

# Manager's Risk Propensity and Strategic Decision-making Processes

Mahmood Nooraie Ph.D

Islamic Azad University, Abhar Branch, Department of Management

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## ABSTRACT

The purpose of this paper is to determine the relationships between manager's risk propensity and strategic decision-making processes, and also to identify the impact of strategic decision-making processes on decision process outputs. This study is a field study of real strategic decision-making process rather than an artificial setting. The research was conducted in food industry involving small, medium, and large size private manufacturing firms. Correlation analysis indicate that manager's risk propensity is significantly and negatively correlated with the extent of rationality in the decision-making process, and is significantly and positively correlated with the extent of decentralization and politicization of the decision-making processes. Based on the results of regression analysis the extent of rationality and also decentralization in the decision-making process positively and significantly influence the quality of the decision-making process output while the extent of politicization in the decision-making process negatively and significantly affects the quality of the process. The findings indicate that However, the type of processes used in decision-making affect the quality of the decision process outputs, but managers 'risk propensity plays very important roles in strategic decisions and really matters.

**KEYWORDS:** Strategic decisions, Risk taking, decision process, rationality, decentralization and politicization of the decision-making.

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## 1. INTRODUCTION

Decision making, as one of the most important functions of management may be considered both an art and a science. Decision making process is conducted by managers in three different ways. Intuitively, based on judgment, or using a more detailed problem-solving process. Making choices based on judgment is primarily an art learned through experience. And using problem-solving methods to arrive at decisions is an analytic process that is scientific in nature and requires considerable skill and knowledge. (Carlisle, 1979)

Decision-making is one of the most important functions of managers in any kind of organization. But it is a complex process that must be understood completely before it can be practiced effectively. Those responsible for strategic decision-making face a task of extreme complexity and ambiguity. Because strategic decision are affected by contextual factors e.g. Yu et al, (2012) identified eight factors: factual approach to decision making, use of quality tools, customer focus, leadership, involvement of people, process approach, mutually beneficial supplier partnership and internal results that effect the quality of the decision-making. And Hess & Bacigalupo, (2011) indicated that the practical application of emotional intelligence skills can enhance individual and group decisions and outcomes. And even Dinur, (2011) explored the concept of "common sense" and to distinguish it from uncommon sense as it applies to managerial decision-making under conditions of task uncertainty. For these reasons, over the past decades, numerous studies have been conducted to the construction of models to aid managers and executives in making better decisions concerning the complex and highly uncertain business environment. In spite of much work that has been carried out in the area of strategic decision-making especially during the 1990's, we still know little about strategic decision-making process and factors affecting it.

Research in strategic decision-making and factors influencing the process have received relatively less attention (Rajagopalan et al., 1993) and those available have produced contradictory results. Papadakis et al, (1998) concluded that despite the literature, our knowledge of strategic decision-making process and factors' affecting the process is really limited. Thus, research on strategic decision-making process and factors affecting the process remain of paramount importance in the field of organizational theories and management (Astley, et al., 1982). And much more empirical research is required before any definitive conclusion can be reached (Rajagopalan et al., 1993).

These kinds of arguments indicate that the literature still lacks a single acceptable theory to describe how decision process flows through the organizational structure (Kriger & Barnes, 1992) and also shows a lack of conceptual consensus, In particular the characteristics of the process used, and its impact on the quality of the decisions. This can introduce a problem for managers already nervous in unpredictable environment to define the

right process in their decision-making (Archer, 1980). Deriving from the above or similar discussions in my literature review the research questions are:

RQ1. Is there any relationship between manager's risk propensity and strategic decision-making processes?

RQ2. To what extent do strategic decision-making processes influence strategic decision process outputs?

Based on the questions and research problem I have developed the following objective

RO1. To identify the relationships between manager's risk propensity and strategic decision-making processes, and RO2. To identify the effect of the strategic decision-making processes on decision process outputs.

#### 4- LITERATURE REVIEW

In the Webster dictionary a decision is described as a conclusion arrived at after careful consideration. By a decision we transfer from internal to external action (Lapin, 1994). Decision is defined as a moment in an ongoing process of evaluating alternatives related to a goal, at which the expectation of decision maker with regard to a particular course of action impels him to make a selection (Harrison, 1999). Decision is a conscious choice to behave or to think in a particular way in a special situation (Duncan, 1973). Decision-making is often referred to as the heart of the management process (Mann, 1976).

Many literature viewed decision-making as the process of choosing among alternative courses of action for the purpose of solving a problem or attaining better situation regarding the opportunities that exist (e.g. Bedeian, 1986; Plunkett & Attner, 1994; Harrison, 1999). Harrison (1999) suggested that decision-making is a dynamic function rather than a static action. It is a sequential process. However, managers in making a decision may apply different processes.

Brooks, (2011) suggested that Decisions are avoided when people are asked to justify them, when options are similar in attractiveness, and when there are a large number of options to consider. Several varieties of these processes have been recognized and suggested by many researchers (e.g. Simon, 1965; Mintzberg et al., 1976; Thompson & Strickland, 2009). And which is best, depends on the nature of the problem, the availability of resources, the cost, decision-maker characteristics, time pressure and others factors (Donnelly et al., 1998). Decision-making process has emerged as one of the most active areas of current management researches. Among different type of decision-making process strategic decisions are very important decisions and they play very vital roles in any organization, they have an impact on many aspects and functions of the organization. Decision-making on strategic issues generally is treated as strategic decisions and therefore deserves strategic management consideration.

