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### Strategic thinking and competitive intelligence: Comparative research in the automotive and communication industries

Mehmet Emirhan Kula<sup>a</sup> and Atılhan Naktiyok<sup>b,\*</sup>

<sup>a</sup>Erzurum Technical University, Business Administration Department, Erzurum, Turkey; <sup>b</sup>Ataturk University, Business Administration Department, Erzurum, Turkey; \* <u>emirhan.kula@erzurum.edu.tr</u>

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### Strategic thinking and competitive intelligence: Comparative research in the automotive and communication industries



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<sup>a</sup>Erzurum Technical University, Business Administration Department, Erzurum, Turkey <sup>b</sup>Ataturk University, Business Administration Department, Erzurum, Turkey \*Corresponding author: emirhan.kula@erzurum.edu.tr

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**ABSTRACT** The main purpose of this study is to examine the effect of strategic thinking skills of executives on competitive intelligence in high competition intense industries. The concept of strategic thinking represents a cognitive process that was examined along with system thinking, creativity and vision dimensions. On the other side the concept of competitive intelligence was evaluated with the dimension of competitive intelligence context and the competitive intelligence process as a process that represents the systematic collection of information about competitors through legal and ethical ways. In this study, the concepts of strategic thinking and competitive intelligence are examined around the related literature and to what extent these concepts are related to each other was investigated as well. Since the research on this relationship has a unique attribution, it contributes to the related literature. To test the model formed in line with the main purpose of the research, data were collected from 628 executives, who work in five high competition intense automotive industries and three communication industries, using a questionnaire method. The developed hypotheses were evaluated with appropriate analysis methods. In addition, industrial differences were revealed by comparing the two industries with appropriate analyses. According to the findings of the analysis, the strategic thinking skills of both executives participating in the research as well as the executives working in both industries have a positive and meaningful effect on their competitive intelligence. The study has made a significant contribution to the literature in terms of examining and explaining the relationship between the concepts of strategy and competition through the interaction of strategic thinking and competition intelligence.

**KEYWORDS** Automotive industry, communication industry, competition, competitive intelligence, strategic thinking, strategy

This study is derived from the PhD thesis titled "Strategic Thinking and Competitive Intelligence: A Comparative Research in Automotive and Communication Industries" by M.E. Kula.

### 1. INTRODUCTION

Business history is written on the interaction of strategy and competition. While the necessity of the strategy needs the existence of competition, the fiction and pattern of the strategy have been guiding the scope and dimensions of competition. Today's environmental conditions make it impossible for businesses to achieve sustainable success by only making some plans and applying these plans step by step. Businesses have to find ways to cope with turbulent environmental conditions and hyper-competition. All of the environmental factors that businesses carry out are vital activities and constantly changing. Businesses have to adapt to this drastic change and manage the change correctly.

the Considering age of information technology we are in, it is not an easy task to evaluate all environmental factors separately and to achieve the big picture by combining the parts. So, business managers must find answers to ever-changing questions such as: Why is one market and industry more profitable than another? Why is it riskier to trade in one region than another? Why are some businesses operating in the same industry more successful than others? What are the factors that make businesses successful unsuccessful? What measures should or managers take for the success of their businesses? However, all answers have a common purpose which is to give the business a competitive advantage. So, it seems possible to summarize all the questions stated above with a single question. How can businesses achieve a sustainable competitive advantage?

In the study, it was assumed that managers who have strategic thinking skills can use their competitive intelligence skills more effectively. In other words, the proposition that strategic planning will create competitive advantage, which has been going on for nearly half a century, lost its meaning with the introduction of information technologies. Therefore, in this study, the effect of strategic thinking, which is supposed to establish a bridge between the past and the future over the present, on competitive intelligence, which is a way of obtaining information that is supposed to provide competitive advantage, is examined.

In this study, answers to three questions have been sought based on this essential inquiry: Does strategic thinking affect competitive intelligence in industries with high competition intensity?": (1) Can business managers think strategically in competitive industries? (2) Do business managers care about the competitive environment and competitor analysis in competitive industries? and (3) How does strategic thinking affect competitive intelligence in the automotive and communication industries?

### 2. THEORETICAL FRAMEWORK

### 2.1 Strategic thinking

Strategic thinking is understanding that things cannot always be solved with a linear

approach. For this reason, organizations have to find ways to adapt to environmental uncertainties in a more informed, agile and flexible way. At this point, strategic thinking emerges as a cognitive process that also takes competitive alternatives into account and reveals solve environmentalwavs to organization uncertainties more sensitively and prudently (Fairholm and Card, 2009: 22; O'Regan, Hughes, Collins, and Tucker, 2010: 59). In other words, strategic thinking is not a sequence of systematic plans, but a pattern of cognitive planning. Rather than a road map to follow, it is a bird's eye view of all the roads to reach the destination. Thinking strategically, of course, requires being able to make predictions about the future, which is about determining the direction of all variables affecting the organization (Critelli, 2005: 48). In this respect, scenario and forecasting techniques attract attention as strategic thinking methods that organizations can use to discover unforeseen details and possibilities for the future (Ramírez and Selsky, 2016: 100).

Strategic thinking is seeing the future. However, it is not possible for managers who do not understand what has happened in the past to predict what might happen in the future (Mintzberg, Ahlstrand, & Lampel, 1998: 126). In this sense, people who can think strategically are people who use the past by looking forward, and who can predict the future by looking back. Therefore, strategic thinking can offer innovative solutions to complex events in a turbulent and hypercompetitive environment which has the potential to change the rules of competition and to depicture the future (Zahra and Nambisan, 2012: 220). As a result, the business environment is surrounded by many decisionmaking factors, and businesses are affected in some way by these decisions. The degree of impact is directly proportional to how effectively the enterprise can use its basic skills. For this reason, strategic thinking is the art of overcoming the opponent in a way and doing it with the same thing in mind that they are trying to apply to you (Dixit & Nalebuff, 2015: 7).

