



Effects of Flexible Knowledge Inflow Structures and Environmental Analysis on Strategic Planning Performance

Dr. Hakan ASLAN

Bahçeşehir University Graduate School of Social Sciences
hakan.aslan@gss.bau.edu.tr
ORCID: 0000-0003-3224-1020

Abstract

Recently uncertainty and risk along aside with the close competition that has been increasing are what limits the companies operations, their strategic planning, and their performance. This motivates firms to look for sustainable solutions to fight the shortening in their life expectancy. Right decisions regarding the suitable strategy at a certain time are taken by accumulating adequate information on environmental changes and terms of competition. Strategic planning's main goal is to find the best strategy available by integrating as many relevant factors as possible to have the best robust results. The aim of this study is to construct a model that demonstrate the relevance of the mediator impact of environmental analysis on the relationship between the information inflow structure of companies and the scope of strategic planning. The results accumulated shows that companies, which include the information from their sub-units along with accurate analysis of surrounding circumstances, are able to prepare better comprehensive strategic plans.

Key Words: Strategic Decision Making, Strategic Planning, Environmental Analysis, Knowledge Inflow Structure, Flexible Organizations

Bilgi Akış Yapılarının ve Genel Çevre Analizinin Stratejik Planlama Performansına Etkisi

Özet

Son zamanlarda artan rekabetin yanı sıra artan belirsizlik ve risk, şirketlerin faaliyetlerini, stratejik planlamalarını ve performanslarını sınırlayan olgular haline gelmiştir. Bu durum, yaşam süreleri kısalan firmaların mücadele etmek için sürdürülebilir çözümler aramalarını motive etmektedir. Belirli bir zamanda uygun strateji ile ilgili doğru kararlar, ancak çevresel değişiklikler ve rekabet koşulları hakkında yeterli bilgi biriktirerek alınabilmektedir. Stratejik planlamanın temel amacı, en iyi sonuçlara sahip olmak için mümkün olduğunca çok çevresel faktörü entegre ederek mevcut en iyi stratejiyi bulmaktır. Bu çalışmanın amacı, çevresel analizin şirketlerin bilgi akış yapısı ile stratejik planlama kapsamı arasındaki ilişki üzerindeki etkisini gösteren bir model oluşturmaktır. Bulunan sonuçlar, çevredeki koşulların doğru analizi ile birlikte alt birimlerinden gelen bilgileri analiz eden şirketlerin daha kapsamlı stratejik planlar hazırlayabildiğini göstermektedir.

Anahtar Kelimeler: Stratejik Karar Verme, Stratejik Planlama, Çevre Analizi, Esnek Organizasyonlar

INTRODUCTION

When operating under uncertainty and risk requires pursuing correct action packages as that remarks the difference between success and failure for businesses. Correct actions mean adopting the most suitable strategy among the available alternatives at the right time. Especially for the Perceived Environmental Uncertainty (PEU), Miller's contribution is critical. Miller characterized it at three different levels: the general environmental uncertainty, industry uncertainty and firm uncertainty. Moreover, the general environmental uncertainty includes the macro-environmental variables, political, economic, socio-cultural, natural uncertainty. The industry uncertainty includes the competition degree of both markets input and output markets. However, the firm uncertainty indicates the uncertainty related to the firm such as, credibility, liability, operations, R &D, and behavioral features. Contrary to Miller, Miliken definition of PEU was in three different methods, state, effect, and reactive uncertainty, where state uncertainty is the external environment's uncertainty. Effect uncertainty is the impact of external on internal environment, reactive

uncertainty is the effect of both internal and external environment's uncertainties on strategies adopted by organizations (Tapinos, 2011).

Accurate strategies adopted are highly affected by fast changing environmental conditions, how the competition and environment are shaped in the future. For accurate projections various techniques based on historical data could be applied like qualitative techniques, time series and causal models can be used to help the administration make the correct decision.

All mentioned above are valid under the presumption of individual act rationally but stay unable to form expectations on some cases like the 2008 crisis. It means that individuals do not act under rationality concept. But rather they are bounded by available information when making decisions. It indicates that imperfect information flow is what cause the uncertainty. Also, it rises complicated human nature as emotions controls most of individuals actions which causes the bias from the rationality concept. However, according to Simon individuals make decision with bounded rationality, they make sufficient decisions but still not the best decision, as they are not aware of all alternatives, as they choose from the available alternatives.

This study examines the decision making behavior of firms operating in Turkey, and what are the elements that are integrated in the decision making process. In that scope, the knowledge inflow between sub-organizational units and the environmental analysis level, which construct the source of change, are assessed.

1. DECISION MAKING IN ORGANIZATIONS AND STRATEGIC PLANNING

Decision made by the any organization's administration is the major factor that defines an organization's success. Running and managing an organization started to become more complicated during the 21st century, where the administration is responsible for the organization and the employees' future. Thus well detection of factors that shapes the future is critical (Khakheli and Morchiladze 2015, p. 425).

Decision making directly affect the operations and activities of the firm, decisions are made on all level in the life of an organization to achieve defined goals (Yılmaz and Talas 2010, p. 197).

Efficient allocation of resources is also related to decisions taken by the administration where decision-making constructs the base for management in modern business models (Yeşil and Erşahan 2011, p. 319).