The first step in the evolution of strategic management was taken in the late 1950's, when firms developed a systematic approach to deciding where and how the firm will do its future business (Ansoff, 1984). Strategy management refers to the managerial process of forming a strategic vision, setting objectives, crafting a strategy and implementing and executing strategy (Thompson & Strickland, 2003). According to Mintzberg et al. (1976), "strategic" simply means important, in terms of the actions taken, the resources committed, or the precedents set. To Drucker, strategy is a purposeful action while to Mintzberg it is a **p**lan, a **p**loy, a **p**attern, a **p**osition, and a **p**erspective (five Ps).

According to Schwenk (1988) strategic decisions are ill structured, non-routine, and important to the firm, in which top management usually plays a central role. Strategic decision-making is incremental and interdependent, shaped by a variety of contextual influences arising from past events, present circumstances, and perspectives of the future (March, 1981; Das, 1986; Neustadt & May, 1986).

This study will focus on strategic decision-making processes and for the purposes of this study, strategic decisions are ones that involve strategic issues. Strategic issues can be defined as developments, events and trends having the potential to impact an organizational strategy (Ansoff, 1980). These issues can represent problems or opportunities to decision makers. They are important because they affect an organization's ability to achieve its goals or objectives (Dutton & Duncan, 1987).

Different theoretical models of strategic decision-making processes, which reflect different conceptions of organization, have been suggested by various literatures (e.g. Hart, 1992; Thompson & Strickland, 2003; Hacklin, & Wallnöfer, 2012; Schiavone, 2011). Workman, (2012) develop and validate a model of how cognitive biases and framing effects influence managerial decision-making about strategic initiatives. These theories definitely differ substantially in terms of their underlying assumption(s) about the decision context and the characteristics of decision-making processes. Walk, (2011) introduced a new method for the evaluation and selection (filtering) of alternatives in a complex multi-criteria decision environment. This study focused on three different models of strategic decision-making namely "rational", "decentralization", and "political" behavioral models

Several researches considered on the relationship between risk taking and strategic decision-making processes (e.g. Gupta, 1984; Barid & Thomas, 1985). Wally and Baum (1994) found that decision-maker high tolerance for risk and a strong propensity to act promote completion of the strategic decision-making process, this support

Eisenhardt's (1989) proposition that fast strategic decision-making requires executives to possess the confidence to act. Executive's risk propensities were not found to be a significant moderator between objective criteria and strategic decision (Hitt & Tyler, 1991). Jansen et al. (2011) found that evaluative judgments (risk acceptance and confidence) explain the negative effects of social capital on decision effectiveness. According to Papadakis et al. (1998) there is a negative relationship between executive's risk propensity and rule formalization

In sum, the results of my literature review indicate that:

- Despite the literature, our knowledge of strategic decision-making process is limited.
- The impact of manager's risk propensity and strategic decision-making processes on decision process outputs is quite unclear.
- Research in this area has shown progress; however much more empirical research is required before any definitive conclusions can be reached.

*Theoretical Framework*

Based on my literature review and research questions I have developed a framework that is presented in Fig.1. The model is descriptive in nature and focuses on the relationship between managers' risk propensity and strategic decision-making processes and also the influences of strategic decision-making processes on quality of the decision process output. Two guiding assumptions derived from literature serve as the theoretical basis for my model (1) contextual factors influence the choice of process, and (2) the process choice influences output quality.

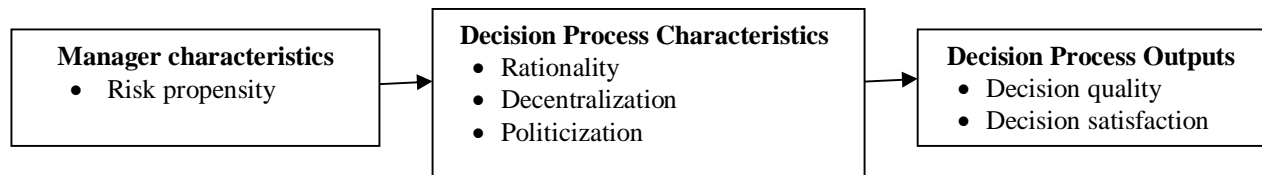


Fig.1. Theoretical Framework (Is based on guiding assumptions derived from literature)

The choice to focus on manager's risk propensity is based on the following criteria:

- Manger's risk propensity had received limited attention in past studies,
- manager's risk propensity had produced contradictory results in previous research, and
- I believed manager's risk propensity would have the most explanatory power in decision-making.

Dimensions of the strategic decision-making processes were selected as those:

- Which are more frequently cited in literature,
- Which have clearly played central roles in organization decision-making, and
- Which are distinct and are related to the most important and popular models (classical, organizational, and political).

I selected quality of the decision-making process output because the literature provides conceptual basis for consideration while I am not aware of any studies that focus on decision process output. According to Trull (1966) the final decision outcomes is a function of decision process quality and implementation. Steiner (1972) indicated that, the final decision outcomes also depends upon the quality of the process in which the decision is made, and since good decision can lead to bad outcomes and vice versa. A strategic decision cannot infallibly be graded either high or low quality in terms of its final outcomes (Brown et al., 1974).

