EFFECTS OF INDUSTRY 4.0 ON MARKETING STRATEGIES, AN APPLICATION ON TURKISH AUTOMOBILE INDUSTRY: A RESEARCH AMONG AUTO EXECUTIVES IN TURKEY

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ABSTRACT

Purpose - The study investigates the effects of Industry 4.0 on automobile marketing strategy in Turkey. It attempts to show whether a significant relationship among Industry 4.0 and market growth and cost reduction of auto brands in Turkey via IoT (Internet of Things).
Methodology – The study employed 37 automobile brands as sample from Turkey. 61 participants have responded the questionnaire. The research method utilized in the study was analyzed by sampling using the questionnaire as a data collection tool.
Findings - First, supported a summary of Industry 4.0 and auto marketing, it was found out the conception and behavior changes in several sorts of automobile brands, awakening stakeholders to the transforming forces that are reshaping their business and organization. Second, these quite reshaping organization changes marketing strategy deeply. The usage rate of digital channels has increased positively in automobile marketing strategies. Third, the usage rate of one-to-one marketing has increased positively in automobile marketing. And, the number of dealerships has affected negatively such a way that transforming sales points to delivery points. It is understood that government policies and sales points have a significant effect on market size.
Conclusion - The study contains valuable information and managerial implications for marketing professionals who want to implement different marketing strategies in the enlightening of Industry 4.0. First, supported a summary of Industry 4.0 and automobile marketing, it was found out the conception and behavior changes in several sorts of automobile brands, awakening stakeholders to the transforming forces that are reshaping their business and organization. Second, these quite reshaping organization changes marketing strategy deeply.

Keywords: Industry 4.0, marketing strategies, automobile marketing, IoT, auto brands.
JEL Codes: C38, L62, M31, M38

1.INTRODUCTION

The concept of Industry 4.0 appears for the first time in Germany in 2011 as a concept that has been studied in economic policies. It can be considered as a strategy related to strategy of high technology and internet systems. The concept of Industry 4.0 can be explained as the industrial revolution based on cyber-physical systems, the Internet of Things (IoT) and therefore concepts and technologies that support communication over the internet or involve continuous internet communication. This revolution means data exchange and unlimited interaction not only between consumer and consumer (C2C) but also between consumer and machine (C2M) or between machine and machine (M2M) (Roblek, 2016). In order to create high added value for companies and customers, it is still necessary to bring products and services customer-oriented (Kagermann, 2015). Industry 4.0 represents the proliferation of digitalization, the emergence of smart devices, in short, advanced digitalization (Lasi et al., 2014). Extensive fields such as artificial intelligence (AI), robots, the internet of things (IoT), autonomous tools, 3D printing technology, nanotechnology,

biotechnology, cloud storage and quantum computing can be referred to as the surprising combination of advancing technology breakthroughs (Schwab, 2016). Organizations must understand that their related products or services can provide a critical basis for identifying sociological and psychological factors that affect the customer's decision to use connected products. Some companies that have not yet passed from traditional marketing to contents marketing - while they are still within the development and promotion stages of internet-related technologies - now have the newest chances of change to align their marketing strategies with market competition and technology. Industry 4.0 will enable it to extend the accuracy of marketing strategies to vary or improve the connection between the customer and therefore the company, and can also enable it to get valuable content relevant to customers and to reply to them in real time. Accordingly, marketing departments can be prepared by developing new products and services or developing new marketing strategies to help protect old customers and acquire new customers. This thesis focuses on the importance and impact of Industry 4.0 on automobile marketing strategy and, accordingly, the creation of added value for marketing companies. This gap has been vanished by using TOE Research Model (technology–organization–environment) between marketing strategy suffering from Industry 4.0 within the automobile industry through examining the factors that impact the advanced technology adoption.

2.LITERATURE REVIEW

2.1. Industry 4.0 Review

History of industry revolutions has been described in the first part but to give a wider detail about the history of industry revolutions; the first industrial revolution began with the invention of the steam engine at the top of the 18th century, representing the mechanization. The second industrial revolution started at the start of the 20th century, since electrification and Frederik Taylor's principle of labor division and assembly-line production marked the large-scale production of standardized goods and therefore the beginning automation. Within the 1970s, the third industrial revolution drove forth automation and customized diversity of product and repair variants by extensively integrating information technologies (IT) and electronics into production planning systems, leading to the digitization (Kagermann et al., 2013). This concept has launched the fourth technological revolution, which is predicated on the concepts and technologies that include virtual-physical systems, internet of things (IoT) supported communication via internet that permits endless interaction. Hence, the exchange of data not only between human to human and human to machine but also between machine to machine are accelerated. (Roblek V., 2016). It enables the creation of completely new products and new business models in the automobile industry, especially on the production line with IoT. (Dominici et al., 2016). Firms must consider that their products or services can provide a critical basis for identifying sociological and psychological factors that affect the customer's decision to use connected products. Some organizations that have not yet passed from traditional marketing to contents marketing – while they're still within the development and promotion stages of internet-related technologies – now have the newest changes to align their marketing strategies with market competition and technology. Accordingly, firms can prepare strategies such as new product or new service developments and new marketing strategy. These will help them to keep old customers and find new customers. Technology begins to determine a new and different absence. A positive appearance of Industry 4.0 is that value creation is influenced by efficiency and new business models and gains in the new marketing strategy. However, technological change has positive and negative effects on both employee and business, marketing strategies.. There are some concerns that Industry 4.0 will trigger technological unemployment at the end of the day. Accordingly, work profiles in many workplaces will vary. However, it will be necessary to make changes in training and employee development as well.

2.2.Industry 4.0 and IoT

The Internet of Things is being a part of the Future Internet. One of the principles of Industry 4.0 is to gather the maximum amount information as possible in real time from all the various parts of the value chain. Additionally, when collecting data, data should be collected and analyzed with computerized machines that help reduce production costs and improve quality in order that it is as efficient, fast and versatile as possible. "To achieve such improvements, IoT systems and Cyber-Physical Systems (CPSs) are essential because they permit the gathering, processing and storage of knowledge obtained in real-world objects"(T. M. Fernández et al., 2018) . Additionally, such systems can find and track related items within the factory information system, supplier system, customer data as well as marketing and sales data systems, so that they can exchange data. However, it is possible with IoT that Industry 4.0 devices can communicate autonomously among themselves and coordinate with one another and with other remote systems on the web. While detecting hazards or obstructions on the road as visualized, the vehicle also generates appropriate messages containing geographic locations and emergency call system and more application-related information. These messages are often broadcast immediately to all or any other vehicles within the communication range and may be stored, evaluated and transmitted to them. Smart cars implement more functions and services than traditional ones and that they expand

the value chain. On the one hand, because of automatic driving technology, in-car applications like freedom of movement, mobile office, social media and entertainment are improved and used more frequently. Smart vehicles connect with other objects (things), including catering, tourism, logistics and home via IoT. Services such as online booking, travel advice, smart logistics management and smart home control are all accessible from the vehicle via IoT. Marketing also must draw a replacement path within the light of those developments. Automobile companies can draw customer portraits and deliver advertisements supported data covering their owners' information, consumption habits, driving habits, vehicle conditions, etc. During this way, marketing costs are expected to decrease and brands can create more loyalty among customers (Xu Kuang et al., 2017). This survey was looked for the effects of Industry 4.0 on marketing strategy of Turkish Auto Industry and according to marketing strategy, it had been also looked for the change of marketing costs alongside marketing strategy.

2.3. IoT from Marketing View

According to the blog of i-scoop via internet, IoT affects all industries rapidly virtually. IoT is the interconnectivity of our digital devices such a way that gives endless opportunities for brands to concentrate and answer the requirements of their customers- with the right message, at the right time, on the right device. And it is expected that by 2020, the worldwide marketplace for IoT solutions are going to be $7.1 trillion. It is estimated that IoT connected devices are going to be +13 billion by 2020. And i-scoop also gives a view that the marketing power of the Internet of Things is connectivity for better customer interactivity . There are two main elements to know the IoT regarding IBM. These are new generations of IoT and big data. IBM called the future generation of IoT as Cognitive IoT. IBM said that Cognitive IoT technologies will make it possible for business leaders to know what is happening within the world more deeply and comprehensively and it will make the items or businesses operate more efficiently and therefore the business leaders could better cope with the activities during the business processes. Businesses need samples like natural language processing, machine learning and video, image and text analytics. These quite new technologies help the marketing managers understand what is actually happening and what the particular needs from the purchasers are via data produced by machine learning algorithms. On the other hands, A World Economic Forum report published in September 2015 identified 21 tipping points. Tipping point means that the moments when specific technological shifts hit mainstream society. They will shape our future digital and hyper-connected world. All are expected to take place over the next 10 years, thereby witnessing the profound changes triggered by the fourth industrial revolution. According this report, one of the tipping points is IoT (Internet of Things). Experts suggest that, within the future, every (physical) product can be connected to communication infrastructure, and sensors everywhere will allow people to completely perceive their environment. The other tipping point is Smart Cities. Many cities will connect services, utilities and roads to the online. These smart cities will manage their energy, material flows, logistics and traffic. Some progressive cities are already implementing many new data-driven services, including intelligent parking solutions, smart garbage collection and intelligent lighting. Therefore, these systems can be used while the selling and marketing of the vehicle. The other tipping point is Driverless Cars. Trials of driverless cars from large companies like Audi and Google are already getting involved. These vehicles can potentially be more efficient and safer than cars with people behind the steering wheel. Moreover, they might reduce congestion and emissions, and extend their existing models for transportation and logistics. It now suggests that the selling and marketing of the vehicle will be made on this technology.

2.4. TOE Framework Review

Technology has changed the world dramatically as mentioned in above sections (Wook Ok, 2017) and some new concepts have been introduced accordingly to the technology throughout the end of 20th of century and the beginning of 21st century. One of these concepts is Technology-organization-environment (TOE). Additionally, to the terms like IoT, TOE term is another concept that has been introduced couple of years ago and both adopted by business world and business literature. Technology-organization- environment concept, defined three factors of a business context that effect the process that adopts and ensures innovation of technology: firstly, the organizational context, secondly technological context, and finally environmental context. Organizational context explains business size; centralization, formalization, and complexity of its management structure. Technological context defines all the internal and external technologies related to the business which also means existing technologies within the firm, as well as the range of available technologies in the market. Environment context is the field that a business operates its business industry, competitors, access to resources supplied by others, and dealings with government (Tornatzky and Fleischer, 1990). The advantage of the TOE framework is that it is a simple empirical application that gives a robust theoretical background and useful guidance for researchers. Researchers are to apply TOE framework to research the adoption of varied technologies. Maduku et al., (2016) suggested that competitive pressure, complexity, top management, relative advantage, financial resource, cost reduction, employee capability, customer pressure had a big positive impact on mobile

marketing supported the TOE framework. Saldanha and Krishnan (2012) found that enormous firms have a far better degree of adoption and firms in highly knowledge-intensive and innovation-intensive industries have a far better degree of adoption.

3.DATA AND METHODOLOGY

3.1. Sampling and Data Collection

The methodology approach of the study is predicated on the theoretical and methodological research of the contemporary marketing literature and therefore the conclusions of the questionnaires of auto brand managers. This study is predicated on an exploratory research utilizing case study method. Questionnaires administered with 37 automobile brand managers in Turkey. Data are analyzed with descriptive analysis. The research method utilized in the study was analyzed by sampling using the questionnaire as a data collection tool. It includes closed questions, measured with a nominal and Likert scale. 61 managers provided complete and useful answers to the present research. The collected data were analyzed with the Statistical Package for the Social Sciences (SPSS) software using with reliability index, frequency tables and factor analysis, PCA (Principal Component Analysis) and regression analysis (ANOVA). A survey instrument was developed to research the hypotheses. The questionnaires were designed through discussions with academicians and experts from automotive companies. The fact that the person who prepared this study has 25 years of automotive experience also contributed to the survey. 44 related questions were finalized using the seven-point Likert scale. 11 questions are related with demographic. So, the total questions asked to the participants at questionnaire form is 55. All the questions and items were presented both in English and Turkish to decrease any misunderstanding, and questionnaire form was built on googleform.com , a professional questionnaire website. The e-mail is sent to the participants to tell about the aim of this study and therefore the data collected are mainly for research only. Then, the online questionnaire website link was sent to guide targeted participants to fill out the survey. At the end of the day, a total number of 61 returns were received out of 37 auto brand managers, of which 61 questionnaires were valid with a response rate of 82 percent.

Internet of Things (IoT), market growth and cost reduction are the dependent variables of this study. Transport routes & infrastructure, one-to-one marketing, sales point, car cost, government policies are independent variables of this study. According to the research model, all seven independent factors affect IoT, market growth and cost reduction directly.

H1a : The predicted theoretical and practical developments in the local electronic highway systems will directly and positively affect "cost reduction" and "market growth".

H1b : The predicted theoretical and practical developments in the local electronic highway systems via IoT will directly and positively affect "cost reduction" and "market growth".

H2a : Intensive usage of one-to-one marketing factor will directly and positively affect "cost reduction" and " market growth".

H2b : Intensive usage of one-to-one marketing factor via IoT will indirectly and positively affect "cost reduction" and " market growth".

H3a : Predicted evolving of the sales point factor will directly and positively affect "cost reduction" and "market growth".

H3b : Predicted evolving of the sales point factor via IoT will indirectly and positively affect "cost reduction" and "market growth".

H4a : The gradual increase in vehicle production cost factor will directly and positively affect "cost reduction" and "market growth".

H4b : The gradual increase in vehicle production cost factor via IoT will indirectly and positively affect "cost reduction" and "market growth".

H5a : Predicted incentives and tax benefits in government policies will directly and positively affect "cost reduction" and "market growth".

H5b : Predicted incentives and tax benefits in government policies via IoT will indirectly and positively affect "cost reduction" and "market growth".

Factor and Reliability Analysis and hypotheses testing are mentioned on Section 4.

3.2. Demographics

It is found that the majority of respondents are in their early middle age (49%), have at least bachelor degree education (65%) and have working experience of more than 15 years (67%). Most of the respondents (83%) are working in the sales/marketing department. These findings indicate that respondents have knowledge of the advanced techniques and they are capable to answer the questions about Industry 4.0. In addition, it was found that female accounts for 20% of total responses. It is found that the field of business are 82% distributors. And, the percentage of national firms is 65% and the percentage of international firms is 35%. Demographics results are showed in Table 1.

Table 1: Profile of Respondents

Demographics	n	%	Demographics	n	%
Gender			Working Experience		
Male	49	%80	5-10	2	%3
Female	12	%20	10-15	18	%30
			15	41	%67
Department			Age		
Marketing	10	%17	<40	25	%41
Sales/Marketing	51	%83	40-50	30	%49
			50>	6	%10
Title			Field of Business		
Manager	41	%67	Producer	11	%18
Senior Manager	20	%33	Distributor	50	%82

4. FINDINGS AND DISCUSSIONS

"Firms aim to maximize their profits in order to survive within the market against their competitors. So as to realize this, they need to either cut their costs or increase their market share" (Richard Cyert, et al., 1963). Accordingly, the marketing strategy are often built on these two items. In the proposed research model of this survey, the marketing strategy is predicated on these two items. However, the possibility of an intermediate or regulatory effect of IoT was also evaluated. General reliability analysis for all questions was performed by SPSS. It had been observed that there was no problem. Reliability analysis was performed for the individual sub-dimensions as well. The Sales Point scale came at the complete limit, the others were quite higher. Factor analyzes and rotations of variables were performed by SPSS. A total of three questions, one in the Cost Reduction, one within the Sales Point and one within the Government Policies dimensions, dropped down due to the factor could not loaded. These questions were likely confused in the mind of the respondents. All independent variables were measured on two dependent variables according to the correlation matrix. The effects of all independent variables on IoT were examined. The effect of all independent variables (IoT) on dependent variables was examined. IoT factor seems to have no intermediate or regulatory effects. In regression analysis, Sales Point directly affects the Market Growth. Other variables have little effects. Only the Government Policies factor has some influence, but less than the other factor. On Cost Reduction, almost no factor other than the Government Policies factor makes sense.

4.1. Factor and Reliability Analysis

To test the assumptions of the factor analysis, the multiple regression analysis was applied using IBM SPSS 22.0 software. A reliability test was performed on six variables. "The aim of reliability test was to measure the dependability of the questionnaire results for further analysis, especially the internal consistency of the research" (Lin D., 2018).

Cronbach's α coefficient test was chosen to assess the reliability of the data. Cronbach's αs for all variables were above 0,70, which ensures that the consistency level of all investigated items is reliable. Sekaran et al., (2011) shows that the threshold value for reliability analysis is 0,700 and the scales above this value are reliable. When the results of the research are evaluated within this framework, it is seen that all the sub-dimensions in the research are above this threshold value. Thus, other analyzes were started without leaving any academic suspicion. The Sales Point scale came at the complete limit, the others were quite higher. It is 0,695. But the others are above 0,70.

Cronbach's Alpha is a measure of reliability that is a lower bound for the true reliability of the survey. The computation of Cronbach's alpha is supported the number of items on the survey and the ratio of the average inter-item covariance to the average item variance. Alpha value of a scale to be accepted as reliable by Cronbach Alpha must be at least 0,70 level. Cronbach's alpha value of less than 0,70 scales are unreliable or unreliable scale. According to the results of SPSS software, the total value of the reliability of the survey is Alpha value was found as 0,965. It is understood that the research has high reliability because it is greater than α > 0,70. The Cronbach Alpha value is made for both all variables and all individual variables. All variables except for only sales are greater than α > 0,70. Cronbach's Alpha Results are showed in Table 2.

Table 2: Cronbach's Alpha Result

Variables	One-to-one Marketing	Transport Routes& Infrastructure	Car Cost	Sales Points	IoT	Government Policies	Cost Reduction	Market Growth
Cronbach's Alpha	0,911	0,753	0,810	0,695	0,800	0,747	0,748	0,830

4.2. Hypotheses Testing

According to the description in Research Methods for Business by Sekaran et al., (2011), Pearson correlation matrix will indicate the direction, strength, and significance of the bivariate relationships among all the variables that were measured at an interval or ratio level. Pearson Correlation is a measure of linear association between two variables. Its values of the coefficient of correlation range from -1 to 1. The sign of the coefficient indicates the direction of the connection, and its measure quantity indicates the strength, with larger absolute values indicating stronger relationships. Correlation is significant at the 0,01 level (2-tailed). Sig (2- tailed), the probability of obtaining results as extreme because the one observed, and in either direction when the null hypothesis is true. A two-tailed significance level tests a null hypothesis during which the direction of an impact is not specified in advance p < 0,05. Since there is "sig (2-tailed) p <0,05" in the correlation matrix, it indicates that there is a significant relationship among the variables. The line Pearson Correlation value, which shows the direction and strength of the relationship, was positive for all variables. Therefore, it shows that there is a positive strong relationship among all variables. The result obtained supports the hypotheses. Pearson Correlation value of Transport Routes& Infrastructure is 0,855, it means it has quite higher correlation (0,855) among One-to-One Marketing and Transport routes& Infrastructure factors. IoT factor has a higher correlation with Sales Point and Car Cost. Government Policies factor has also higher correlation value with Car Cost, Sales Point and IoT factors. Market Growth has higher correlation value with Sales Point, Government Policies and Cost Reduction. A Pearson correlation test was conducted to examine the feasibility to use multiple regression methods. The results of the Pearson correlation validate the mutual correlation of variables as significant at the 0,01 level. Correlation matrix is showed in Table 3.

The regression coefficients indicate the relative importance of each of the independent variables within the prediction of the dependent variable. Each variable has a positive regression coefficient at a significance level less than 0,01, indicating that all the variables. Thus, rejected hypotheses are:

H1a : The predicted theoretical and practical developments in the local electronic highway systems will directly and positively affect "cost reduction" and "market growth".

H1b : The predicted theoretical and practical developments in the local electronic highway systems via IoT will directly and positively affect "cost reduction" and "market growth".

H2a : Intensive usage of one-to-one marketing factor will directly and positively affect "cost reduction" and " market growth".

H3b : Predicted evolving of the sales point factor via IoT will indirectly and positively affect "cost reduction" and "market growth".

H4a : The gradual increase in vehicle production cost factor will directly and positively affect "cost reduction" and "market growth".

Confirmed hypotheses will be explained in step by step as following section. According to the coefficients table of the regression analysis, the significant value p<0,05 indicates that there are significant relationships among the variables. The coefficients table of Cost Reduction Factor, p value for Government Policies is 0,037 that is less than p<0,05. There are significant relationships with only Government Policies. Except Government Policies Factor hypothesis all other hypothesis has been rejected as their p value are higher than desired value of 0,05. Beta value of 0,483 represents a positive and intermediate level of effect. Hence, Government Policies Factor has a significant and intermediate positive effect on Cost Reduction via IoT. So, H5a is confirmed. Predicted incentives and tax benefits in government policies will directly and positively affect "cost reduction" and "market growth".

On the other hand, Government Policies Factor has a significant and intermediate positive effect on Cost Reduction without IoT. Hence, with and without IoT, there is positive effect on Cost Reduction from Government Policies.

The coefficients table of Market Growth Factor, p value for Government Policies is 0,046 and p value for Sales Point is 0,002, both of them are less than p<0,05 value. There are significant relationships with Government Policies and Sales Point and Market Growth via IoT. oto_FACTOR, transport_FACTOR, cost_FACTOR and iot_FACTOR hypothesis has been rejected as their p value are higher than the desired p value of p>0,05. On the other hand, gov_FACTOR and sales_FACTOR has been confirmed as their p values as smaller than the desired p value of p>0,05, so, H5a and H3a are confirmed. Confirmed H3a hypothesis is as follows: Predicted evolving of the sales point factor will directly and positively affect "cost reduction" and "market growth". Confirmed H5a hypothesis is as follows: Predicted incentives and tax benefits in government policies will directly and positively affect "cost reduction" and "market growth".

There are significant relationships with Government Policies and Sales Point and Market Growth. The coefficients table of Market Growth Factor, p value for Government Policies is 0,010 and p value for Sales Point is 0,001, both of them are less than p<0,05 value. There are significant relationships with Government Policies and Sales Point and Market Growth. Beta value for Sales Factor is 0,410 represents a positive and intermediate level of effect.

The coefficients table of IoT Factor, p value for Government Policies is 0,002 and p value for One-to-One Marketing is 0,18 and p value for Car Cost is 0,044, all of them are less than p<0,05 value. There are significant relationships among Government Policies, One-to-One Marketing and Car Cost. oto_FACTOR and gov_FACTOR has been confirmed as their p values are smaller than the desired p value of p>0,05. Thus, H2b, H4b and H5b are confirmed.

Confirmed H2b hypothesis is as follows: Intensive usage of one-to-one marketing factor via IoT will indirectly and positively affect "cost reduction" and "market growth".

Confirmed H4b hypothesis is as follows: The gradual increase in vehicle production cost factor via IoT will indirectly and positively affect "cost reduction" and "market growth". Confirmed H5b hypothesis is as follows: Predicted incentives and tax benefits in government policies via IoT will indirectly and positively affect "cost reduction" and "market growth". transport_FACTOR and sales_FACTOR hypothesis has been rejected as their values are higher than the desired p value of p>0.05. H1b and H3b are rejected.

Rejected H1b: The predicted theoretical and practical developments in the local electronic highway systems via IoT will directly and positively affect "cost reduction" and "market growth".

Rejected H3b: Predicted evolving of the sales point factor via IoT will indirectly and positively affect "cost reduction" and "market growth".

Table 3: Correlation Matrix

		oto_FACTOR	transport _FACTOR	cost_FACTOR	sales_FACTOR	IoT_FACTOR	gov_FACTOR	cr_FACTOR	market_ FACTOR
oto_FACTOR	Pearson Correlation	1	,855**	,699**	,688**	,722**	,637**	,481**	,671**
	Sig. (2-tailed)		,000	,000	,000	,000	,000	,000	,000
	N	61	61	61	61	61	61	61	61
transport_FACTOR	Pearson Correlation	,855**	1	,782**	,717**	,722**	,736**	,546**	,753**
	Sig. (2-tailed)	,000		,000	,000	,000	,000	,000	,000
	N	61	61	61	61	61	61	61	61
cost_FACTOR	Pearson Correlation	,699**	,782**	1	,721**	,802**	,814**	,589**	,745**
	Sig. (2-tailed)	,000	,000		,000	,000	,000	,000	,000
	N	61	61	61	61	61	61	61	61
sales_FACTOR	Pearson Correlation	,688**	,717**	,721**	1	,792**	,809**	,603**	,838**
	Sig. (2-tailed)	,000	,000	,000		,000	,000	,000	,000
	N	61	61	61	61	61	61	61	61
IoT_FACTOR	Pearson Correlation	,722**	,722**	,802**	,792**	1	,841**	,613**	,792**
	Sig. (2-tailed)	,000	,000	,000	,000		,000	,000	,000
	N	61	61	61	61	61	61	61	61
gov_FACTOR	Pearson Correlation	,637**	,736**	,814**	,809**	,841**	1	,684**	,833**
	Sig. (2-tailed)	,000	,000	,000	,000	,000		,000	,000
	N	61	61	61	61	61	61	61	61
cr_FACTOR	Pearson Correlation	,481**	,546**	,589**	,603**	,613**	,684**	1	,803**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000		,000
	N	61	61	61	61	61	61	61	61
market_FACTOR	Pearson Correlation	,671**	,753**	,745**	,838**	,792**	,833**	,803**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	
	N	61	61	61	61	61	61	61	61

5. CONCLUSION

For the first time, such this research was conducted on marketing strategy with wide participation among the members of Automotive Distributors in Turkey (ODD members). It was investigated for the first time that automobile marketing strategies have a significant relationship with the factors researched by this thesis. As a marketing strategy, the thoughts of the brand managers were investigated in terms of market size and cost reduction. Summary of the attitudes of the brand managers related with marketing strategies under the influence of industry 4.0 and IoT was given below. Through a case study, this study has several practical and theoretical contributions attempting to fill this gap. First, supported a summary of Industry 4.0 and auto marketing, it was found out the conception and behavior changes in several sorts of automobile brands, awakening stakeholders to the transforming forces that are reshaping their business and organization. Second, these quite reshaping organization changes marketing strategy deeply. The usage rate of digital channels has increased positively in automobile marketing strategies. Third, the usage rate of one-to-one marketing has increased positively in automobile marketing. And, the number of dealerships has affected negatively such a way that transforming sales points to delivery points. According to the research results, it is understood that government policies and sales points have a significant effect on market size. That is, when the government makes a positive

change in taxes on automobiles, the market shares of brands increase positively. However, a positive increase in the number of sales points, namely authorized dealers, leads to a positive increase in the market share of the brand. In contrast, a change in government policies only affects cost reduction. It can be said that no factor other than government policies has a significant effect on cost reduction. One-to-one marketing has a significant impact on IoT. That is, the IoT usage rate will increase one-to-one marketing usage rate. Accordingly, there is a significant relationship between one-to-one marketing and transport routes & infrastructure. That is, if we use one-to-one marketing with IoT and transport routes & infrastructure, automobile sales will increase and the brand's market shares will increase accordingly. In addition, intensive use of one-to-one marketing will have a positive effect on reducing marketing costs. It has been understood that there is a positive relationship between vehicle production costs and brand market size and cost reduction. So, when you reduce vehicle costs with the help of IoT, the brand's market share will increase and costs will decrease. Industry 4.0 and IoT shows that we are entering a phase where we need to rethink what is expected or desired from every company and every person, with the help of internet-connected devices. For this reason, IoT technology creates completely new products, new marketing strategy, new services and new business models that promise profits in almost all industries. Companies that produce smart vehicles are given the opportunity to provide direct consumer experience. Thanks to Industry 4.0, the consumer will be contacted directly and will provide evaluation; however, perceived values will ensure that the entire service group associated with the management of connected vehicles will focus on real customer value. Industry 4.0 results in a rapid transformation on marketing strategies. At the editing phase of the thesis, Covid-19 outbreak affecting the whole world and Turkey, are affected negatively tourism and especially the automobile industry. Automobile dealers and services are closed and their employees have been taken to free administrative leave according to the decisions taken by the government in order to stop the epidemic. Accordingly, customers no longer have not preferred visit showrooms. As a result of these reactions, the usage rate of digital channels has been increased positively in automobile marketing strategies. Additionally, the frequency of using virtual media has been increased positively in after-sales.

6. LIMITATIONS

There are some limitations during this study. First, the highest growth rate and the similar application could not be taken into consideration and compare survey results headed for a single country between different countries with data on cases during this study that focuses on the skills of the automobile industry in Turkey. