistem pengumpulan dan pemantauan maklumat sistematik yang menerangkan perubahan di dalam persekitaran bagi mengenalpasti dan meneroka setiap pembangunan, citarasa dan peristiwa di dalam politik, ekonomi, sosial dan teknologi yang dapat mempengaruhi objektif yang strategik dan taktikal di dalam sesebuah organisasi. Keberkesanan pengurusan yang strategik adalah berkait secara langsung terhadap keupayaan peninjauan persekitaran. Memandangkan tinjauan persekitaran adalah begitu penting bagi sesebuah firma, maka kajian yang dijalankan ini direka untuk menentukan tahap peninjauan maklumat dan sejauhmana penggunaan maklumat daripada aktiviti peninjauan persekitaran itu menentukan sama ada keberkesanan perancangan strategik, kadar peningkatan jumlah jualan dan kejituan sesuatu ramalan mengenai masa hadapan. Ia juga menguji kesan penyederhanaan yang disebabkan oleh saiz sesebuah firma. Firma-firma yang terlibat di dalam kajian ini adalah terdiri daripada Firma Kecil dan Sederhana (IKS) yang terletak di Perlis, Kedah, Pulau Pinang dan Perak. Syarikat ini mempunyai bilangan pekerja sepenuh masa di antara 10 hingga 150 orang pekerja sahaja. Hasil kajian menunjukkan tahap kekerapan maklumat yang ditinjau daripada pelbagai sumber dapat menolong sesebuah firma mencapai perancangan strategik yang telah ditetapkan. Tambahan pula, penggunaan maklumat ini dipercayai mempunyai hubungan yang positif dengan keberkesanan perancangan yang strategik. Faktor saiz sebagai penyederhanaan adalah tidak signifikan.

ABSTRACT

Environmental Scanning is defined as the systematic collection and monitoring of information that describes changes in the environment in order to identify and assess emerging developments in political, social and technological trends, and events that may affect the strategic and tactical objectives of an organization. The effectiveness of strategic planning is directly related to the capacity for the environment scanning. Accurate analysis provides the best framework for maximizing opportunities and allocating resources for the anticipated future. Since the environmental scanning is crucial for the firm, this research is designed to determine the frequency of information scanned and the extent of usage of the information derived from environmental scanning and whether these are related to performance of the firm in terms of the planning effectiveness, sales growth rate and the accuracy of forecasting about the future. It will also test the moderating effect of organization size. The selected firms in this research are SME firms located in Perlis, Kedah, Penang and Perak with the number of full time employees between 10 to 150 people. The results showed that the frequency of information scanned from certain sources helped the firm to achieve their strategic plan. On top of that the usage of these information also proved to have positive relationship with the effectiveness of strategic planning. The effect of size as a moderator is found to be not significant.

Chapter 1

INTRODUCTION

1.1 Introduction/ Background

Strategic Management can be defined as the art and science of formulating, implementing and evaluating cross-functional decisions that enable an organization to achieve its objective.(David,1999). Strategic management focuses on integrating the functions of management, marketing, finance/accounting, production/operation, research and development and computer information systems to achieve organizational success.

Basically, the strategic management process, is the full set of commitments, and actions required for a firm to achieve strategic competitiveness and earn above-average returns. Therefore, all the relevant strategic inputs from analyses of the internal and external environment, are necessary for effective strategy formulation and strategy implementation.

Strategy formulation includes developing a business mission, identifying an organization's external opportunities and threats, determining internal strengths and weaknesses, establishing long-term objectives, generating alternative strategies and choosing particular strategies to pursue (Hitt,2001). The strategy implementation process includes executing the chosen strategy efficiently and effectively and the strategy evaluation stage includes evaluating performance and initiating corrective adjustments in vision, long-term direction, objectives, strategy, strategy implementation in light of actual experience, changing conditions, new ideas and new opportunities.

Therefore, strategy formulation is crucial in determining the success of the strategy implementation and strategy evaluation. This research is only focused on one aspect of the strategy formulation stage, i.e environmental scanning.

This strategy formulation requires information either from external, internal or both sources. The information which comes from the external environment is used for organization's decision making in relating the organization to the environment. The external information sources are from economic changes, political changes, technological changes and social changes which weigh heavily in strategic management decision making. The quality of such decisions depend on the quality of information received and utilized. Information is obtained through environmental scanning.

Environmental scanning is defined as the process of monitoring the external environment and collecting information of strategic importance for use in making organizational decision. (Bonis, 1983).

1.2 Problem Statement

Strategic management proposes that organizations have formal strategic planning. In order to have strategic plans, an organization has to be aware of the external environment, so that its plans are in systematic alignment with the external environment. This requires environmental scanning.

This research is to determine the extent to which Malaysian SMEs conduct environmental scanning, the extent of utilization of scanned information and their effects on planning effectiveness.