On all levels and in all departments of a firm time is spent on decision-making, in that regard understanding the approaches used of decision making of firms is required. Moreover, well definition of the faced problems, presenting both controllable and non-controllable factors, the interaction between these variable and developing the rules to decision making is required (Eren 2010, 35).

One of the major roles of administration in any company/ organization is decision making, in targets set and their achievements. Thus ensuring the actualization of operation is an outcome of decision-making (Yılmaz and Talas 2010, 198).

Furthermore, decision-making can be seen as a managerial and an organizational process as it is related to topics policies set, goals set, and planning. As stated by Can, Doğan and Doğan (2001, p. 207); decision-making is a managerial process, which means that the administration's main duty is making decisions. A manager title does not differentiate the manager but the decision-making responsibility does. Decision-making is an organizational process, as in modern business models the decision making is a process that includes teams work that generates computer product. Thus, the decisions made by managers shape the organizational behavior.

Another major burden of decision making is that firms operates under uncertainty and decisions must be taken accordingly, as uncertainty is the major factor that drives the managers from acting

under rationality. As individuals takes shortcuts rather than inclusive decision-making (Busenitz and Barney 1997, 15).

When considering the concept of environment two types evolve, the general environment and task environment. Where task environment is formed by factors that directly impact the daily operations, competitiveness, like competitors, clients, and legal authorities, in other words, the microenvironment according to strategic management theory. Whereas the general environment consists of factors that indirectly affect the organization such as political, economic, technological, social, ecological environments which all surrounds the microenvironment and being called as macro-environment (Vecchiato and Roveda 2010, 1529).

Environmental uncertainty is based on a main assumption that it occurs under imperfect or incomplete information on all levels, sectors, macro and microenvironments, events and firms. Which constructs the inability of consistent forecasting of the events, incapability on comprehending events and change drivers or assigning accurate probabilities to expected outcomes (Vecchiato and Roveda 2010, p. 1529).

Decision making under uncertainty and risk, when collected information is well risk identification implies solutions of the faced problems. This includes reducing technological, social, and political uncertainties to minimize losses (Çınar 2016, 19).

According to risk appetite of investors they are classified to three types of investors, investors taking risk, investors avoiding risk, and indifferent investors. Risk taking investors are willing to take risk even though the risk exceeds the future expected revenue. The indifferent investors are much more interested in expected future income rather than in the risk change. Investors avoiding risk, are investors who prefers alternatives with the lowest risk possible (Sezer 2013, 11).

Which motivated economists to develop model for decision-making process under risk and uncertainty such as expected utility theory, the theory of probability and heuristic decision-making model.

2. SOURCES OF CHANGE AND SCOPE OF ENVIRONMENTAL ANALYSIS

There are many factors that influence rational decision-making process within firms, which may relate to decision makers, inner organization and environment (Papadakis, Lioukas and Chambers 1998: 116). Therefore, organizations are considered as social systems that interact with their own surrounding environment in which previously stated macro variables impact managers' decision making (Onaran 1975: 110). As a conclusion, decision-making process determines goal and strategies of organizations in where social, economic, technological factors as well as historical data are analyzed to improve the quality of this process. Nonetheless, the variables, which affect the closer environment of organizations such as customers, competitors, suppliers, also included the analysis to form the goals and strategies (Yılmaz and Talas 2010: 203).

It is useful to take into account the natural internal environment in modeling an environmental overview of a particular organization (Harrison, 1995). Moreover, Thompson (1967) defines organizations as an integral part of the general environment, with the contribution and feedback of each unit, as well as the sum of many parts that make up an entity.

Organizations develop leadership on the basis of full data collection by chasing many intended methods to deal with managing the environmental problems. (Khanna and Kumar, 2011). As indicated previously, Harrison (1995) defines four environmental forces that affect organizational decisions, namely the economical, political, social and technological.

Under similar circumstances, it is essential to raise the flow of information from the environment to develop other effective methods to achieve an administrative good idea (Lenz and Engledow, 1984;

Klein, 1979; Miller and Friesen, 1983). Companies that can effectively identify environmental changes have the highest chance of survival (Hedberg, Nystrom and Starbuck, 1976; Bourgeois, 1978).

3. KNOWLEDGE INFLOW STRUCTURES

As mentioned earlier, organizations are social systems that linked to their environment and environmental factors affect the rational decision-making processes of organizations. (Rojot 2008, p. 140). In this context, the economic, social, political, cultural and physical environment of the organization affects the decision-making behaviour of managers (Onaran, 1975, p. 110).

Peker (1995, p. 46) states that organizations should present the input received from their environment as output to the environment in the life cycle. In this context, organizations are connected to their environment through these inputs and outputs. Therefore, the environment controls organization. As a result, the interaction of the organization with its environment can affect the quality of the organizational structure in many ways.

Ackoff and Emory (1972), defines learning as “competence and the adequacy of the awareness of various activities” while Nonaka (1994) defines it as “a process that is not only derived from data, but also perceptual, deliberate and organized data and information flow”. Moreover, it is important to notice that organizations increase to quality of decision making process by enhancing information flow structures both from top to bottom and from bottom to top (Hart, 1992).

4. HYPOTHESIS DEVELOPMENT

Burns & Stalker (1961) says that organic type structures are more suitable for relatively dynamic environments with lower centralization and formalization. Therefore, it can be said that the organic structure is characterized by more participation and upward information flow that function well in organizations that are operating in dynamic environments. In such environments, using "open systems" approaches concludes greater involvement of lower organizational levels, more flow of information and more public knowledge (Lindsay & Rue, 1980). Moreover, it is claimed that the bottom and horizontal knowledge of a manager is positively associated with the exploration activities of that manager (Raisch et al., 2009; Hambrick and Mason, 1984).

H1: *There is positive relationship between knowledge inflow structures and scope of environmental analysis*

Woodward (1965) argues that there is a relationship between "the element of uncertainty" and production planning. Organizational success requires consistent differentiation and integration with the demands of the environment, according to Lawrence and Lorsch (1967). Accordingly, the integrity of the long-term planning process can be seen as a reflection of the degree of structuring the decision-making tasks of the internal environment of the organization and an attempt to meet the uncertainty in the external environment. Therefore, the structure of the organization and the compliance of the organization with the environment affect each other. Organizations are engaged in activities such as using formal planning systems, taking advantage of external consultants and using forecasting models to deal with uncertainty.

H2: *There is positive relationship between scope of environmental analysis and scope of strategic plans.*

H3a: *There is a direct relationship between knowledge inflow structures and scope of strategic plans.*

H3b: *Scope of environmental analysis mediates the relationship between the knowledge inflow structures and the scope of strategic plans.*

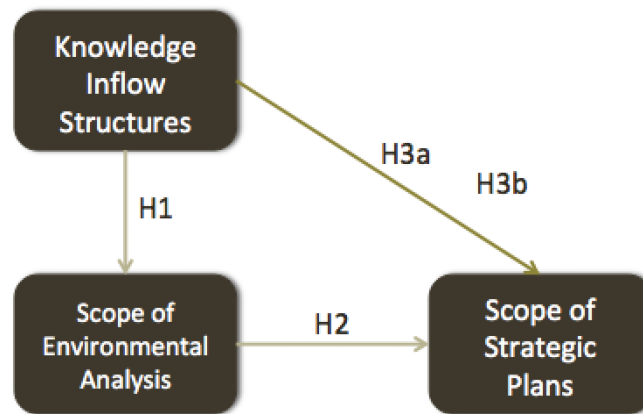


Figure 1: Model of the study

5. RESEARCH METHODOLOGY

In this study, the survey method was chosen as the data collection method and it was created as an online survey, especially due to its low cost and time saving. The survey was completed in four phases. In the first stage, the survey was developed within the framework of the literature. It was then distributed to three different academics to study and evaluate the relevance and design of the questionnaires. As a result of feedback from academics, the survey was finalized and the preliminary testing stages were completed. Preliminary testing results revealed that items were reduced from 108 to 52. The scale for Knowledge Inflow Structures (KIS) was reduced from 8 to 4 from the first set, and the environmental analysis coverage (Sea) was initially reduced from 46 to 36 for the developed scale. Participants were asked to evaluate their participation grades within the scope of the 5- point Likert type scale (1= "Definitely disagree" and 5= "definitely agree").

The questionnaire was applied to the managers of the companies operating in the Marmara region and 12.000 e-mails were sent accordingly. Only one person from each company responded to this survey. As a result of the submissions, a total of 227 responses were obtained. In the online survey application, there was no response that was eliminated, because all of the questions were forced to be replied.

In order to analyze the results of the study, a PATH analysis was performed between variables using the Structural Equation Modeling (SEM) analysis. Reason for using SEM Analysis is that SEM analysis can define relationships between complex theoretical concepts and can also explain the effects of various variables, moderator effect, mediator effect and control variables in detail, thus allowing it to work on multiple levels of complex problems (Bauer 2003; Rabe-Hesketh, Skrondal, and Pickles 2004).

Main Constructs:

Knowledge Inflow Structures (KIS): For measuring knowledge inflow structures items are generated from extent various studies (Mom, Bosch and Volberda, 2006; Lindsay and Rue, 1980; Rantapuska and Ihanainen, 2008). In this part of the study, a scale of eight items was used to analyze the knowledge inflow structures of companies. Generally, the items measure the firms' top-down, bottom-up and horizontal knowledge inflow structures.

Scope of Strategic Plans (SSP): The measures for scope of strategic plans were generated from the study of Lindsay and Rue (1980) and Thompson (1967). The scope of strategic plans are measured in three dimensions:

- 1- Range of strategic plans
- 2- Usage of mathematical models or computer programs
- 3- Including the budgets or schemes of sub-units

Scope of environmental analysis: Information collected from the general environment has been examined in five dimensions. According to the studies from Eren, Aren and Alpkın (2000), Bekirođlu, Erdil and Alpkın (2011), Vecchiato and Roveda (2009); Brouters, Andresen and Nicolas (1998), and Alpkın (2000), factors that affect long-term decisions are economic, technological, socio-cultural, natural and political and legal factors. By the light of these studies a scale, including 46 items to measure these environmental factors are used.

6. FINDINGS AND RESULTS

Reliability and the Validity of the Measures

In accordance with the studies of Anderson and Gerbing (1988), the number of scales that shaped the data entry structures (GIS) was reduced from 8 to 4 and the number of scales that shaped the environmental analysis coverage was reduced from 46 to 28. The scales that caused high correlation were not included in the analysis. The following table shows the results and the compatibility data of the study within the limits of the generally accepted compliance indexes. According to this [CMIN/d.f. 1.361, CFI = 0.99, GFI = 0.96, AGFI = 0.93, IFI = 0.99, TLI = 0.98, RMR = 0.05, RMSEA = 0.04 complying with acceptable standards. In addition, the values of CFI, TLI and IFI are highly satisfactory. The fact that these values are close to 1.0 indicates that the model is in perfect harmony. Similarly, the AGFI Index is between 0.90 and 0.95 and is within acceptable limits. The RMSEA value was between 0.05 and 0.10 at the beginning of the nineties and was perfectly compatible with these values 0.5 and below (MacCallum et al., 1996). In this study, the RMSEA value is approximately 0.5, indicating that the model is compatible. In addition, as shown in Table 2, all scales used in the survey were consistent ($p < 0.01$) and the factor loads of each scale are above 0.57.

Table 1: Descriptive Statistical Data

Definitions		Number	%
Sector	Industry	114	50%
	Service	107	47%
	Agriculture	6	3%
Number of Employees	Less than 50	65	29%
	50-99	19	8%
	100-249	26	11%
	250-499	22	10%
	500-999	28	12%
	1000-1999	29	13%
	2000-5000	17	8%
	More than 5000	21	9%
Year of Operation	Less than 5 years	20	9%
	5 to 10 years	24	11%
	11 to 20 years	42	19%
	21 to 40 years	74	32%
	More than 40 years	67	29%
Ownership	Domestic capital	176	78%
	Foreign capital	14	6%
	Domestic- Foreign joint venture	37	16%
Competition Level	Low competition	6	3%
	Medium competition	59	26%
	Intense competition	162	71%

The values of Cronbach's Alpha (CA) and Composite Reliability (CR) are shown in Table 2 in the evaluation performed to kill the internal consistency of the scales used in the study. As all values indicate in Bagozzi and Yi (1988), reliability items are satisfactory as it is above 0.75. The standard regression weights of variables are shown in Table 3. In this respect, the composite validity of the scale is acceptable (Anderson and Gerbing, 1988).

Table 2: Confirmatory Factor Analysis Findings

Constructs	Items	Standardized Loadings ^b	CA ^d	CR ^e
Knowledge Inflow Structures	KIS		0,80	0,81
<i>Information gathering from peer teams in other organizational units within own division</i>	HR2	0,81		
<i>Information gathering from peer teams in other divisions</i>	HR3	0,78		
<i>Information gathering from direct assistants</i>	BT1	0,75		
<i>Information gathering from one more hierarchical level down than direct assistants</i>	BT2	0,83		
Scope of Environmental Analysis	SEA		0,77	0,79
Economic factors	ECO	0,72		
Technological factors	TEC	0,76		
Socio-cultural factors	SCF	0,84		
Politic and legal Factors	PLF	0,62		
Natural factors	NTF	0,71		
Scope of Strategic Planning	SSP		0,91	0,91
Range of Strategic Plans	SP1	0,87		
Usage of mathematical models and computer programs	SP2	0,86		
Scope of Strategic Plans	SP3	0,91		

Notes:

^aCMIN/df = 1.361, CFI= 0.99, AGFI=0.93, IFI= 0.99, TLI= 0.98, RMR=0.05, RMSEA= 0.04

^bSL = Standardized Loadings

^cCA = Cronbach's alpha

^dCR = Composite reliability

As a result of the confirmatory factor analysis, it was determined that the scales developed for each variable have internal consistency. In addition, KMO (Kaiser-Meyer-Olkin) sampling adequacy measure) values for each scale have shown that the sample size is sufficient for factor analysis.

Table 3: Regression Weights

			Estimate	S.E.	C.R.	P
STRPS01	<---	SSP	.968	.052	18.553	***
STRPS02	<---	SSP	.984	.054	18.081	***
STRPS03	<---	SSP	1.000			
HR2	<---	KIS	.746	.196	3.801	***
HR3	<---	KIS	.745	.200	3.729	***
BT1	<---	KIS	.751	.089	8.426	***
BT2	<---	KIS	1.000			
SCF	<---	SEA	1.000			
PLF	<---	SEA	.635	.104	6.139	***
TEC	<---	SEA	.926	.091	10.132	***
NTF	<---	SEA	.895	.111	8.037	***
ECO	<---	SEA	.841	.096	8.788	***

As mentioned before, the scope of environmental analysis scale consisting of forty-five questions has been removed from the scope of the analysis of the item loaded at different dimensions or showing high correlation with other dimensions. The remaining thirty-four questions were evaluated in five different dimensions. The five-dimensional questions are consistent with each other and with their dimensions. The following table shows factor predicates for each specified dimension.

Table 4: Scope of Environmental Analysis Scale Component Matrix

	Factor				
	Economic	Socio-Cultural	Technological	Natural	Political and Legal
Economic 06	0,812				
Economic 07	0,802				
Economic 09	0,793				
Economic 08	0,774				
Economic 05	0,705				
Economic 03	0,691				
Economic 10	0,68				
Economic 02	0,672				
Economic 04	0,642				
Economic 13	0,565				

Economic 12	0,503				
Economic 11	0,485				
Socio-Cultural 06		0,762			
Socio-Cultural 05		0,733			
Socio-Cultural 07		0,715			
Socio-Cultural 04		0,701			
Socio-Cultural 10		0,693			
Socio-Cultural 11		0,644			
Socio-Cultural 01		0,641			
Socio-Cultural 08		0,587			
Socio-Cultural 03		0,556			
Socio-Cultural 09		0,536			
Technological 03			0,81		
Technological 04			0,767		
Technological 02			0,673		
Technological 05			0,637		
Technological 01			0,629		
Natural 01				0,851	
Natural 05				0,796	
Natural 02				0,747	
Natural 04				0,674	
Natural 03				0,513	
Political 06					0,905
Political 04					0,779
Political 05					0,707
Political 01					0,642
Extraction Method: Maximum Likelihood.					
Rotation Method: Varimax with Kaiser Normalization.					

Hypothesis Testing

The results of PATH analysis are shown in Figure 2, which calculates the relationships between variables regardless of the impact of the mediator variable. The relationship between independent variables (KIS and SEA) and dependent variable (SSP) was analyzed using AMOS and path analysis.

Table 5: Estimated Results of the Model

		Estimate	S.E.	C.R.	P
SEA	<--- KIS	.371	.103	3.592	***
SSP	<--- SEA	1.202	.150	8.036	***
SSP	<--- KIS	-.078	.119	-.653	.514

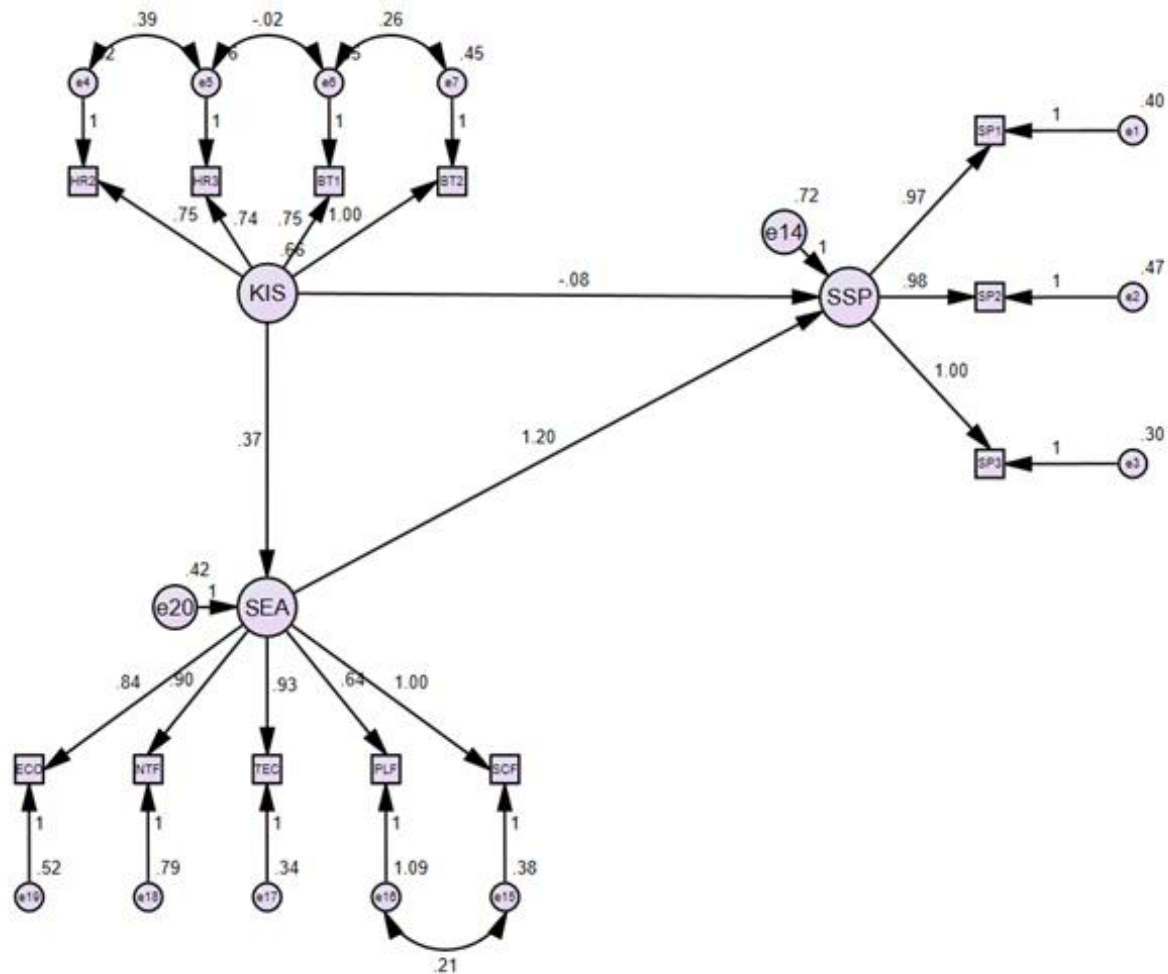


Figure 2: Estimated Results of the Model

According to these results hypothesis of H1 and H2 are accepted and H3a is rejected.

H1: *There is a significant relationship between the knowledge inflow structures and the scope of environmental analysis. (ACCEPTED)*

H2: *There is a significant relationship between the scope of environmental analysis and scope of strategic planning. (ACCEPTED)*

On the other hand, it was found that the relationship between KIS and SSP was significant when we tested the relationship between KIS and SSP alone except for Model. The results of the analysis of this relationship are shown in Table 6 and Figure 3.

Table 6: Estimated Results of SHP & SSP Relationship

	Estimate	S.E.	C.R.	P
SSP <--- KIS	.386	.160	2.410	.016

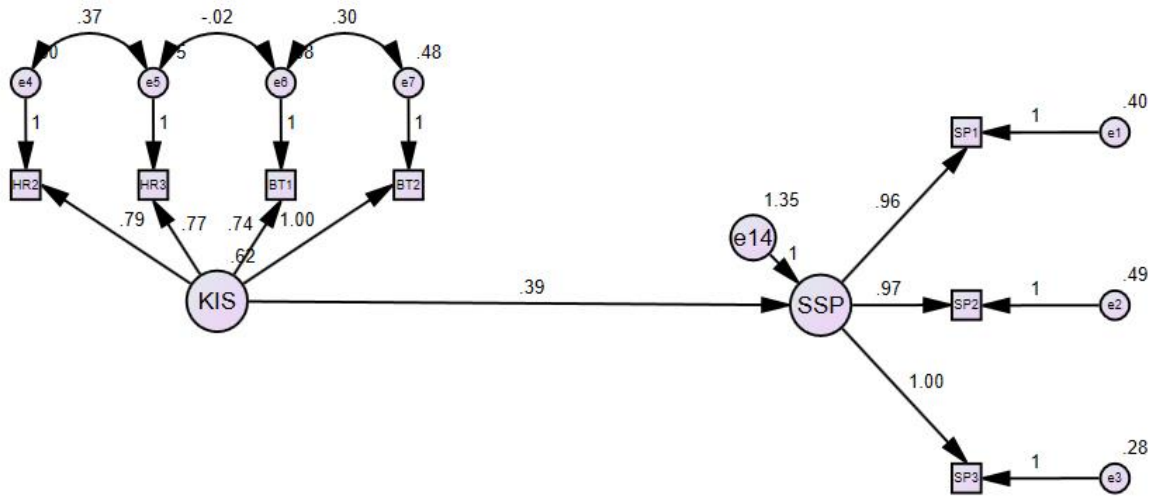


Figure 3: Estimated Results of SHP & SSP Relationship

As a result of the analysis made in this direction:

H3a: *There is a direct relationship between knowledge inflow structures and scope of strategic plans. (ACCEPTED)*

Mediation analysis is used to explain how and why the relationship between dependent variable and independent variable exists (Hair et al. 2014). In general, a mediator has a connector between a dependent variable and an independent variable. The relationship between the independent variable and the mediator variable must be significant, according to Baron and Kenny (1986). If these relationships are meaningful, the relationship between dependent and independent variables is eliminated. However, even if these relationships are meaningful to accept the mediator effect, the relationship between dependent and independent variables must be meaningful when the mediator is removed from the model. In this study, there is a significant relationship between Knowledge Inflow Structures (KIS) and Scope of Environmental Analysis (SEA) and Scope of Environmental Analysis (SEA) and Scope of Strategic Planning (SSP). In addition, when examined alone there is a significant relationship between Knowledge Inflow Structures (KIS) and Scope of Strategic Planning (SSP). In this context, the Scope of Environmental Analysis (SEA) has a mediating effect on the relationship between Knowledge Inflow Structures (KIS) and Scope of Strategic Planning (SSP). Results of the analysis are shown in Table 7 and Figure 4.

Table 7: Mediating effect of SEA

	Estimate	S.E.	C.R.	P
SEA <--- KIS	.363	.102	3.562	***
SSP <--- SEA	1.157	.131	8.862	***

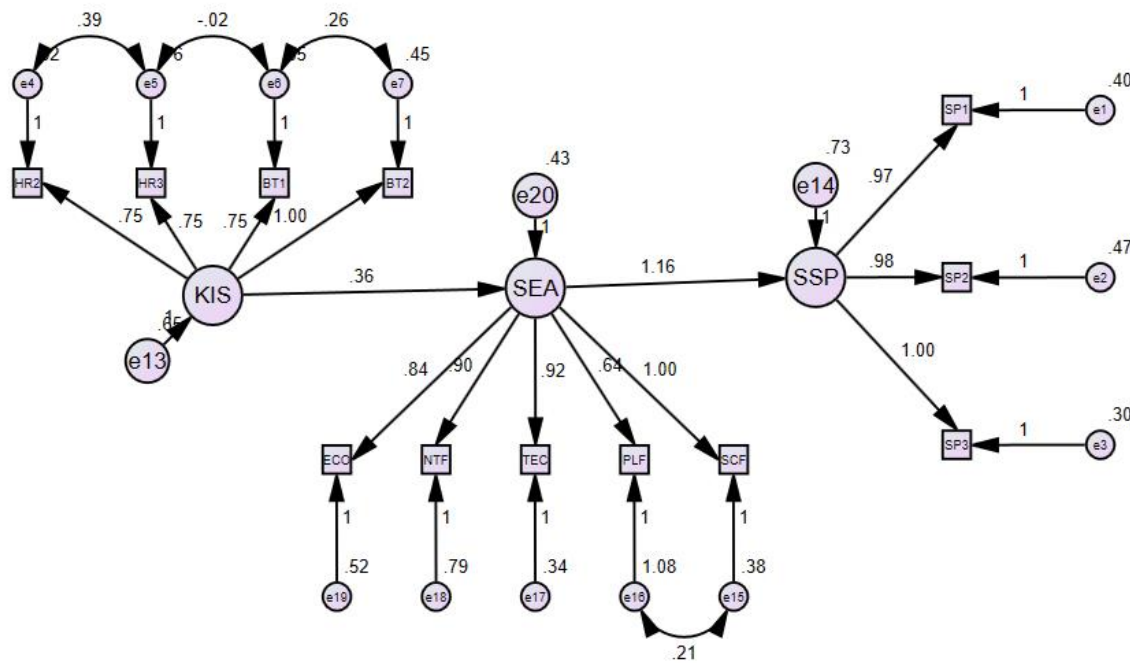


Figure 4: Mediating effect of SEA

As stated at H3a and shown in Figure 3 there is a direct relationship between the variables KIS and SSP. But when variable SEA is imported in to the model, the relationship between KIS and SSP becomes insignificant as shown in Figure 2 and Table 5. Thus the study proves that SEA fully mediates the relationship between KISS and SSP.

H3b: *The scope of the environmental analysis has a mediating effect on the relationship between the knowledge inflow structures and the scope of strategic planning. (ACCEPTED)*

7. CONCLUSION

In this study, it was observed that the size of the company, the level of competition and the level of internationalization of the company affect the environmental analysis and decision making structures of the companies operating in Turkey. In particular, when we look at variables such as capital structure and intensive competition, some differences were found between firms. In this study, especially in the intensive competition environment, businesses need more environmental information and environmental analysis in this direction while it is observed that the low competition levels of this need is less.

Similarly, when looking at the levels of internationalization, although the degree of internationalization of companies affects the way the company makes decisions, it is unfortunately not possible to determine whether this result originated in different decision-making cultures of foreign investors in Turkey. In order to illustrate this distinction, it is necessary to carry out a wider international study. In particular, a more comprehensive study can be carried out in the future, depending on the level of development of the countries or on the requirements of the conjuncture conditions in which they are located.

In the light of all these results, it was determined that the strategic planning carried out by the companies operating in Turkey covers between one and three years. This result shows that companies operating in Turkey actually make short-term plans and are not foresighted as a result of

the conditions in which they need to survive. These enterprises need to make more comprehensive environmental analysis in order to be more predictable.

When the results of the study were analyzed, all hypotheses were accepted and a model that they could follow in order to configure decision-making mechanisms for companies operating in Turkey was introduced. This study is an original study that revealed that institutions that creates bottom-up and horizontal knowledge inflow structures are more likely to be research oriented and that more comprehensive strategic plans can be made in this direction. These results support the studies of Sidhu et al. (2004) and Harrison & John (1980) about the environmental interactions of institutions. In addition, the study revealed that firms that makes more comprehensive environmental analysis, prepares long-term and comprehensive strategic plans including sub-unit budgets using mathematical models, or with the help of a computer program.

The results clearly show that companies that create flexible knowledge flow structures will produce very comprehensive and accurate strategic plans that result in a higher performance. Moreover, in this way they perform better environmental analysis. In this respect, organizations that aim to increase their chances of survival should transform themselves into more flexible and open systems.

BIBLIOGRAPHY

Ackoff, R. L., & Emory, F. E. (1972). *On purposeful systems*. Chicago, IL: AldineAtherton.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, 103(3), 411. <http://doi.org/10.1037/0033-2909.103.3.411>

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science*, 16(1), 74-94. <https://doi.org/10.1007/BF02723327>

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.

Bauer, D. J. (2003). Estimating multilevel linear models as structural equation models. *Journal of Educational and Behavioral Statistics*, 28(2), 135-167.

Bekiroğlu, Ç., Erdil, O., & Alpan, L. (2011). Variables perceived by managers as antecedents that lead firms to environmental management: an empirical research in the Turkish construction sector. *Procedia-Social and Behavioral Sciences*, 24, 101-122.

Brouthers, K. D., Andriessen, F., & Nicolaes, I. (1998). Driving blind: Strategic decisionmaking in small companies. *Long Range Planning*, 31(1), 130-138.

Burns, T., & Stalker, G. M. (1961). *The management of. Innovation*.

Busenitz, L. and Barney, J.B., 1997. Differences between entrepreneurs and managers in large organizations: biases and heuristics in strategic decision-making. *Journal of Business Venturing*, 12 (1), pp. 9-30.

Çınar, F., 2016. Belirsizlik durumlarında karar verme ve hava trafik yönetimi. Yüksek Lisans Tezi. Ankara: Türk Hava Kurumu Üniversitesi SBE.

Eren, E., 2010. Stratejik yönetim ve işletme politikası. İstanbul: Beta Basım Yayım.

Eren, E., Aren, S., & Alpan, L. (2000). İşletmelerde stratejik yönetim faaliyetlerini değerlendirme araştırması.

- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of management review*, 9(2), 193-206.
- Harrison, E. F. (1995). *The managerial decision-making process*(Vol. 4, pp. 1-39). Boston, MA: Houghton Mifflin.
- Harrison, J. S., & St. John, C. H. (1996). Managing and partnering with external stakeholders. *Academy of Management Perspectives*, 10(2), 46-60.
- Hart, S. L. (1992). An integrative framework for strategy-making processes. *Academy of management review*, 17(2), 327-351.
- Hedberg, B. L., Nystrom, P. C., & Starbuck, W. H. (1976). Camping on seesaws: Prescriptions for a self-designing organization. *Administrative Science Quarterly*, 41-65.
- Khakheli, M. and Morchiladze, G., 2015. Factors affecting decision making in an organization. *International Journal of Management and Commerce Innovations*, 3 (1), pp. 425-428.
- Khanna, M., & Kumar, S. (2011). Corporate environmental management and environmental efficiency. *Environmental and Resource Economics*, 50(2), 227-242.
- Klein, S. M. (1996). A management communication strategy for change. *Journal of Organizational Change Management*, 9(2), 32-46.
- Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative science quarterly*, 1-47. <https://doi.org/10.2307/2391211>
- Lenz, R. T., & Engledow, J. L. (1986). Environmental analysis units and strategic decision-making: A field study of selected 'leading-edge' corporations. *Strategic Management Journal*, 7(1), 69-89.
- Lindsay, W. M., & Rue, L. W. (1980). Impact of the organization environment on the long-range planning process: A contingency view. *Academy of Management Journal*, 23(3), 385-404.
- Miller, D., & Friesen, P. H. (1983). Strategy-making and environment: the third link. *Strategic management journal*, 4(3), 221-235.
- Mom, T. J., Van Den Bosch, F. A., & Volberda, H. W. (2007). Investigating managers' exploration and exploitation activities: The influence of top-down, bottom-up, and horizontal knowledge inflows. *Journal of management studies*, 44(6), 910-931.
- Nonaka, I. (1988). Toward middle-up-down management: accelerating information creation. *MIT Sloan Management Review*, 29(3), 9.
- Onaran, O., 1975. *Örgütlerde karar verme*. Ankara: Sevinç Matbaası.
- Papadakis, V.M., Lioukas, S. and Chambers, D., 1998. Strategic decision-making processes: the role of management and context. *Strategic Management Journal*, 19 (2).
- Peker, Ö. (1995). *Yönetimi geliştirmenin sürekliliği*. TODAİ.
- Rabe-Hesketh, S., Skrondal, A., & Pickles, A. (2004). Generalized multilevel structural equation modeling. *Psychometrika*, 69(2), 167-190. <https://doi.org/10.1007/BF02295939>
- Raisch, S., Birkinshaw, J., Probst, G., & Tushman, M. L. (2009). Organizational ambidexterity: Balancing exploitation and exploration for sustained performance. *Organization science*, 20(4), 685-695.
- Rantapuska, T., & Ihanainen, O. (2008). Knowledge use in ICT investment decision making of SMEs. *Journal of Enterprise Information Management*, 21(6), 585-596.

Rojot, J., 2008. Culture and decision making, in *The Oxford handbook of organizational decision making*, G.P. Hodgkinson and W.H. Starbuck (Eds.). Oxford University Press.

Sezer, D. (2013). Yatırımcı Davranışlarının Etkinliği ve Psikolojik Yanılsamalar. Adnan Menderes Üniversitesi Sosyal Bilimler Enstitüsü İşletme Anabilim Dalı, Aydın.

Sidhu, J. S., Volberda, H. W., & Commandeur, H. R. (2004). Exploring exploration orientation and its determinants: Some empirical evidence. *Journal of Management Studies*, 41(6), 913-932.

Tapinos, E., Dyson, R. G., & Meadows, M. (2011). Does the balanced scorecard make a difference to the strategy development process?. *Journal of the Operational Research Society*, 62(5), 888-899.

Thompson, J. D. (1967). *Organizations in action: Social science bases of administrative theory*. Transaction publishers.

Vecchiato, R., & Roveda, C. (2010). Strategic foresight in corporate organizations: Handling the effect and response uncertainty of technology and social drivers of change. *Technological Forecasting and Social Change*, 77(9), 1527-1539. <https://doi.org/10.1016/j.techfore.2009.12.003>

Woodward, J. (1980). *Industrial organization; theory and practice*(No. 04; HD38, W6 1980.).

Yeşil, S., & Erşahan, E. (2011). Konaklama İşletmelerinde Stratejik Karar Alma İle Yöneticilerin Demografik Özellikleri ve İşletmelerin Özellikleri İlişkisi. *Organizasyon ve Yönetim Bilimleri Dergisi*, 3(2).

Yılmaz, M. ve Talas, M., 2010. Bilgi merkezinde karar verme süreci. *Zeitschrift für die Welt der Türken*. 2 (1), ss. 197-216.