Mintzberg (1994b) argued that strategic planning is analysis and strategic thinking is synthesis, explaining the basic approach difference between strategic planning and strategic thinking. So much so that while strategic planning is concerned with how to implement the already determined strategic programs and methods, strategic thinking can reveal the synthesis that will build the future of the business as a result of organizational learning. In other words, strategic planning is the analysis of systems and methods, while strategic thinking is a synthesis of intuitive, creative and innovative thinking (Steptoe-Warren et al., 2011: 239). According to Haycock et al. (2012), while strategic planning means the implementation of strategies within a systematic and logical system, strategic thinking is a process that encourages creative and innovative thinking to overcome the dynamic and often unpredictable difficulties encountered in today's economy.

This study was based on Bonn's threedimensional strategic thinking model (2001). While Bonn (2001) defines strategic thinking as a cognitive way of solving strategic problems creatively with a rational approach, she states that strategic thinking consists of systems thinking, creativity and vision.

System thinking deals with the organization as a whole in interaction with its environment. There is a backward working principle, first to the whole and then to each subsection of the system. It tends to formulate basic strategies with a general to specific perspective (Haines, 2000: 34). In other words, system thinking is the ability to see the system as a whole in order to understand the properties, forces, patterns and relationships that shape the behavior of systems (Pisapia, Reyes-Guerra and Coukos-Semmel, 2005: 48).

Creativity is a human-specific intellectual process that can be beneficial to overcome existing problems to generate new ideas (Iscan and Karabey, 2007: 104). In the organizational sense, creativity refers to the ability to establish extraordinary connections between all business ideas that constitute the reason for the existence of the enterprise in line with the interests of the organization (Robbins and Coulter, 2012: 166). The strategy is to be able to develop creative ideas and innovative solutions in order to gain competitive advantage. In this sense, creative thinking represents a process that starts with generating ideas (Bonn, 2001: 65).

Vision expresses the future that businesses desire. The vision of a business is the declaration of its strategic intention that will enable the business to focus on achieving its goals and objectives (Craig and Campbell, 2005: 26). One of the most challenging tasks of managers is to keep the direction of the business stable under complex environmental conditions. In this sense, the vision can be defined as a vanishing point that shows the direction of the business (Moon, 2013: 1700). Vision, which is an important part of strategic thinking, helps business employees to work in a focused and motivated way without deviating from their goals. In addition, it contributes to businesses to see their current and future potential and to develop strategies accordingly (Fairholm and Card, 2009: 23).

#### 2.2 Competitive intelligence

Businesses that want to turn environmental opportunities should threats into obtain systematic information about their The competition information competitors. process predicts that businesses take three basic steps behaviorally: obtaining information about the competitor, interpreting and adapting (Li, and Calantone, 1998: 16). Before giving details about the concept of competitive intelligence, which will be based on these three steps, it is useful to explain why the concept, which is also translated and used as competitive intel in the literature, will be used as competitive intelligence (systematic mind development on competitors) in our study.

When the place of competitive intelligence activities in business activities is examined, it is seen that the focus of the concept is knowledge, but more importance is placed on analyzing the acquired information rather than (secret) information acquisition. In addition, competitive intelligence is not a business function, but a cyclical, systematic and external environment-oriented process that has certain steps between its beginning and end. In addition, competitive intelligence does not mean analyzing what happened in the past, but acting towards the future proactively (Rouach and Santi, 2001: 554; Köseoglu et al., 2016: 163). As a result, competitive intelligence activities represent a dynamic and multidimensional structure as they are carried out in an environment where rules and players are constantly changing.

In addition, although it is not compulsory to utilize artificial intelligence technologies for competitive intelligence applications, it is indispensable at the point reached, given its contribution to decision-making processes; information is no longer just the publicly shared news, but the algorithms hidden behind them (Liebowitz, 2006: 13). In this sense, it will not be possible to call the concept of artificial intelligence artificial intel. Considering all these reasons, using the concept of competitive intelligence as competitive intel will be a "not wrong but incomplete" expression, while using it as competitive intelligence will be a "more accurate and holistic" form of expression.

Many different definitions of competitive intelligence have been made by different researchers. Provided that the operating logic is the same, different perspectives are presented to the focal point of the concept in the definitions. Before giving a clear definition of what competitive intelligence is, it would be appropriate to explain what it is not. Competitive intelligence is not pages of thick reports, espionage, eavesdropping, information and document theft about the competitor. Its simplest form is to analyze the public information about the competitor (Fuld, 1995: 23).

Businesses basically want to learn about their competitors for three reasons: curiosity, enthusiasm, and foresight. They are curious about their competitors' activities simply because they operate in the same industry, and this curiosity can be simply satisfying. Curiosity is not satisfied with a certain level and if some of the competitors' activities are appreciated, the desire to envy and be like them will increase. Ultimately, as the industry and the competitor are constantly followed, it will be possible to make predictions about the future, independent of the competitor (West, 2001: 13; Wright, Pickton and Callow, 2002: 352). These behavioral approaches, which affect the strategic decisions of businesses in the long or short term, form the basis of competitive intelligence applications.

In light of the above information, competitive intelligence can be defined as systematically gathering information from the industry and competition environment, legally and ethically. I then involved processing, analyzing and sharing the information collected in order to take action-oriented steps and thus make predictions for the future in order to guide strategic decision makers in enterprises and to ensure that the enterprise gains competitive advantage. The twodimensional structure developed by Saavman et al. (2008) was taken as the basis of the research of competitive intelligence within this study. They discuss the competitive intelligence context and process as described below.

The *Competitive Intelligence Context:* Competitive intelligence is a series of activities that enable systematic information gathering from environmental factors. The context of competitive intelligence consists of a number of attitudes and behaviors that form a framework for information gathering activities and directly affect them. First, competitive intelligence activities require organizational awareness. Managers should be aware of the events happening around them and develop an attitude in this direction in order to keep businesses competitive. On the other hand, managers should create a culture that encourages information sharing at all levels. This situation, which can be expressed as a culture of competition, includes all mental and operational activities that encourage internal information sharing and turn it into a useful organizational tool. Since awareness. organizational attitude and competitive culture cannot occur with the will and efforts of managers alone, systematic information sharing should be ensured with active participation of employees. These elements, each of which constitute the context of the competitive intelligence process individually, come together to form the context of competitive intelligence.

The Competitive Intelligence Process: The basis of competitive intelligence is that businesses gain strategic and sustainable competitive advantage. In this sense, the process of competitive intelligence refers to the process of creating information that will provide a competitive advantage to the business. In the process of competitive intelligence, first of all, the necessary information is determined and the necessary planning is made. The processes of collecting data from the external environment, transforming the data into information by analyzing it and distributing it to the relevant units within the enterprise are carried out especially with the help of information technologies, all of which are referred to as information design. Businesses internalize the information they obtain through the information design process, while making a competitive comparison, revealing the fundamental differences between themselves and their rivals. Ultimately, the process operates both as an important tool in the strategic decision-making processes of businesses and as an output that enables the business to determine its competitive position relative to its competitors.

### 3. THE RESEARCH MODEL AND HYPOTHESES

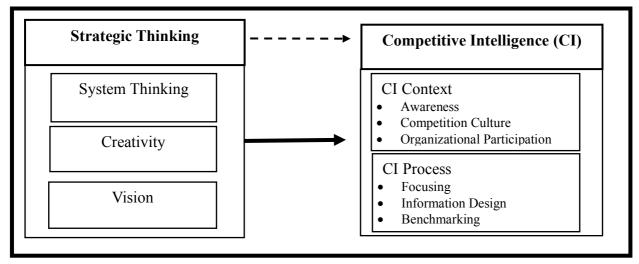


Figure 1 Research model: The effect of strategic thinking on competitive intelligence.

Although the importance of strategic planning and analysis of the competitive environment is accepted within the study, the interrelation and interaction between the strategic thinking skills of managers and their competitive intelligence has been investigated, especially in industries with high competition intensity and mutual firm dependence by considering the effect of technological innovations. As a result, the following model has been developed discussing strategic bv thinking and competitive intelligence processes around the relevant literature.

In order to test the research model, the following hypotheses were developed in light of studies that reveal the relationships between the relevant variables by scanning the strategic thinking and competitive intelligence literature.

For managers, strategic thinking refers to establishing a systematic and structural link between events that are likely to affect the business directly or indirectly. In other words, strategic thinking can be described as a dynamic and innovation-oriented process as well as being cognitive. Therefore, decisions caused by strategic thinking are expected to be creative, original and changing rules in the competitive game (Heracleous, 2003: 25; Tovstiga, 2013: 16). The literature shows that strategic thinking and competitive intelligence start at the same point at the cognitive level.

Competitive intelligence requires a certain level of awareness and attitude before various information gathering activities. In addition, Schein (2004) points out the importance of valuing new thoughts, beliefs and assumptions while listing three basic elements of creating an organizational culture. In this sense, it is thought that there is a strong relationship between strategic thinking and the scope of competitive intelligence, given that managers can create a competitive culture at a certain level by giving importance to creative thinking, and they can ensure their contribution to the long-term goals of the enterprise to the extent that they can convince employees.

There is a significant relationship between the cognitive abilities of individuals and environmental factors. In other words, it is a process that requires the use of cognitive abilities for managers to consider and evaluate the complex structure that constitutes the business environment as a meaningful whole. Businesses are the main actors of industries. In this sense, businesses that want to create a sustainable competitive advantage and strengthen their competitive position against their competitors must first manage to see the big picture formed by small parts as a whole. Interpreting the big picture correctly to obtain the required information is possible with an organizational culture in which employees can demonstrate their creative talents. Opening up space for creative activities that will result in innovation is directly related to the vision of that enterprise because vision is not just a text that represents the desired future. Vision is the awareness and the attitude which an enterprise takes on about the future. Vision is not a future plan determined by the manager of interest, but a process that all employees must participate in. As a result, the fact that business managers have strategic thinking skills with all the elements is directly related to the competition perception and competitive position of the business. For this reason, it is predicted that strategic thinking affects the scope of competitive intelligence.

## H1: Strategic thinking affects the competitive intelligence context.

H1a: System thinking affects the competitive intelligence context.

H1b: Creativity affects the competitive intelligence context.

H1c: Vision affects the competitive intelligence context.

What businesses understand from the general conditions of the industry, which is called the big picture, is important. An industry becomes competitive through the behavior of the businesses in the industry before the structural features of that industry. For this reason, it is important to see the big picture, to create a forecast against strategic moves and competitive moves of competitors (Gatignon and Deshpande, 1994: 275). As a matter of fact, one of the main features of strategic thinking is developing foresight based on environmental analysis. Managers who have strategic thinking skills should be able to develop a forecast beyond the horizon by successfully performing current situation analysis (Hughes and Beatty, 2005: 43). In this sense, strategic thinking skill requires focusing on the right information at the right time and completing the transformation of businesses through information design (Garrat, 1995; 124). The disclosed information shows that there is a keen relationship between strategic thinking skills and factors such as planning and focusing, communication and analysis, information design and benchmarking, and the competitive intelligence process explained.

As important as competition analysis is in the strategy formulation process, it is the focal points of managers in the industry that will guide the competition analysis. In addition, the way in which the information that will contribute to the strategy formulation process is obtained and how it turns into strategic information is also important. So much so that managers need creativity in business processes for both operational and strategic moves. While it is a necessity to support strategic moves with information about competitors, the way information is obtained and its interpretation often depends on the use of the creative skills of the employees in the relevant unit. In addition, businesses have to predict which steps to take and when and how to achieve their visions, which creates a need for systematic information, especially about the competitive environment. In other words, in terms of business activities, vision is not a dream but an imagined reality. For this reason, we predict that strategic thinking will affect the competitive intelligence process.

## H2: Strategic thinking affects the competitive intelligence process.

H2a: System thinking affects the competitive intelligence process.

H2b: Creativity affects the competitive intelligence process.

H2c: Vision affects the competitive intelligence process.

Managers who have strategic thinking skills want to depict future situations. In addition, they try to steer competition and change because, besides its other functions, strategy is the art of determining attitude and behavior according to the complex structure of the competitive environment (Henderson, 1989: 140). In other words, the relationship between strategic thinking and environment is too extensive to be explained only by the relationship between the business and its external environment. Strategic thinking is the ability to look at the competitive environment through the eyes of the competitor, and to evaluate the components of yesterday, today and tomorrow as a whole. Such skills require the combination of cognitive ability and systematic knowledge, since businesses are living organisms that always interact with their environment. As a result, strategic thinking refers to the cognitive process that provides the collection. interpretation. transformation and evaluation of data that constitutes sustainable competitive а advantage of an enterprise (Haines, 2000: 35; Hughes and Beatty, 2005: 4). In this sense, it is seen that strategic thinking is a precursor of competitive intelligence and has a strong relationship with competitive intelligence.

Strategy is a structure built on the strengths and weaknesses of a business. The main question to be answered while building this structure is whether the enterprise creates an added value in line with its goals and objectives. In order to answer this question, it is necessary to look at the structure called strategy from a more holistic perspective (Jacobs, 2010: 4). This information highlights the importance of obtaining, interpreting and using information about competitors when needed in the strategy formulation process.

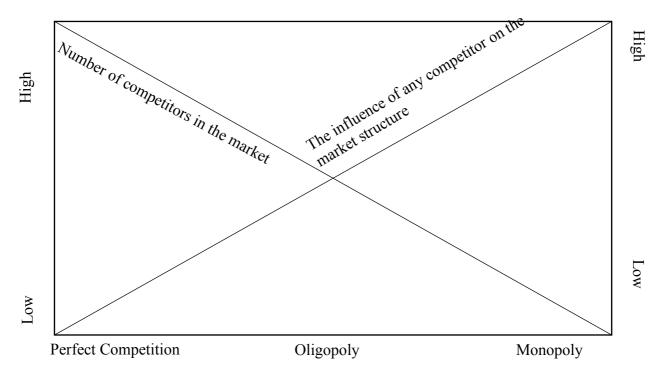


Figure 2 Continuity of market structure. Adapted from Cambell & Craig, Organizations and The Business Environment, 2005, p. 407.

While strategic decisions need competitor analysis, depicting a bird's eye view of the competitive environment in the mind and presenting the right perspective from the right angle is the strategic thinking skill. Therefore, it is predicted that strategic thinking affects competitive intelligence.

## H3: Strategic thinking affects competitive intelligence.

H3a: System thinking affects competitive intelligence.

H3b: Creativity affects competitive intelligence.

H3c: Vision affects competitive intelligence.

One of the main problems of strategic management is that it has not developed enough theory to describe the behavior of firms and industries. For example, although it is known that intense competition in the oligopoly market may change places with stability from time to time or new technologies and competitors may have a serious impact, it cannot be predicted when or what results will occur. This is because the oligopoly market matures as a result of the dynamic interaction between firms, government, labor, consumers, financial institutions and other environmental factors. For this reason, the industry structure in the oligopoly market does not affect firm behavior but the firm behavior determines the structure and competitive dynamics of an industry at the same time (Levy, 1989: 167; Bartlett and Ghoshal, 1998: 87). In general, the market structure represents a continuum where businesses supply their goods and services and customers demand, with perfect competition and monopoly markets at both ends. Within this continuum, the relationship between the total number of competitors and the impact of any competitor on the market is shown in Figure 2.

An oligopoly market is a type of market where there are few companies with a high interdependence and interaction, and many competitive tactics are used to eliminate competitors (Hall and Bensoussan, 2007: 259). In this sense, the automotive industry is an ideal example for evaluating the oligopoly market, with its small number of companies on a global scale and its differentiated products (Goldberg, 1995: 892). Indeed, Sturgeon et al. (2009) stated that the automotive industry is unique, and that a small number of Japanese, German and American companies dominate the industry on a global scale and direct the behavior of numerous small and medium-sized enterprises from automotive and other industries. In addition, Coban (2007) and Dastan (2016) stated in their studies on the automotive industry that the automotive industry has a strategic importance, which has the potential to lead other industries in the economy, and state that the development of this industry is fundamental to trade policy for countries.

Staying competitive within this market structure will be possible by transforming creative thinking skills into innovative products, having a vision that will design the future, and responding to the behavior of competitors with strategic moves. In conclusion. considering the structural characteristics of the industry such as the degree of differentiation of the product in the automotive industry and its high place in the customer budget, the need for substitutes and suppliers, and the intensity of non-price competition on a global scale, it can be said that the automotive industry is located on the side of the oligopoly market, close to the perfect competition market compared to the communication industry (Figure 2). Therefore, it is predicted that managers' strategic thinking skills are high in the automotive industry.

**H4.** In the automotive industry, managers have higher strategic thinking skills than in the communications industry.

Another feature of the oligopoly market is the imitative firm behavior that develops because of firm interdependence. Accordingly, for example, the price competition initiated by any firm to gain competitive advantage will be instantly responded to by other competitors who want to host in the industry (Levy, 1989: 170). In this sense, the communication industry is one of the industries characterized by high competition, depending on its speed in technological change (Ganesan, 2007: 1).

Explaining the imitative behavior of firms through price competition alone would be an incomplete perspective. Firms can imitate not only price increase or decrease policies, but also business processes and outputs. He and Mu (2012),comparatively analyzed the technological learning processes between Chinese national companies operating in the communication and automobile industries and foreign companies that invest directly in China. According to the results of the research, the automotive industry, compared to companies operating in the communication industry can develop their technological learning skills and increase their technology capacity by competing directly with foreign companies.

The communications industry had a lowcompetition market structure dominated by monopoly firms. However, the 1980s caused

structural changes in the communication industry, as in many industries, with the transformation of the market structure from monopoly to oligopoly from the transformative effect of technology as of the 1990s. Factors such as the privatization of state-controlled companies, the global widespread use of mobile phones and the internet network, and the redefinition of seller and customer relations meant a global spread of competition (Trauth and Pitt, 1992: 3; Wang et al., 2004: 325). A limited number of companies in the communication industry compete to increase their market share over a large number of customers. In this sense, short-term tactical decisions are as vital as the strategic decisions of companies. A formal competitive intelligence program has a determining effect on tactical decisions and a guiding power for the firm, especially in oligopoly market conditions where price competition is tight. As a result, the degree of differentiation of the commodity in the communication industry and its place in the customer budget is low. Considering the structural characteristics of the industry such as, for example, entry into the industry, and government permits, and the intense price competition on a local scale, it can be said that the communication industry is located on the side of the oligopoly market, but closer to the monopoly market compared to the automotive industry. Therefore, it is predicted that managers' competitive intelligence skills are high in the communication industry.

**H5.** In the communications industry, managers have higher competitive intelligence skills than in the automotive industry.

### 4. METHOD

# 4.1 Determination of research population and sample selection

Considering that it will be suitable for the measurement of the variables in the model, it was deemed appropriate to conduct the research in industries with oligopoly market characteristics. It is accepted that the intensity of competition is high in both the automobile and communication industry within the oligopoly market structure (He and Mu, 2012: 270). The research model investigates the effects of managers' strategic thinking skills on their competitive intelligence. In this respect, while determining the scope of the research, managers who will directly or indirectly contribute to strategic decisions and who have

The scope of the research consists of automotive dealer managers which are executives of five companies with the highest sales brands according to Automotive Distributors Association (www.odd.org.tr) in 2018 and for the communication industry, the provincial and regional directorates of the three Turkish companies with the most subscribers according to the 2018 data of the Information Technologies and Communication Authority (www.btk.gov.tr).

The sample size was calculated as 306 for the automotive industry and 306 for the communication industry (www.surveysystem.com/sscalc.htm), with a 5% margin of error within the confidence limits of 95%. Considering the density of executives in the industries, the length of the survey form and the time they will devote to the survey, 500 surveys were distributed separately to both industries. After the incomplete, incorrect and damaged questionnaires were removed, a total of 628 questionnaires, 318 in the automotive industry and 310 in the communication industry, were evaluated. It should be noted that the questionnaire used for the research was created for the mentioned doctoral dissertation and the ethics committee approval was obtained (Atatürk University Legal Consultancy dated 05.02.2019 and no. 48553601-000-E.19000433.057).

### 4.2 Data collection tools: competitive intelligence scale and strategic thinking scale

When examining the literature, a scale for measuring managers' skills in competitive intelligence in Turkey had not been developed. Although a limited number of competitive intelligence surveys had been developed in the international literature, it was not possible to translate and use the scales exactly due to legal differences in commercial (radical and competition law) and cultural differences. Therefore, a competitive intelligence scale was developed by utilizing studies including Day and Wensley (1988), Dickson (1992), Sawka, Francis and Herring (1996), Hamel and Parahalad (1996), Li and Calantone (1998), Prescott (1999), Guimaraes (2000), Teo and Choo (2001), Qiu (2007), Saayman et al. (2008), Dishman and Calof (2008), Wright et al. (2013), the academic studies of Köseoğlu et al. (2015), Hall and Bensoussan's (2007) academic book and Dugal (1996), Hesford (1998), Grooms (2001)(2012)and Chen's doctoral dissertations. In the questionnaire form, the items measuring competitive intelligence take place in the first 45 places and consist of two main (and six sub) dimensions. These dimensions are the competitive intelligence context and the competitive intelligence process. Reliability analysis was conducted to determine the reliability of the competitive intelligence scale. According to analysis results, the correlation for any item is not lower than 0.30, which is taken as the cut-off point. For this reason, there is no need to remove any item related to the scale from the scale. Generally, the reliability coefficient for the scale is 0.973. Thus, the scale is considered to be reliable since this value is higher than 0.70 which is the acceptable limit for reliability.

This strategic thinking scale has been used before and has been adapted from highly valid expressions. Strategic thinking was examined in three sub-dimensions in the study. These are systems thinking, vision and creativity. The system thinking dimension consists of nine statements created by Pisapia et al. (2005) and Timuroğlu (2010). The vision dimension consists of nine statements created by Timuroğlu (2010) and Lahti (2003) and the dimension consists of creativity seven statements created by Timuroğlu (2010) and Murphy and Reed (1991). In order to investigate the reliability of the strategic thinking scale, the internal consistency of the 25-item scale was investigated at the first stage. Considering the items in the scale, it is observed that the total score correlation for any item is not lower than 0.30, which is accepted as the cut-off point. For this reason, at this stage, the analysis continued without removing any items from the scale. Generally, the Cronbach alpha coefficient of the scale was 0.960 as a result of reliability analysis and found reliable as well.

### 5. ANALYSIS AND FINDINGS

### 5.1 Factor analysis findings of scales

In the second stage of the reliability and validity analysis of the strategic thinking and competitive intelligence scales, a varimax rotation exploratory factor analysis was applied. As a result of the second-level factor analysis applied to the strategic thinking scale, a three-factor structure was obtained by removing one item from the scale. It was observed that the three dimensions obtained explained 61.759% of the total variance, KMO (0.958) and the Barlett test was significant (p =.000) and the cronbach alpha value was 0.960. All fit index values of the structure (CMIN/DF: 4.77; GFI: 0.87; AGFI: 0.85; CFI: 0.98; NFI: 0.97; IFI: 0.98; RMSEA: 0.078) were determined to be at an acceptable level

The 28-item structure obtained as a result of the fifth-level exploratory factor analysis performed for the competitive intelligence scale was verified and a six-factor structure was obtained. The first three of the six factors refer to the scope of competitive intelligence, and the last three to the competitive intelligence process. It was observed that the obtained six sub-dimensions explained 62.220% of the total variance, KMO (0.943) and the Barlett test was significant (p =, 000) and the cronbach alpha value was 0.973. All fit index values of the structure (CMIN/DF: 3.74; GFI: 0.88; AGFI: 0.85; CFI: 0.98; NFI: 0.97; IFI: 0.98; RMSEA: 0.066) were determined to be at acceptable levels.

### 5.2 Hypothesis tests findings

In order to test the hypotheses that form the basis of the research and to determine the relationship between strategic thinking and competitive intelligence, a correlation analysis was performed on the data. Correlation coefficients and descriptive statistics showing the relationships between strategic thinking (system thinking, creativity, vision) and competitive intelligence (competition intelligence context and competitive intelligence process) are given in Table 1. Based on the findings it is seen that there is a positive and significant relationship between strategic thinking and competitive intelligence in general at the 99% confidence level.

two-step regression analysis А was conducted to determine the effect of strategic thinking and its dimensions on the competitive intelligence context, competitive intelligence process and competitive intelligence. In the first step, competitive intelligence context, competitive intelligence process and competitive intelligence are taken as dependent variables, and strategic thinking as an independent variable as a whole (sum of three factors). In the second step, the system thinking, creativity and vision factors that constitute strategic thinking are considered as independent variables, and the competitive intelligence context competitive intelligence process and competitive intelligence are taken as dependent variables. In terms of the reliability of the findings obtained in the regression analysis, the VIF and tolerance values of the independent variables were shown to determine whether there was a multilinearity problem and it was revealed that these values showed that there was no multilinearity between the independent variables. Detailed data on the findings are shown in Table 2.

First, the effect of strategic thinking on competitive intelligence context was examined. In the first step, strategic thinking as a whole has a significant effect (= 0.644; p <0.01) on the competitive intelligence context. By looking at these data, it can be said that H1 is supported. In the second step, the factors of strategic thinking (vision  $\beta = 0.320$ ; p <0.01: system thinking  $\beta = 0.198$ ; p <0.01 and creativity  $\beta = 0.196$ ; p <0.01) have a significant effect on the competitive intelligence context and H1a, H1b, H1c are supported.

Variables	x	$\mathbf{SS}$	1	2	3	4	5	6	7
1-System Thinking	3.93	0.64	1						
2-Creativity	3.79	0.81	0.70**	1					
3-Vision	3.85	0.75	0.79**	0.74**	1				
4-Strategic Thinking	3.86	0.66	0.91**	0.87**	0.94**	1			
5-Competitive Intelligence Context	3.85	0.65	0.64**	0.58**	0.66**	0.70**	1		
6-Competitive Intelligence Process	3.83	0.67	0.70**	0.62**	0.71**	0.75**	0.80**	1	
7-Competitive Intelligence	3.84	0.63	0.68**	0.62**	0.70**	0.73**	0.95**	0.93**	1

Table 1 Correlation analysis of variables and dimensions.

Factors	Dependent variable													
	Competitive Intelligence				Comp	petitive Int	elligence Co	<b>Competitive Intelligence Process</b>						
	β	t	β	t	β	t	β	t	β	t	β	t		
Strategic Thinking	0.717**	25.761	-	-	0.644**	21.635	-	-	0.727 **	26.509	-	-		
System Thinking			0.266**	5.757			0.198**	3.941			0.338**	7.430		
Creativity			0.182**	4.092			0.196**	4.055			0.140**	3.195		
Vision			0.335**	6.766			0.320**	5.970			0.316**	6.507		
Durbin Watson	1.367		1.368		1.447		1.447		1.433		1.437			
Tolerance			$\begin{array}{c} 0.363;  0.391; \\ 0.318 \end{array}$				0.363; 0.391; 0.318				0.363; 0.39	91; 0.318		
VIF			2.756; 3.1				2.756; 2.557; 3.145				2.756; 2.55	57; 3.145		
$\mathbb{R}^2$	0.5	15	0.515		0.428		0.429		0.529		0.532			
Adjusted R <sup>2</sup>	0.514		0.513		0.427		0.426		0.528		0.530			
F	663.614**		220.9	220.976**		468.062**		155.999**		702.702**		236.739**		

Table 2 The effect of strategic thinking and its factors on competitive intelligence, the competitive intelligence context and the competitive intelligence process.

Second, the effect of strategic thinking on the competitive intelligence process was examined. In the first step, it is seen that strategic thinking as a whole has a significant effect (= 0.727; p < 0.01) on the competitive intelligence process. Looking at these data, it can be said that H2 is supported. In the second step, the factors of strategic thinking (vision  $\beta$ = 0.316; p < 0.01: system thinking  $\beta$  = 0.338; p <0.01 and creativity  $\beta = 0.140$ ; p <0.01) have a significant effect on the competitive intelligence process and H2a, H2b, H2c are supported.

Finally, the effect of strategic thinking on competitive intelligence was examined. In the first step, it is seen that strategic thinking as a whole has a significant effect ( $\beta = 0.717$ ; p <0.01) on competitive intelligence. According to these data, it can be said that H3 is supported. In the second step, the factors of strategic thinking (vision  $\beta = 0.335$ ; p <0.01: system thinking  $\beta = 0.266$ ; p <0.01 and creativity  $\beta = 0.182$ ; p <0.01) have a significant effect on competitive intelligence and H3a, H3b, H3c are supported.

The results of the independent two-sample t-test performed in order to reveal whether the industry variable makes any difference in terms of strategic thinking and competitive intelligence are shown in Table 3. Based on the findings, the industry variable creates a significant difference (p < 0.01) in terms of system thinking, vision and strategic thinking. Accordingly, it can be said that H4 is supported

since the system thinking, vision and creativity scores of the participants working in the automotive industry are significantly higher than the scores of the participants working in the communication industry. On the other hand, it is seen that the industry variable creates a significant difference (p < 0.01) in terms of the competitive intelligence context, intelligence competitive process. and competitive intelligence. Accordingly, it can be said that H5 is supported since the competitive intelligence context, competitive intelligence process, and competitive intelligence scores of the participants working in the communication industry are significantly higher than the scores of the participants working in the automotive industry.

#### 6. CONCLUSION AND EVALUATION

This study was carried out to determine the effect of strategic thinking on competitive intelligence. In the literature review conducted for this purpose, it was seen that strategic thinking and factors affect competitive intelligence and its factors. For this reason, managers of the automotive and communication industries operating in the oligopoly market where the intensity of competition is high were selected as the sample and the effects of strategic thinking on the competitive intelligence were investigated by making an industrial comparison. For this purpose, by examining the strategic thinking and competitive intelligence models previously

developed in the literature, a research model was developed that reveals the relationship between strategic thinking and competitive intelligence. In line with the specified purposes, 628 executives operating in the automotive (318) and communication (310) industries were surveyed and the data obtained were evaluated and interpreted. It was possible to test the predictions for the purpose of the study by searching for answers to the research questions.

The first question in the research was if business managers think strategically in competitive sectors. In order to answer this the averages and question. frequency distributions of the statements in the strategic thinking scale were examined and the general average of 25 statements belonging to the strategic thinking scale was found to be 4.02. Accordingly, it can be said that the managers working in the automotive and communication industries have strategic thinking skills. Strategic thinking has been analyzed separately according to its factors. The general average of nine statements measuring system thinking, which is the first sub-dimension of strategic thinking, is 4.37, the general average of six statements measuring the creativity dimension is 3.78, and the general average of nine statements measuring the vision dimension is 3.84. The results obtained indicate that the managers exhibit system

thinking, creativity and vision behaviors, but they exhibit system thinking skills at a higher rate than others. This situation can be explained by the fact that there are many factors that managers should consider, especially in industries with high competition intensity.

Strategy was born out of the need to defeat the enemy. It is not possible to talk about the existence of a strategy without enemies. When considered in terms of business activities, the existence of a strategy requires the existence of a competitive environment (Horwath, 2006: 3). According to Ohmae, strategy is the most important element that differs from other business plans. The strategy is to gain competitive advantage. Namely, no strategy will be needed in an environment where there is no opponent. For this reason, it will be possible to talk about the existence of the strategy if it provides a sustainable advantage against the rivals (Ohmae, 1983: 36). According to Chandler, strategy is the determination of the long-term main goals and objectives of an enterprise, allocating the necessary resources for these goals and objectives, and preparing appropriate action plans (Chandler, 1990: 13). In the literature, it is seen that the unshakable integrity between strategy and competition encourages business managers to gain strategic thinking skills beyond classical strategic plans.

*Table 3* Findings regarding the strategic thinking and its factors with competitive intelligence, the competitive intelligence context and competitive intelligence process and in terms of industry variable. 1: One tail probability (right) 2: One-tail probability (left).

Factors	Industry	Ν	Mean	Standard deviation	t	Significance level	
System Thinking	Automotive	318	3.99	0.56	2.01	<b>0.022</b> <sup>1</sup>	
System Thinking	Communication	310	3.86	0.71	2.01	0.022	
Creativity	Automotive	318	3.82	0.76	1.14	0.1271	
	Communication	310	3.75	0.85	1.14		
Vision	Automotive	318	3.92	0.68	2.19	<b>0.015</b> <sup>1</sup>	
	Communication	310	3.77	0.81	2.19	0.015	
Strategic Thinking	Automotive	318	3.92	0.58		<b>0.035</b> <sup>1</sup>	
	Communication	310	3.80	0.73	1.82		
	Automotive	310	3.74	0.81			
CI Context	Communication	318	3.79	0.67		<b>0.013</b> <sup>2</sup>	
	Automotive	310	3.91	0.63	-2.23		
	Communication	310	3.96	0.68			
CI Process	Automotive	318	3.77	0.70	-2.07	<b>0.020</b> <sup>2</sup>	
	Communication	310	3.88	0.64	-2.07		
Competitive	Automotive	318	3.78	0.65	-2.37	<b>0.009</b> <sup>2</sup>	
Intelligence	Communication	310	3.90	0.60	-2.37		

When the literature is examined, it is seen that the automotive and communication industries are experiencing intense competition in the current century, and strategy and competition are the most fundamental dynamics of the industry. Rubenstein (2001) drew attention to the speed and extent of the transformation in the automotive industry, stating that in 1900 there were 2000 motor vehicles and 20,000 registered horses in the USA, and by 2000 the number of motor vehicles became more than the people with motor vehicle licenses. Shimokawa (2010), on the other hand, stated that the automobile industry in developed countries has at least ten percent of the gross national product, and therefore the automobile industry has reached the most important threshold in the history of the industry in the 21st century. Developments in the history of the communication industry parallel those of the automotive industry. From an industry structure that was almost without competition with the monopoly and mandatory regulations of the states before 1980, the transition led to a new identity, where the intensity of competition reached a very high level over the last quarter century (Trauth and Pitt, 1992).

Factors such as globalization, mass production speed, increasing market share, innovations in information and communication technologies, changing game rules with new actors in industries. and speed of environmental change push companies to be more innovative and future-oriented, although there are many other components that they should consider. Mintzberg et al. (2005) stated that the basic acceptance of strategy is that the actual situation experienced between the two actors in the market is called competition, and the ability to always remember that the competitors can do things better or differently, which is called strategic thinking skill. Therefore, in parallel with these explanations, it has been determined that the managers of the automotive and communication industries express their system thinking, creativity and vision skills.

The second question of the research is if business managers in competitive sectors attach importance to the competitive environment and competitor analysis. In order to answer this question, the averages and frequency distributions of the expressions in the competitive intelligence scale were examined. The general average of 28 expressions measuring competitive Dimensions intelligence was 3.83. of competitive intelligence activities of managers were evaluated separately. The general of expressions average 17measuring competitive intelligence context was 3.85 and general average of 11 expressions the measuring the competitive intelligence process was 3.83. Accordingly, it can be said that the automotive and communication industry executives who constitute the research sample attach acceptable level of importance to competitive intelligence activities.

Competition is a phenomenon related to the past, present and future of the business. Competition is the ability of a business to adapt its activities to the process of change occurring locally, nationally and globally in order to develop, grow, renew and even maintain its current status (Kök and Deliktaş, 2003: 17). In other words, competition is the ability of an enterprise to make more profit than other actors in the market or to realize all these in a sustainable order, beyond the longer survival. In this context, competitive intelligence predicts that businesses take three basic steps behaviorally: obtaining information about the competitor, interpreting and adapting (Li, and Calantone, 1998: 16). The information depicted here represents an indispensable resource and an economic value placed on the table of strategic decision makers in a processed form, beyond information obtained from any source. In other words, the information obtained through the activities of competitive intelligence guides the competitive position of the enterprise as well as the pioneer and guide of the innovation activities of the enterprise.

It should be noted that the information age creates changes in the roles and responsibilities of managers. Until a quarter century ago, perhaps the most fundamental problem of a manager was to make decisions under environmental uncertainty, while activities such as competitive intelligence make decision-making processes relatively easier. However, as an innovation created by the information age, managers who are in decision-making positions have to carefully create the information line that will affect their decisions (Poali-Scarbonch and Guenec, 2011: 208). Since the process that continues from the acquisition of data to its return to information is the precursor of the strategic decisions that will shape the future of the enterprises, it obliges the information to be obtained in a systematic order and through a healthy filter.

Another common feature of the automotive and communication industries, along with intense competition, is that the their innovation and competition activities in the industries move from the top to the bottom on vertical plane. In other words, the ล competitive moves of the administrative and sales units in both industries are limited. Regional and provincial directorates, dealers and sales representatives cannot go beyond the competition policies determined by the senior management or the brand executive board. However, this does not mean that competition is lacking in practice. The determining factor for both industries is that price competition is determined within the strategic plan of the senior management. In competitive moves other than price competition, dealers have a limited range of action, though. The important factor for top management is that the flow of information moves from bottom to top. In other words, in both industries, the most basic information that will guide strategic decisions is created with the data obtained from customers. Because in both industries, the substitution of the final product is available, albeit limited, so customer satisfaction must be provided at the highest level. Additionally, in both industries, the customer is not only the purchaser of the product, but also the first feedback provider on the product. In this sense, the feedback to be obtained from the customers and the information to be obtained about the industry through the customers should be processed in a systematic order and reported to the senior management. All these requirements are possible with either a formal competition intelligence unit or a formal knowledge management system.

According to the results of the analysis conducted on whether the industry variable has made any difference in terms of strategic thinking and competitive intelligence, the system thinking, vision and creativity scores of the participants working in the automotive industry are significantly higher than the scores of the participants working in the communication industry. The fact that competition in the automotive industry is widespread on a global scale and that there are many more components that managers must consider compared to the communication industry explains the results.

In addition, it is observed that the scores of participants working in the communication

industry on the competitive intelligence context of the competitive intelligence process have significantly higher scores than the participants working in the automotive industry. The communication industry is an industry with sharp and intense price competition compared to the automotive industry. Again, compared to the automotive industry, although it is not easy to enter the industry, the services offered take a lower place in the customer budget, facilitating customer permeability in the market. In this sense, the high average of competitive intelligence and factors in the communication industry is due to the natural conditions of the industry and is in harmony with the real conditions of the industry.

This study shows that strategic thinking affects competitive intelligence in competitive industries. Business managers must realize that we are living in the information age. While knowledge is a bridge between land, labor force, capital and entrepreneurs, which are accepted as basic production factors in one aspect, it is now the fifth production factor in our age with another aspect. In this sense, although strategic planning maintains its importance, it no longer has an effect that will provide strategic superiority to businesses. The distinguishing feature that will make a good strategic plan better is not the power of the text but the mental power that makes the planning. For this reason, managers who have strategic thinking skills need information in order to interpret the dynamics of competition correctly, to predict their competitive positions and to determine their competitive positions correctly. Knowledge is everywhere: countless and dynamic. For this reason, information that will reach business managers through only a filter will be useful. Strategic thinking skill comes into play at this point. It is the business manager who has strategic thinking skills, who will determine which data to focus on and who will be involved in the process from among the infinite data whose location, time and form are unknown. This will be a tool that starts with the mental process and turns into a final output with  $_{\mathrm{the}}$ help of information management systems, which will provide a competitive advantage to the business.

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