1.3 Research Objectives

Even though the importance of environmental scanning is well-recognized in strategic management literature empirical studies into it, is rather scanty especially in developing countries. The principal objective of this research is to determine the extent to which Malaysian firms practice environmental scanning and whether environmental scanning leads to effective strategic planning.

Therefore, this study will attempt to achieve the following:

- (1) To determine the extent to which firms in Malaysia conduct environmental scanning
- (2) To determine the extent to which they use scanned information for strategic planning.
- (3) To determine the extent the use scanned information relate to perceived effectiveness of strategic planning
- (4) To determine whether organization size moderates the relationships between the extent of environmental scanning and its use and planning effectiveness.

1.4 Research Questions:

This research will attempt to answer the following research questions:

- (a) Do Malaysian firms practice environmental scanning?
- (b) How do they scan the environment?
- (c) To what extent do they use the scanned information for strategic planning?
- (d) What is the linkage of environmental scanning in the process of planning to strategic planning effectiveness?
- (e) Does the extent of usage of information relate to planning effectiveness?

(f) Does the organization size of the firm do influence or moderate the relationship between environmental scanning and planning effectiveness?

1.5 Definition of Terms

Important key terms used in this research are defined as in table 1.1

Table 1.1
Definition of Terms

<i>Terms</i>	<i>Definitions</i>
Environment	As the relevant physical and social factors outside the boundary of an organization that are taken into consideration during the organizational decision making. (Duncan,1972)
Scanning	Is the means through which top managers perceive external events and trends? (Hambrick, 1982: Culnan, 1983)
Strategic planning	The process of determining vision, mission, goals, objectives, strategies, implementation and control mechanism to achieve organizational goals.
Environmental Scanning	Is the acquisition and use of information about events, trends, and relationships in a organization's external environment, the knowledge of which would assist management in planning the organization's future course and action. (Aguilar,1967, Choo & Auster, 1993)
Scanning Frequency	Indicates the amount or frequency of information obtained about the environment (Hambrick, 1982)
Forecasting	Is an exercise by which the corporation projects a Scenario of the terrain that lies beyond its monitoring and scanning capacities. (Jane, 1984)
Small-Medium Enterprises (SME)	Firms having full time employees ranging from 10 to 150 people. (SMIDEC)

1.6 Significance Of the Study

The outcome of this research may add to the literature on strategic management in the area of environmental analysis. Practically, the findings of this research will help the Malaysian firms how to conduct environmental scanning. Moreover, it is also show to what extent Malaysian managers use information for their effective strategic planning

1.7 Organization of the Report

The remaining part of this paper is organized as follows: chapter two provides literature review of studies conducted on environmental scanning by previous researchers. Chapter three will cover theoretical framework and the development of the hypotheses and research methodology. Chapter four presents the results of data analysis and finally, chapter five provides the discussions, conclusions, implications, limitations and suggestions for future research.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the related literature used in this research on the environmental scanning which leads to the research framework of this study.

2.1.1 Theory On Strategic Planning

To cope with an uncertain external environment, organizations are planning strategically for any issues facing management. Strategic planning is meant respond to the felt needs of organizations and to move away from reactive stance. (Sherry, 1993) Through environmental surveillance, involving scanning, monitoring and forecasting activities, organizations are able to keep abreast of changes in the environment that necessitate new policies or services or adjustments in present strategies and tactics.

2.1.2 Models of Organization Scanning

Daft and Weick (1984) and Weick and Daft (1983) built on Aguilar's work, developed a general model of organizational scanning based on two dimensions, analyzability and intrusiveness.

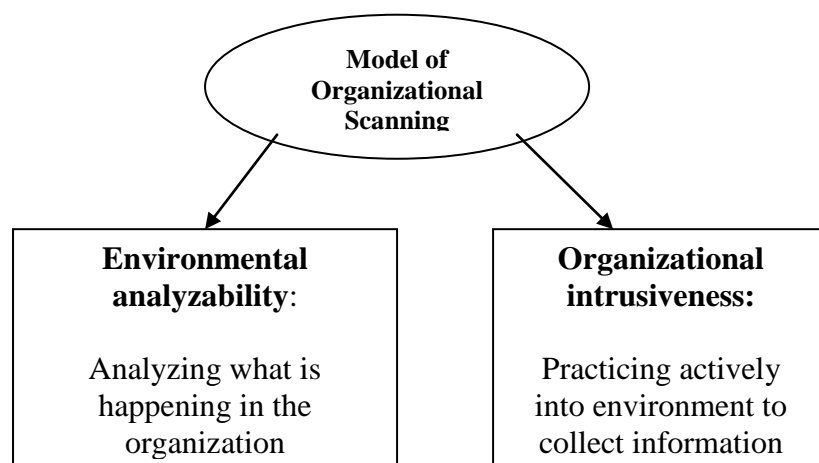


Figure 2.1. The Model of Organizational Scanning
Source: Daft,1984

2.1.3 Environmental Scanning Is The Means Through Which Top Managers Perceive External Events And Trends

Senior managers learn about the environment through environmental scanning. It is the means through which top managers perceive external events and trends (Hambrick, (1982). Scanning represents a difficult organizational problem because the environment is vast and complex and the managers experience bounded rationality. They attempt to comprehensively understand the environment for planning and decision making. (Cyert & March, 1963). Environmental scanning is an important function conducted by the top management in the organization. It is an activity which progressive organizations cannot dispense with.

2.1.4 The Nature Of An External Audit

According to David, (1999), the external forces can be divided into five broad categories: (1) economic forces, (2) social, cultural, demographic and environmental forces, (3) political, government and legal forces, (4) technological forces, and (5) competitive forces. The relationship among these forces and an organization are depicted in Figure 2.2. The external trends and events significantly effect all products, services, markets and eventually all organizations in the world. What is produced by the firm is determined by the forces external to it, such as political, economic, social, technological and competitive forces and of course demands of customers.

Environmental scanning is very important to all organizations because it is the input to decisions and planning activities in the firm. Thus modern organizations are expected to conduct environmental scanning.

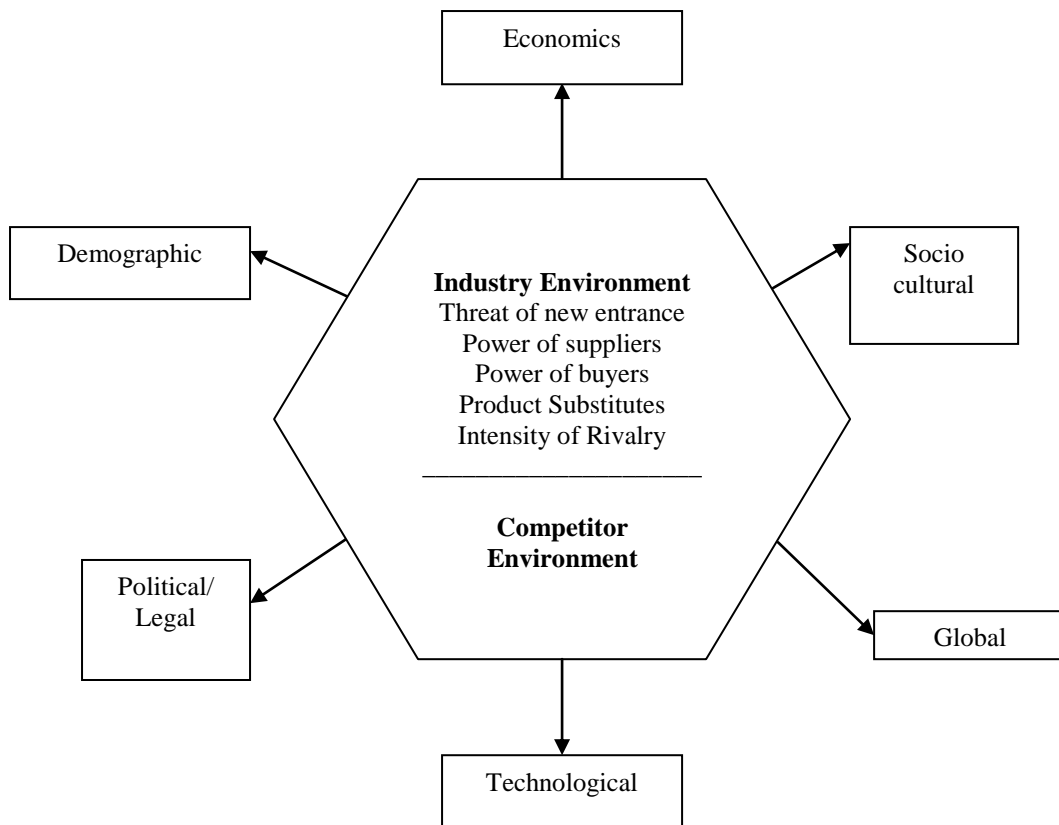


Figure 2.2: The External Environment
 Source: Hitt, Ireland & Hoskisson,2001

The process of strategic management is depicted in Figure 2.3 as proposed by David, (1999). Figure 2.3 shows prominently the role of external environmental audit in strategic planning and management. External environmental scanning is a requirement for establishing objectives and strategies.

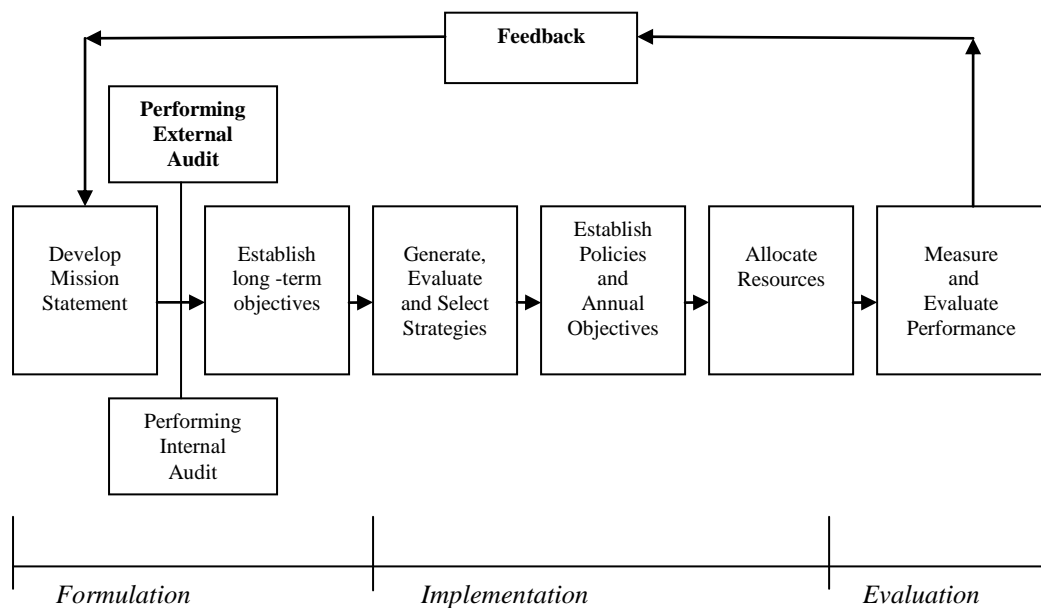


Figure 2.3. A Comprehensive Strategic-Management Model
 Source: David,1999

2.1.5 Relationship Between Key External Forces And An Organization

External forces have a close relationship with internal forces in the organization, David (1993). The relationship can be shown with this figure 2.4. An organization gets its customers, employees, suppliers, distributors, creditors and competitors from the environment. From the analysis of the external environment the organization will be able to identify opportunities and threats. The earlier it can identify by there, the better it would be able to prepare appropriate response and take advantage of the situation. It may be viewed as a source of competitive advantage.

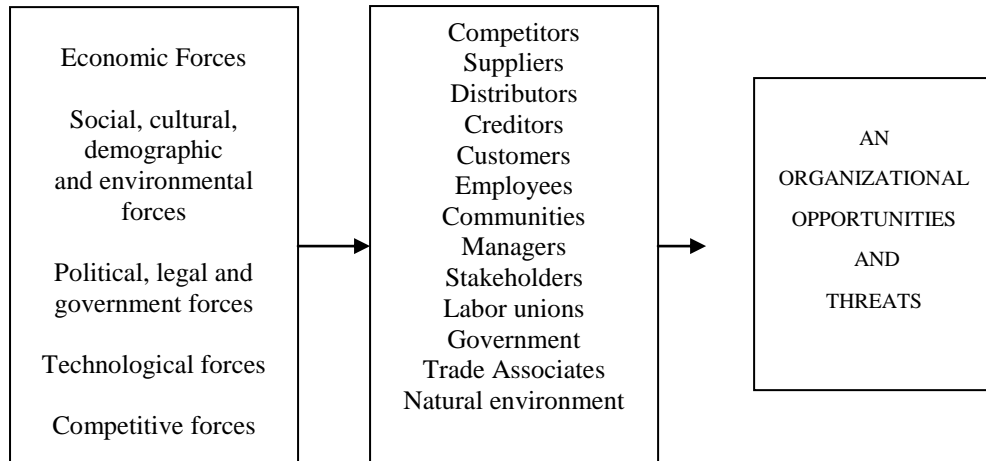


Figure 2.4. Relationship Between Key External Forces and an Organization
 Source: David,1993

2.1.6 Components Of The External Environmental Analysis

External environmental analysis consisted of four related activities: Scanning, Monitoring, Forecasting and Assessing, (Hitt,2003). The first component is very important to the organization. By identifying early signals of environmental changes and trends, an organization can use the information for effective strategic planning. The components of environmental analysis can be tabulated in the table 2.5.

Table 2.5
 Components of the External Environmental Analysis

Components	Description
Scanning	Identifying the early signals of the environmental changes and trends
Monitoring	Detecting meaning through ongoing observations of environmental changes and trends
Forecasting	Developing projections of anticipated outcomes based on monitored changes and trends
Assessing	Determining the timing and importance of environmental changes and trends for firms' strategies and their management.

Source: David,1993

2.1.7 Sophistication Of Scanning Matrix Effort

Friedel (1993), describes the sophistication of scanning matrix effort into four categories: (a) the usual method of scanning, (b) the usual motivation for environmental scanning, (c) the usual data included in the scan and (d) the time frame for using scanned information. The results showed that the usual method used were 40.0% on the periodically updated information, 32.0% on structured system of data collection and 20.0% for the ad-hoc studies only. The motivation for scanning were 75.5% regarding the planning processes oriented, 21.0% regarding the decision and issues oriented and 4.0% on crisis-oriented. The data in the scan were 59.0% on prospective, 33.0% on current and 8.0% on retrospective. The last variable found that the time frame for using scan information, 86.0% used for their near-term plan between 1-5 years, followed by 7.0% for the long-term which is more than 5 years and only 7.0% for the immediate plan. These scanning matrixes can be seen in Figure 2.5

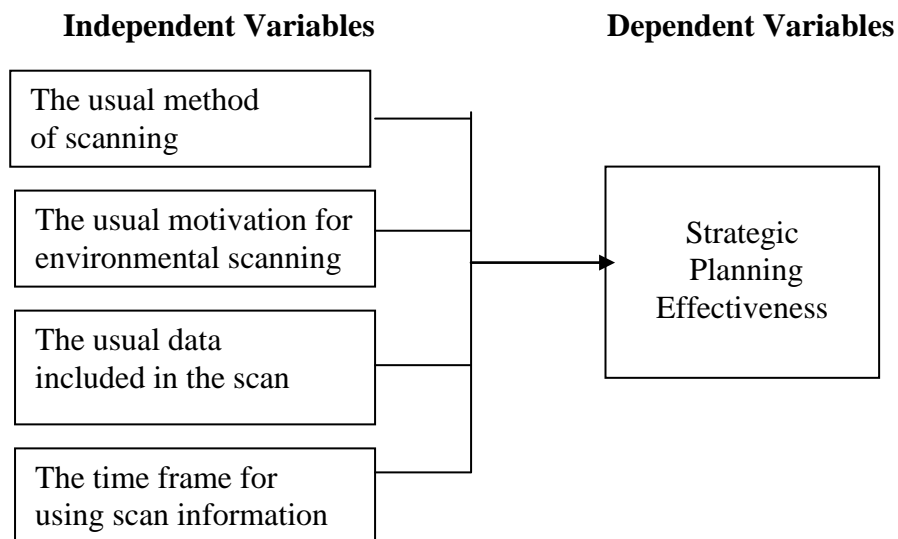


Figure 2.5. Sophistication of Scanning Matrix Effort
Source: Jain,1984

2.1.8 A Conceptual Framework for Environmental Scanning

The conceptual framework for environmental scanning consisted of several items. The items were situational dimensions, organizational strategy, managerial traits, information needs, information seeking and information use. (Choo,2001). Since the manager always perceives the environment to be uncertain, the scanning activities need to be done. The upper-level managers need to scan the environment more than lower-level managers in an any organization. The information needed from scanning include the information regarding customers, competitors, suppliers, and technology, social, political and economic conditions. For the source usage and preferences, information seeking is done widely by the managers with a wide range of sources. The managers prefer personal sources to formal, impersonal sources especially when seeking information related to the development on the market sectors,

In seeking the information, the scanning was done in a variety of modes depending on the organization size, dependence and perception of the environment, experience with scanning and planning and the industry where the organization belongs to. Finally, the information is increasingly being used to drive the strategic planning process. (Choo,2001)

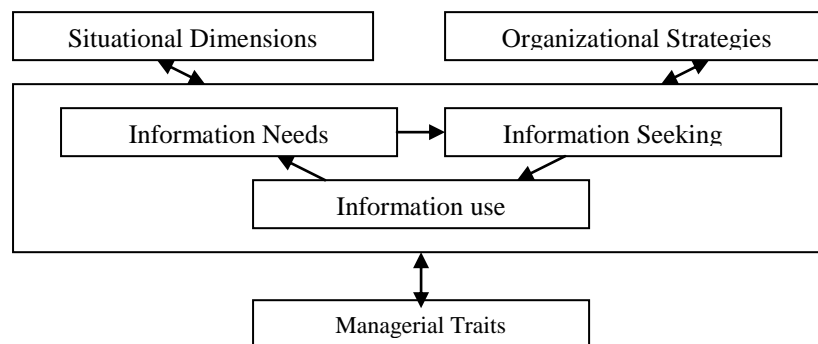


Figure 2.6. A Conceptual framework for Environmental Scanning

Source: Choo,2001

2.1.9 The Size of Organization

The research by Zita (1993), found that the changeability of the environment proved to be a determinant in the rejection of tight planning schemes, while the size of the company influences the adaptation of planning. The larger the company the more likely it is to engage in planning but other factors interfere with the tendency, such as the form of the organization and the management style or the dominant culture. (Zita, 1993).

2.2.0 Scanning frequency

Scanning frequency indicates the amount of information being obtained from the environment (Hambrick,1982). The higher the number of information being scanned by the organization, the better the performance of the organization will be.

2.2.1 Scanning Mode

The information scanned can be from internal or external or even from the both sources. This variable of scanning mode helps the manager to obtain information. The internal sources such as from direct human contact, face –to-face and also through telephone media. The written sources such as formal reports, newspaper, survey results and others. The information gathered from the written sources like newspaper, magazine, journals will help the managers in decision making. The external sources included telephone discussion among peers, trade magazines, newspapers, attendance at association meetings and others. (Aguilar,1967). Though there are many people within the organization who scan parts of the environment, it is the top managers who tend to use the information

gathered from both sources. However, this study focuses on scanning of external sources only.

2.2.2 Practices of Environmental Scanning: The Case of Algeria

Environmental scanning is the process of monitoring the external environment and collecting information of strategic importance for use in making organizational decisions. Even though the area of environmental scanning has received a lot of attention in the developed countries, there is a scarcity of knowledge about how managers of organizations in developing countries operate.

Roubah (2001) found that, scanning frequency was greater in the competitor and technological sectors of the environment than the political and economic environments. Second, there were preferences for external over internal sources of information and the use of personal over impersonal sources. Finally, results show lacking efficiency of environmental scanning activities especially in the information communication, information sharing, information storage and setting up of an organizational unit for scanning.

2.2 Summary

This chapter has reviewed the literature regarding the importance of environmental scanning in strategic planning. The literature points to the conclusion that the more scanning is done the more effective strategic planning will be. By extension scanned information has to be used before it can be effective. Thus, another major hypotheses is : the more the scanned information are utilized, the more effective strategic planning will be.

Chapter 3

METHODOLOGY

3.1 Introduction

This chapter describes the methods used to conduct the study. This included the research framework, hypothesis, variables, population/sample, questionnaire, data collection and technique for data analysis.

3.2 Research Design

This research is classified as Business Research because it involves systematic and objective process of gathering, recording and analyzing data for making business decisions. This research is designed as an essential tool for management to solve problems and to make decisions. Qualitative and quantitative information are needed for decision making. Managers use information about the environment which is obtained through scanning activities. This correlation study was intended to examine the relationship between the environmental scanning and the effectiveness of the strategic planning.

3.3 Type and the nature of the research

This research was conducted to determine the extent of environmental scanning practices in Small and Medium-Sized Enterprises (SME's) in Northern Malaysia and relate it to the effectiveness in their strategic planning. The linkage between environmental scanning to strategic planning and their decision making, methods used in the scanning activity, what drives the SMEs to do the environmental

scanning, the data collected in the scan and finally the extent of using the information taken from scanning activities will be examined in this study.

3.4 The Theoretical Framework

The aim of this study is to determine the frequency of information scanned in the firm from various sources such as information on political changes, economic changes, technological changes, social changes, government policies, competitors, suppliers, customers and information regarding the labor. Besides that it is to determine to what extent these information scanned have been used in the firm in their planning processes.

The independent variables are divided into two categories; the frequency of information scanned by the firm from various sources and the extent of information used from various sources in the planning process. The dependent variables are planning effectiveness. The relationships between scanning and information usage and planning effectiveness are moderated by the moderating variable, organization size. Organization size is represented by the number of employees.

The general relationship between the dependent variables and the independent variables is shown as in Figure 3.1.

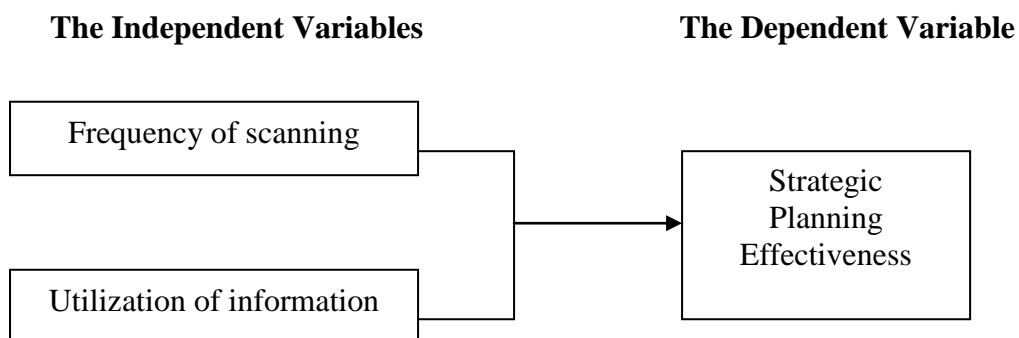


Figure 3.1 The General Theoretical Framework.

The theoretical framework presents the interrelationship among the variables that are relevant to the phenomenon under study (Sekaran, 2000). This research attempts to investigate the relationship between the effectiveness of strategic planning and environmental scanning activities. The theoretical framework is useful to postulate or hypothesize and test certain relationships so as to improve the understanding of the dynamics of the situation (Sekaran, 2000).

Figure 3.2 shows the theoretical framework of this research. The Dependent Variables in this study are planning effectiveness. The Independent Variables are frequency of information scanned and the extent of usage of this information from the scanning activities. This relationship is expected to be moderated by the organizational size determined by the number of full time employees. It is to be expected that the bigger the firm, the more they will do scanning.

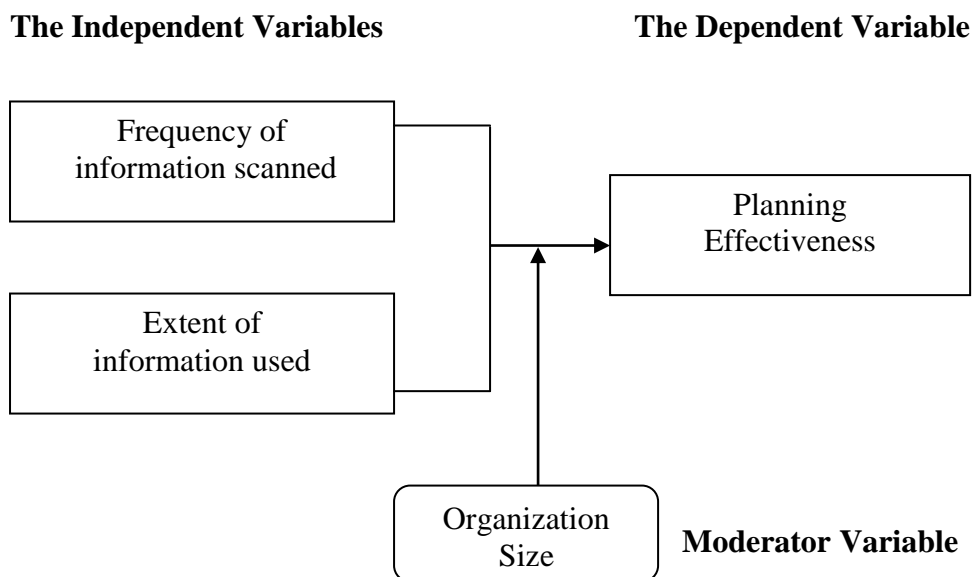


Figure 3.2 The Theoretical Framework

3.5 Development of the Hypotheses

According to Sekaran (2000), a hypotheses can be defined as a logically conjectured relationship between two or more variables expressed in the form of a testable statement. Relationships are conjectured on the basis of the network of associates established in the theoretical framework formulated for the research study. By testing the hypothesis and confirming the conjectured relationship, it is expected that solutions can be found to correct the problem encountered.

Hence in order to meet the research objectives, three hypotheses will be postulated for testing.

H1: The higher the frequency of scanning environment, the more effective will be the strategic planning of the firm.

H2: The greater the extent of usage of environmental scanning information, the greater will be the effectiveness of strategic planning of the firm.

H 3 : Organizational size moderates the relationship between scanning frequency and usage of information and the strategic planning effectiveness of the firm.

3.6 Unit of analysis

The unit of analysis in this research is the SME company which is represented by an individual who knew about the company. He or she should be among the top people in the company. The respondents should be from the top positions ranging from Managing Director, General Manager, or at Middle Management Position such as Sales Manager, Marketing Manager, Human Resources Manager and Accounts Manager in their respective firms. This research examines the environmental scanning practices of SMEs in Northern Region such as Perlis, Kedah, Pulau Pinang and Perak.

3.7 Population of the research

The population in this research includes all SMEs in the Northern Region, i.e Perlis, Kedah, Penang and Perak. Based on the Malaysian Federation of Manufacturers Directory (FMM), the total population of SMEs (who are FMM members) in Northern Region is 249 firms. This research is confined to FMM members only. All the firms in the Directory were selected to be approached.

This research investigated 249 SMEs firms from various industries, such as iron and steel industry, plastic and glass manufacturing, electronics and telecommunications, food industry, building materials, chemistry, pharmacy and healthcare, public organizations and information providers, plantation, construction and consumer products and others. Table 3.1 shows the distribution of firms in the four states.

Table 3.1
Target Region Population

Target Region of Population	Number of Firms Selected
Perlis	2
Kedah	33
Penang	123
Perak	91
	249

3.8 Sample.

The total number of respondents received was 132 . But some do not fall within the SME classification of 10 –150 full time employees. Twenty eight firms (respondents) report that they have 151-250 employees. Thus, this group is deleted from the data. This gives a response rate of 26.92%. The profile of sample is as in table 3.2 below. Most of the sample belong to the manufacturing industry. Only nine firms are in the plantation, construction and service industries.

Table 3.2.
Profile of Sample

Types of Industry	Numbers of sample
Manufacturing industrial goods	52
Consumer product	30
Electronic and telecommunication	13
Building materials	10
Food industry	10
Chemistry, pharmacy and healthcare	8
Plantation	5
Construction	2
Services Industries	2
	132

3.9 Questionnaire

The questionnaire was designed according to the variables researched. Overall there were four parts in the questionnaire. The structure of the questionnaire as below:

Section A: General Information (Questionnaire no: 1 – 5)

This section was developed to obtain the background of the respondent. The information regarding the demographics of the respondent is important to indicate the validity of the answers. The general information portraits to position in the company, age, gender, highest level of education and the duration of service in present company. This section was adopted from *Fenwick and Strombom (1998)*.

Section B: Company Information. (Question no: 1 – 8)

This section is regarding the company information. The information such as the age of the firm, number of full time employees, types of industry, average sales revenue, also regarding the planning like short-term, medium-term and long-term plan and finally the planning horizon.

Section C: Environmental Scanning Activities (Question no: 1 – 15)

Section C was designed to collect information regarding the information scanning practices in the organization. This section especially consists of information regarding to the Independent Variables of scanning frequency, sources of information, motivations for scanning and usage of scanned information.

Section D: Dependent Variables (Question no: 1 – 8)

This section was developed to obtain data on the Dependent Variables. The information needed is regarding the effectiveness of strategic planning, accuracy of forecasting and achievement of the firm's objectives in terms of return on sales and growth rate.

4.0 Data Collection

It was a challenge to obtain an acceptable response rate through mail. Therefore, in this research, it was conducted by distributing the Questionnaire through internet, fax, friends' help, direct contact, and visits and through the mail. The questionnaires were sent to the respective firms. The reminders were sent to them to remind them to respond after one week. In order to ensure a maximum numbers of responses, a lot of phone calls were made in order to confirm the receipt of fax, e-mails and to solicit potential respondents for their co-operation. For the Kedah and Penang firms, the method used was a combination of sending an e-mail, friend's help and personal visits. For Perak respondents mail was used. The data was collected in January 2004.

4.1 Data Analysis Technique

The process of data analysis began after the data have been collected. This research involved several stages in analyzing the data by using the Quantitative Approach. The Statistical Package for Social Science (SPSS) version 11.5 for Windows was used as a tool for data analysis. Systematic data analysis flow method outlined by Sekaran (2000) was adopted in preparing the data for analysis and recording of variables. The statistical techniques used are as follows:

4.1.1 Descriptive Statistics

Descriptive statistics that were frequency distributions were used to analyze the information about the respondents (all questions in Section A), the information about the company (all questions in Section B) and information about the scanning activities (question from Section C except for questions no. 6 and 8).

4.1.2 Goodness of Measures: Factor Analysis

Questions from section C regarding the information scanning were analyzed by using the Factor and Reliability Analysis. The factor analysis was used to define the frequency of various information scan in the firm by finding the interrelationship among these variables.

The factor analysis was initially performed to establish the goodness of measure for the scale used in this research. The factor analysis is used to group the independent variables into several components. Based on these components, the variables were grouped together in terms of different component groups in testing the relationship with the dependent variables. The higher the result analyzed by this factor analysis, the better chance of being considered as independent and dependent variables. This result can be seen from Rotated Component Matrix. The items were subjected to the principal component factor analysis using Varimax.

Assumptions underlying the factor analysis were verified by examining the Kaiser-Meyer-Olkin (KMO), Bartlett's test of sphericity and anti-image correlation. It is assumed that the minimum acceptable value for Kaiser-Meyer-Olkin (KMO) is set at 0.6 and Bartlett test of sphericity should be significant (Hair, Anderson, Tatham, & Black, 1998). The measure for anti-image correlation was acceptable with the diagonal value of measure of sampling adequacy (MSA) for each item is set at 0.5 and above (Hair et al., 1998). Once this was performed, the factors, which had eigenvalue of equal to more than 1.00, were selected (Hair et al., 1998). The item's loadings should be at least 0.50 on one factor and less than 0.35 on another factor (Igbaria, Livari, & Maragahh, 1995). Once all the factors were extracted, the items were regrouped and renamed accordingly. (Beng, 2003)

4.1.3 Goodness of Measures: Reliability Analyses

The reliability analysis was computed after performing the factor analysis. According to Sekaran (2000), the reliability of a measure is established by testing for both consistency and stability. In other words, the reliability of the scale is a clear indicator of the quality of the instruments used and whether the scales created are correctly designed. The Cronbach's alpha is a reliability coefficient in which its value will reflect the reliability of the instruments (Sekaran, 2000). Any item that was not significant was deleted in order to achieve the highest reliability for the measurement. The minimum acceptable reliability coefficient is at 0.7 (Nunnally, 1978, as cited in Beng, 2003)

4.1.4 The Pearson Correlation Analysis

This data analysis technique was used to show the existence of the correlation between independent variables and dependent variables.

4.1.5 The Hierarchical Multiple Regression Analysis

The hierarchical regression was employed to test the hypotheses of the research. The four step hierarchical regressions were used to test the hypotheses. In step 1, all these demographic variables were entered. Then in step 2, all the independent variables were entered. Followed by added in the moderating variable as in step 3 to test whether they had an independent effect on the dependent variables. Finally in step 4, all the interaction terms were entered. The significance of each block of variables will be based on whether there is any significance of R Square Change in each step. The change in R Square Change which represents the additional variance in