*Hypothesis Development*

The literature indicated that the top management team characteristics that make a decision would influence the nature of the process to be used. Wally and Baum (1994) found that high tolerance for risk and a strong propensity to act promote completion of the strategic decision-making process. This finding supports Eisenhardt (1989) who suggested that fast strategic decision-making requires executives to possess the confidence to act. I believe that a manager is less likely to go through the different steps of a rational decision-making process, if his propensity for risk taking is likely to be great. This can be attributed to the fact that managers with high propensity of risk taking are willing to decide in a faster way. Thus, the following hypothesis was developed.

- *H.1 There is a negative relationship between manager's risk propensity and the extent of rationality in the decision-making process.*

Even though Papakakis et al. (1998) suggested no relationship between manager's risk propensity and the degree of decentralization in the decision-making process I believe that managers with higher tolerance for risk are more willing to empower and delegate the decision-making responsibility. Thus, the following hypothesis is proposed.

- *H.2 There is a positive relationship between manager's risk propensity and the extent of decentralization in the decision-making process.*

According to Papadakis et al. (1998) manager's risk propensity is not related to the extent of politicization in the decision-making process I expect that managers who have high tolerance for risk are more likely to go through negotiations, coalition, and use of power in decision-making process. The premise that managers who have high tolerance for risk are less likely to go through rationality of the decision-making process leaves them with the alternative of either delegating or negotiating the decision process. Based on this I defined the following hypothesis.

- *H.3 There is a positive relationship between manager's risk propensity and the extent of politicization in the decision-making process.*

#### *Decision Process and Process Output*

I am not aware of any existing empirical study of strategic decision-making that focuses on quality of the decision process output and investigates how well the decision process was carried out. Most of the studies available have studied on one aspect of final decision outcomes namely organizational effectiveness or performance with contradictory finding (e.g. Fredrickson & Mitchell, 1984; Eisenhardt, 1989; Priem et al., 1995). Brown et al. (1974) indicated that a strategic decision cannot be graded either high or low quality decision based on its final outcomes. This is due to the fact that a good decision can lead to a bad outcome if, poorly implemented. Steiner (1972) believed that the decision outcome also depends upon the quality of the process in which the decision is made. Based on these arguments I believe that the decision outcomes may be investigated in two separate but reciprocal phases (1) decision-making phase and (2) implementing phase.

In decision-making phase the quality of the decision-making process output in terms of timeliness or speed of the decision-making, acceptability to interested units and people, and adaptiveness to change can be evaluated (Rajagopalan et al., 1993). This actually defines how well the decision process is carried out. Implementation phase determines how well the selected alternative (the decision) is accomplished, the decision goals are achieved, or problems are solved. The results of these two phases of investigations, which jointly determine the decision outcomes help to differentiate between the quality of the decision-making process and the quality of the implementation process. Thus, this study is concerned only with decision process output.

I believe that in a process in which the problem is well defined, various alternatives are generated, adequate information are used, alternatives are evaluated and the best possible alternative is selected, the output of the decision-making process lead to greater quality. According to Bourgeois and Eisenhardt, (1988) rational analysis improves the quality of the decision.

I also expect that decentralization in decision-making process or more delegation of stages of planning process to lower levels of management lead to higher quality of decision-making process output due to the greater diversity of ideas. Given that the extent of decentralization in strategic decision-making process generate more ideas, more discussions, more evaluations, and more information, more focus will be given to possible choices, which may leads to better selection that in fact provides higher level of decision-making quality. More importantly, greater decentralization in the decision process creates awareness and acceptance of the final decision.

At the same time managers who go through bargaining, coalition, and use of power in their decision making process are more likely to be concerned with individual or group interest rather than the decision process output. Thus, the use of politicization processes diminishes the quality of the decision-making process output. It is less likely that a choice based on individual interest (political assumption) will serve organizational goals (rational assumption). In other words assumptions underlying the political process of decision-making are inconsistent with those of the rational process (Dean & Sharfman. 1996; Lyles & Thomas. 1988). Based on these discussions I posit the following hypotheses for testing the quality of the decision process output.

*H.4 The extent of rationality in the decision-making process influences the quality of the decision process output.*

*H.5 The extent of decentralization in the decision-making process affects the quality of the decision process output.*

*H.6 The extent of politicization in the decision-making process influences the quality of the decision process output.*

## **5- METHODOLOGY**

### *Research Approach*

Several different approaches were analysis and compared in their ability to make the most efficient contribution towards satisfying the proposed research objectives. From this analysis of alternative research

approaches, a field survey seems to be the most appropriate methodological choice. This study is a field study of real strategic decision-making process rather than an artificial setting. Propensity for risk taking varies from individual to individual and therefore, making any aggregation (for organization or team level analysis) meaningless. For these reason, the unit of analysis is the individual level. Further, Hickson et al. (1986) have found empirically that individuals and firms use different process when making different types of decisions. This calls for an individual decision as the unit of analysis.

#### *Sampling Procedure*

The sample frame of this study was consisted of all 342, small, medium and large size private manufacturing firms which were located in central part of the country and were registered in Iran food manufacturing firm's directory. In order to ensure adequate response, a warm-up or introductory letter was sent to the firms in November 2011. This initial letter seeks to determine the specific strategic decision that has been made within the last 24 month and to identify the managers who were directly involved in the decision-making. The final sample involves 118 manufacturing firms, which agreed to participate in the survey. Since strategic decisions are usually made by top and senior middle management the subject I targeted are the Chief Executive Officers (CEOs) and three other members of the middle management team, thus making a target sample of 472 respondents. Subsequent to this introductory letter, a total of 472 questionnaires with cover letters were posted, including an appropriate instruction, key terms, and stamped, self-addressed return envelopes. Four weeks after the questionnaire was mailed, the first follow up letter was sent to those who had not yet responded. After another four weeks, the second and last follow up letter was distributed. Meanwhile most of the CEOs or their assistants were contacted either by mail or telephone to: (1) answer their questions, if any and (2) to emphasize that the data should refer strictly to strategic decisions. This multiple stage method of data collection was considered necessary in the interest of time and convenience of the respondent.

#### *Questionnaire Design*

Research tradition emphasizes the use of previously validated instruments whenever appropriate. In order to contribute to cumulative research findings accordingly, based upon a review of the literature, several items were designed specifically for this study, but the majority (88%) were adopted from past literature. All items in this study are rated on a 5-point Likert-like scale. Too few points and too many points may result in biases. Literature (e.g. Sekaran, 2000) indicates that a 5-point scale provided satisfactory results.

#### *Variables and Measures*

The questionnaire consists of items measuring the variables of primary interest, namely the independent and dependent variables. In order to operationalize the research variables the concept of each variable was broken into appropriate dimensions. These are then translated into observable and measurable elements so as to form an index of measurement of the concept. Following are research variable and measurement items:

*Risk propensity (X1)*: refers to the degree to which managers possess the confidence to act in risky situation. In order to measure this variable I adapted three items suggested by Eysenck and Wilson (1975), which refer to manager's willingness to accept risk. These items measure the preference for jobs involving risks and change, and enjoying risk taking (Alpha .8772).

*Rationality of the decision-making process (Y1)*: refers to the extent of analysis and integration in the decision-making process. This was measured in the same manner as in Frederickson (1984). It involves measuring the rationality at five different stages of decision-making, namely diagnosis, alternatives generation, alternatives evaluation, selection/choice and integration. The items were modified to suit the different stages of the decision-making. A total of 30 items were used to measure rationality of the decision-making process (Alpha .9780).

*Decentralization of the decision-making process (Y2)*: is the extent to which different levels of management are involved in strategic decision-making process. Using guideline of Grinyer et al. (1986) five items were designed. These items measured the extent to which top, middle, and operational management were involved in strategic decision-making process (Alpha .8776).

*Politicization of the Decision-making Process (Y3)*: refers to the extent in that coalition, negotiation, and power play in the decision-making process. As measured by Papadakis et al. (1998) I measured this variable by the extent to which coalitions, negotiations and power influenced the strategic decision-making process (Alpha .7805).

*Decision process output (Z)*: refers to outcome of decision-making process particularly the quality and satisfaction with the process. Quality of the decision process (Z1) refers to how well the different stages of strategic decision-making process were carried out, which was measured by five items adapted from Schilit & Paine (1987). The decision process satisfaction (Z2): refers to provision for implementation, contingency plan, and speed of decision. In order to measure these variables four items was designed (Alpha .8308). To test and eliminate ambiguous or biased items and to improve the format, both for ease of understanding and to facilitate analysis a pilot study was conducted (Sekaran, 2000). From the 30 questionnaires distributed between managers or professional a

total of 24 questionnaires were returned. A reliability analysis was conducted by computing Cronbach's reliability alpha, in reviewing the results of the pilot study, minor changes were made and the relevant suggestions from respondents were incorporated into the final questionnaire. The results of pilot study indicated that variables in the study had acceptable reliability with Cronbach's alpha ranging from .7805 to .9880

**6- Finding**

*Goodness of Measures*

One of the important steps in data analysis is to confirm whether or not the variables representing responses to questions are uniquely associated to the theoretical dimensions of the variables of interest. Using factor analysis we can determine that the theorized dimensions emerge and it will reveal if the items are indeed tapping the constructs of interest (Sekaran, 2000). In this study factor analysis was performed on the individual items contained in the questionnaire to understand whether they are related to one of the theoretical dimensions, and if the number of variables can be reduced to a smaller number. The results of factor analyses were consistent with theoretical dimensions. While the results of various tests in terms of appropriateness of data for factor analysis confirmed that all variables of the study meet the fundamental requirements for factor analysis. Results of factor analysis are presented in tables 1 to 6. Factor and reliability analysis were conducted based on the following assumptions (e.g. Hair et al., 1998; Sekaran, 2000).

- The cut-off points chosen for significant factor loading is  $\pm 0.50$ ,
- Eigenvalue of 1 or greater,
- Use of VARIMAX rotation method,
- Cronbach's alpha chosen for the purpose of this study is 0.70 or more, and

*Managers' risk Propensity (X1)*

The results of factor analysis are displayed in Tables 1 and 2. The sampling adequacy for all items exceeds 0.50, negating the need to exclude any item from the factor analysis. After Varimax rotation, the items fall neatly into one factor that captured about 71% of the variance in the data. The factor contains three items related to propensity to risk. This dimension is as theorized earlier and its respective reliability (Cronbach values) is 0.7882.

Table 1 Measure of Sampling Adequacy and Partial Correlation (Anti-Image) for Managers' risk propensity (X1)

	X1.1	X1.2	X1.3				
X1.1	<b>.734a</b>						
X1.2	-.492	<b>.774a</b>					
X1.3	-.172	-.515	<b>.791a</b>				
a. Measure of Sampling Adequacy							.743
Bartlett's test of Sphericity							415.164
Sig.							.000

a. Measure of sampling Adequacy (MSA)

Table 2 Factor and Reliability Analysis on Management's risk propensity

		Factor Loading	Reliability Cronbach alpha
X1	Risk propensity		
X1.2	Taking risk	<u>.811</u>	
X1.1	Prefer risky job	<u>.854</u>	
X1.3	Taking a chance	<u>.832</u>	
	Alpha for X1		.7882
	Eigenvalues	2.199	
	Percentage of common variance	27.493	
	Cumulative percent	71.824	

Variables loading significantly on factors with coefficient of at least 0.50

*Strategic Decision-Making Process (Y1, Y2, Y3)*

The results of factor analysis on the twelve items posited to measure the three dimensions are displayed in Tables 3 and 4. The measures of sampling adequacy exceed the minimum level of 0.50 for each item, validating the use of the factor analysis. The distribution of the factor loadings (after rotation) clearly shows the three hypothesized dimensions of rationality, decentralization, and politicization of the strategic decision-making process. Their eigenvalues are high and cumulatively they captured more than 81% of the variance in the data. Reliabilities (Cronbach's values) for these three factors are 0.9780, 0.8776, and 0.7805 respectively

Table 3 Measure of Sampling Adequacy and Partial Correlation (anti-image), for Strategic Decision-Making

	Y1.1	Y1.2	Y1.3	Y1.4	Y1.5	Y2.1	Y2.2	Y2.3	Y2.4	Y2.5	Y3.1	Y3.2	Y3.3
Y1.1	<b>.909a</b>												
Y1.2	-.409	<b>.850a</b>											
Y1.3	-.056	-.349	<b>.904a</b>										
Y1.4	-.271	-.168	-.170	<b>.896a</b>									
Y1.5	.038	-.176	-.356	-.431	<b>.893a</b>								
Y2.1	-.072	.346	-.044	-.176	-.025	<b>.842a</b>							
Y2.2	.061	-.066	.062	-.058	-.058	-.401	<b>.893a</b>						
Y2.3	.131	-.030	.082	-.064	.089	-.229	-.327	<b>.883a</b>					
Y2.4	-.028	-.028	.035	.056	-.117	.012	-.228	-.227	<b>.913a</b>				
Y2.5	-.097	-.040	-.051	-.094	.070	-.134	-.075	-.339	-.338	<b>.912</b>			
Y3.1	.065	-.040	-.115	.172	-.078	-.136	.032	-.062	-.017	.064	<b>.726a</b>		
Y3.2	.032	-.154	.171	-.015	-.095	-.047	-.016	.087	-.091	.013	-.495	<b>.765a</b>	
Y3.3	-.021	.157	-.041	-.132	.077	.221	-.026	-.064	.079	-.048	-.467	-.348	<b>.765a</b>
Measure of Sampling Adequacy											.869		
Bartlett's test of sphericity											1498.835		
Sig											.000		

a. Measure of sampling Adequacy (MSA)

Table 4 Factor and Reliability analysis on Strategic Decision-Making process

		Factor Loading			Reliability Cronbach alpha
		1	2	3	
Y1	<b>Factor 1 Rationality</b>				
Y1.2	Alternative generation	<u>.943</u>	.037	-.066	
Y1.3	Alternative evaluation	<u>.929</u>	.105	-.087	
Y1.5	Integration	<u>.914</u>	.173	-.080	
Y1.4	Choice	<u>.904</u>	.239	-.128	
Y1.1	Situation diagnosis	<u>.888</u>	.057	-.158	
	Alpha for Y1				<b>.9780</b>
Y2	<b>Factor 2 Decentralization</b>				
Y2.3	Decentralization in alt... evaluation	.105	<u>.834</u>	.039	
Y2.2	Decentralization in alt... generation	.102	<u>.920</u>	.018	
Y2.1	Decentralization in situation diagnosis	.024	<u>.894</u>	-.027	
Y2.4	Decentralization in choice	.138	<u>.882</u>	.039	
Y2.5	Decentralization in integration	.207	<u>.852</u>	-.026	
	Alpha for Y2				<b>.8776</b>
Y3	<b>Factor 3 Politicization</b>				
Y3.1	Formation of coalition	-.103	.079	<u>.927</u>	
Y3.2	Negotiation	-.123	.033	<u>.915</u>	
Y3.3	Use of power	-.140	-.071	<u>.904</u>	
	Alpha for Y3				<b>.7805</b>
	Eigenvalues	5.450	3.472	2.165	
	Percentage of common variance	41.927	26.705	16.654	
	Cumulative percent	41.927	68.631	81.285	

Variables loading significantly on factors with coefficient of at least 0.50

*Decision Process Quality (Z)*

Table 5 and Table 6 display the outcomes of factor analyses for the variable of interest. They indicate that data related to these dimensions are appropriate for factor analysis (MSA above 0.50). The results of factor analysis on the five items tapping decision process quality and four items measuring decision process satisfaction show one factor with factor loading ranging from 0.825 to 0.915. This factor captured more than 76% of the variance in the data. The items included in the extracted factor are originally derived from two theorized dimensions namely (1) quality of the decision process, and (2) decision process satisfaction. Since items with higher values of loadings have greater influence on the factor name (Hair et al., 1998) we renamed the new factor as: quality of the decision process outputs. Alpha for this factor is 0.8308.

Table 5 Measure of Sampling Adequacy and Partial Correlation (Anti-Image), for Decision Process Quality

	Z1.1	Z1.2	Z1.3	Z1.4	Z1.5	Z2.1	Z2.2	Z2.3	Z2.4
Z1.1	<b>.907a</b>								
Z1.2	-.465	<b>.921a</b>							
Z1.3	.176	-.378	<b>.941a</b>						
Z1.4	-.258	-.057	-.152	<b>.942a</b>					
Z1.5	.057	-.126	-.036	-.378	<b>.946a</b>				
Z2.1	-.195	-.087	-.228	-.083	-.083	<b>.954a</b>			
Z2.2	.133	.000	-.078	-.184	.026	-.303	<b>.928a</b>		
Z2.3	-.201	-.093	-.066	.043	-.266	.063	-.297	<b>.947a</b>	
Z2.4	-.061	.024	-.056	-.132	-.080	.012	-.305	-.146	<b>.963a</b>
Measure of Sampling Adequacy									.938
Bartlett's test of Sphericity									936.036
Sig.									.000

a. Measure of sampling Adequacy

Table 6 Factor and Reliability analysis on Decision Process Outputs (Z)

		Factor Loading	Reliability Cronbach alpha
		1	
Z1 & Z2	<b>Factor. 1.</b> quality of the decision process outputs		
Z1.4	The best choice	<u>.915</u>	
Z1.2	Possible alternatives generated	<u>.900</u>	
Z1.5	Integrated	<u>.878</u>	
Z2.3	Contingency plan	<u>.875</u>	
Z2.1	Best means to achieve goals	<u>.873</u>	
Z2.2	Provisions for implementation	<u>.870</u>	
Z1.3	Precisely evaluated	<u>.862</u>	
Z1.1	Problem well defined	<u>.852</u>	
Z2.4	Just on time	<u>.825</u>	
	<b>Alpha for Z (Z1 &amp; Z2)</b>		.8308
	Eigenvalues	6.855	
	Percentage of common variance	76.164	
	Cumulative percent	76.164	

Variables loading significantly on factors with coefficient of at least 0.50

The overall results of factor and reliability analyses for the theoretical dimensions are quite satisfactory. Based on the results of factor analysis all of the theoretical constructs with the exception of one (quality of the decision process output) have been upheld. The results of reliability analyses show in the Tables, indicating that the measures are reliable.

*Sampling Profile*

A total of 472 questionnaires were distributed. Follow up efforts were initiated to obtain meaningful rate of response. Finally a total of 312 questionnaires were returned. Out of 312 questionnaires received a total of 305 were deemed usable for analysis and seven cases were left out because of in-complete responses. This represents an overall response rate of 66 % and an effective response rate of 65 %.

The demographic characteristic of responding managers indicated that most of the managers have high level of education (bachelor degree = 42%, master degree or higher = 58%) and moderate and long working experience in the organization (11 years or more =40%). The average age of the managers is nearly 40 years. Similarly, as is common in many countries, managers in the sample are mostly male (80%) with a small minority of the female managers (20%). It also indicates that the highest number of managers is at the top level (45%) followed by middle level managers (34%) and operational level managers (21%).

*Overall Descriptive Statistics*

To acquire a feel for the data and to describe the responses for the major variables under study, descriptive statistics such as the frequency distributions, maximum, minimum, mean, and standard deviation on all the independent and dependent variables were obtained. From the results in Table 7 it can be seen that the mean of all variables fall between 2.6 and 3.2 (about average). This indicates that there is no extreme value for the mean. The standard deviation for all variables is also shown in the table. The size of the standard deviations indicates variations in the data for identifications of patterns of interrelationships among the variables.



Table 7 Descriptive Statistics of variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Manager's Risk propensity	305	1.00	5.00	2.9812	.8976
Rationality in decision making	305	1.20	4.35	2.89	.9877
Decentralization of decision making	305	1.00	5.00	3.1202	.8976
Politicization in decision making	305	1.00	5.00	2.6188	.9888
Decision process quality	305	1.44	5.00	3.1980	.8943

The results of frequency distributions indicate that most of the managers were familiar with the subject of the strategic decisions. In general, large and medium size manufacturing firms most of the time benefited from decentralization of decision-making process. It also shows that risk propensity of younger manager were higher than old managers. The results also show that the extent of rationality, decentralization and politicization in strategic decision-making process do not vary by the level managers.

*Hypothesis Testing*

Correlation analysis was conducted to provide an initial picture of the inter-relationships among the variables of interest. From the results of Table 8 we can see that manager's risk propensity is significant and negatively correlated with the extent of rationality in the decision-making process ( $r = -.310$ ,  $p - \text{value} < .01$ ), and is significant and positively correlated with the extent of decentralization in the decision-making process ( $r = .295$ ,  $p - \text{value} < .01$ ) while it is positively and significantly related to politicization of the decision process ( $r = .321$ ,  $p - \text{value} < .01$ ).

The correlation table indicates that the extent of rationality and also decentralization in the decision-making process are positively and significantly correlated with quality of the decision process output ( $r = .511$  and  $.421$ ,  $p - \text{value} < .01$ ), while the extent of politicization in the decision-making process is negatively correlated with quality of decision process output ( $r = -.214$ ,  $p - \text{value} < .01$ ).

Table 8 Correlation between variables

	manger's risk propensity X1	rationality Y1	Decentralization Y2	Politicization Y3	Decision process output. Z
X1	1.000				
Y1	-.310**	1.000			
Y2	.295**	.101	1.000		
Y3	.321**	.105	.065	1.000	
Z	-.233**	.511**	.421**	-.214**	1.000

\*Significant at the 0.05

\*\* Significant at the 0.01

*Determinant of Quality of Decision Process Output*

The regression equations were estimated with decision process output as dependent and each of the three dimensions of the strategic decision-making process as the independent variable. The results of probability plots of residuals indicate that the data points fall more or less along the diagonal line with no substantial deviation from the line. This together with relevant Histogram confirms the normality of the error term. However, the sample size is large enough to accept normality distribution.

The results of multi-collinearity test indicate that the values of tolerance and variance inflation factor (VIF) fall within acceptable range (tolerance 0.57 to 0.89 and VIF 1.11 to 1.74) outliers were identified and removed using a case-wise diagnostics and partial regression plot approach.

The results displayed in table 9 indicate that the F-values ( $df = 304$ ) is significantly large to reject the null hypothesis of no linear relationship between decision-making processes with quality of the decision process output

The results displayed in table 9 support the three hypotheses;  $H4$ ,  $H5$  and  $H6$ ; ( $\beta = .511$   $\rho < .01$ ,  $\beta = .421$   $\rho < .01$  and  $\beta = -.214$   $\rho < .01$ ). Thus, the results of an examination of the significance of each of these variables indicates that rationality and decentralization of the strategic decision-making process positively and significantly influence the quality of the decision process output, while the politicization of the strategic decision-making process negatively and significantly affect the quality of the decision process output,

Table 9. regression analysis

Independent Variables	F values	df	Dependent variable (Z) Beta values
Y1 Rationality in decision making process	70.33	304	.511**
Y2 Decentralization in decision making process	69.05	304	.421**
Y3 Politicization in decision making process	78.45	304	-.214**

Significant at the 0.05

\*\*Significant at the 0.01

Significant at the 0.001

## 7- DISCUSSION AND CONCLUSIONS

From the results of descriptive analysis and hypothesis tests several expected and unexpected results emerged. With regard to major demographic variables, I found that strategic decision-making process in large and medium organizations seems to be more rational than smaller sized organization. This can be attributed to the fact that large organization has the necessary resources (human, expertise, financial, etc) to allow for a more thorough and systematic investigation. Furthermore, in large companies managers are paid employee and not owners. As non-owner they act as agents and therefore, need to be accountable to the owners. This constraints their action and decision-making and increases the need to be more systematic and rational.

I found that the extent of rationality, decentralization, and politicization in the strategic decision-making processes do not vary by the levels of managers. I also found that the junior managers (35 years or less) with limited years of services (less than 5 years) are more likely to use politicization process than the others. This seems to be true because young managers are usually lower in the organizational hierarchy and therefore seek more support from others in their decision-making. Furthermore, being younger, they are less experience and therefore require collaboration to corroborate their decision. Hitt and Tyler, (1991) stated that younger managers take greater risks than older ones. This can also encourage them for more negotiation and coalition. Most of the managers who participated in this study have high level of education (Bachelor degree or higher) and moderate and long working experience in their organization (11 years or more = 40%). This indicates that the majority of managers have high potentials in their managerial position. The survey provides evidence that firms used decentralization process more than rationality and politicization process. The low utilization of politicization process in decision-making can be expected to vary between managers who have the knowledge and decide not to use the process and those who lack the requisite knowledge.

*Risk Propensity:* With the exception of Papadakis et al. (1998) I could not find any study relating manager's risk propensity to the extent of rationality, decentralization, or politicization in decision-making process while much has been written about risk and performance and risk and rate of return.

As expected the results of our analyses indicate that manager's risk propensity is negatively related to the extent of rationality in the decision-making process. Even though Papadakis et al. (1998) did not find any relationship between these variables I believe that managers with high tolerance for risk are more unlikely to go through the various steps of the rational. These managers prefer to act in a faster manner (Wally & Baum, 1994), rather than to go through the various phases of a rational process, which normally is a slow decision-making process (Fredrickson & Mitchell, 1984). Thus, they are less likely to use a rational process in the strategic decision-making process. Literature (e.g. Williams, 1965) argued that those with higher tolerance for risk are likely to choose more uncertain decision with limited number of phases.

With regard to the extent of decentralization in the decision-making process as expected the results of this study show that manager's risk propensity is positively related to the extent of decentralization in the decision-making process. This would mean that managers are more likely to delegate decision-making authorities to lower level of managers if their tolerance for risk is greater. Papadakis et al. (1998) found no such relationship. Similarly, this study found positive relationship between manager's risk propensity and the extent of politicization in the decision-making process, whereas Papadakis et al. (1998) found no such relationship. I believe that managers who have high tolerance for risk are more likely to go through negotiations, coalition, and use of power in the decision-making process.

### *Decision Process Characteristics and Quality of the Decision Process Output*

I am not aware of any existing empirical study of strategic decision-making that focuses on quality of the decision process output and investigates how well the decision process was carried out. Most of the studies available have studied on one aspect of final decision outcomes namely organizational effectiveness or performance (e.g. Fredrickson & Mitchell, 1984; Eisenhardt, 1989; Priem et al., 1995). This study found that the extent of rationality in the strategic decision-making process positively influences the decision-making process output. This would mean that the more managers go through a rational process in their strategic decision-making the more likely the quality of the decision-making process to be high. I believe that in a rational decision process where the problem is properly defined, various alternatives are generated, adequate information are used, alternatives are evaluated and the best possible alternative is selected, the output of the decision-making process will be of greater quality. According to Bourgeois & Eisenhardt (1988) a rational analysis improves the quality of the decision.

Similarly this study found that the extent of decentralization in the decision-making process positively impacts the quality of the decision-making process output. This is to say that more participation in decision-making process or more delegation of stages of the planning process to lower level managers lead to higher quality of decision process output. Given that decentralization process in the strategic decision-making generate more ideas, more

discussions, more evaluations, and more information; more focus will be given to possible choices and better selection. Greater participation will also lead to greater discussion of ideas and the greater the chance of achieving better quality decision. Furthermore, greater delegation and participation will create greater awareness of the basis for the decision; thus providing greater chance of the decision to be implemented successfully.

At the same time as expected my analyses suggests that the extent of politicization in the decision-making process negatively influences the quality of the decision-making process output. This makes sense, as managers who have gone through bargaining, coalition, and use of power in their decision making process are more likely to look for individual's or group's interest rather than that of the organization. Typically, negotiated solution is never the optimal solution for the organization, but a satisfying one; a solution that satisfies interested parties. Politicization of the decision process will diminish the quality of the decision-making process output, as it is less likely that a choice based on individual interest (political assumption) will serve organizational goals (rational assumption). In other words assumptions underlying the political process of decision-making are inconsistent with those of the rational process (Dean & Sharfman, 1996; Lyles & Thomas. 1988).

Based on research findings we may conclude that better quality decision is achieved through a rational and decentralized process. Thus, an organization should encourage greater use of rational and decentralized process in the decision-making. How can this be achieved? It depends on the organizational policy, culture and structure. By providing appropriate structure and policy organizations may encourage the use of a more rational or decentralization process in decision-making this is true even if the impact of the decision to be made is great. On the other hand lower quality is achieved through politicization process of decision-making. An unstable or unpredictable situation may encourage managers to use politicization in the decision-making process, where the organizational strategy and policy are not clear and especially if the decision-makers tolerance for risk is high. By clearing the situation and selecting managers whom risk propensity are reasonable; organizations can reduce the chances of using politicization in the decision-making process. In sum, to the extent that a rational and a decentralized process in strategic decision-making can be encouraged while political process is restrained, CEOs may be able to improve the quality of the decision process output.

## **8- Theoretical Implications**

The findings indicate that the type of process used in decision-making affect the quality of the decision outputs. One of the obvious implications of this study is that although manager's risk propensity plays very important roles in strategic decisions, the process in which a decision is made really matters (Dean & Sharfman, 1996).

The findings show that managers with less seniority (young and less experienced) with greater propensity to risk are more likely to use a political process rather than a rational or a decentralized one. Upper echelons theory states that organizational outcomes, strategic decision, and performance levels are partially predicted by manager's characteristics (Hambrick & Mason, 1984). In line with this theory another implication suggested by this study is that top management characteristics (e.g. tolerance for risk) significantly influence the nature of strategic decision-making process.

Since different organizations, with different managers, in different environments, and different problems may require different decisions, none of the three decision processes: rationality, decentralization, or politicization in decision-making is best for all circumstances. This provides evidence to support contingency theory that recognizes the possibility of different optional decision process for different situations.

## **10- Limitations of the Research**

The complex nature of strategic decision-making process as a research topic places limitation on this study particularly in the area of sample selection and data availability and collection. The major sample selection at the manufacturing firm's level is difficult because firm's perception in terms of strategic decisions may not be the same; a decision that is strategic in one firm may not be strategic for the other one thus, it is not easy to ascertain relevant sample characteristics.

Large-scale data collection was also a limitation because information on particular decision could be collected through a limited number of top managers who are usually either too busy or unavailable particularly the CEOs.

Although CEOs who had been involved in strategic decisions were the best source of the much needed data, it is likely that their response are somewhat biased toward a rational, positive view of the decision-making process.

## **11- Suggestions for Future Research**

One clear opportunity for future research is assessing the strategic decision outcomes by conducting a longitudinal research.

Conducting a field experiment study on time-pressure as a moderating variable in strategic decision-making process may open up a new avenue for further research. Another research area would be to add other contextual factors to those considered in this study.

The findings of this study might not be generalizable to other cultures. It would be helpful to understand if the various cultures impact the process differently. It is obvious that replicating this study in other manufacturing firms with different strategic decisions would increase our confidence in the results.

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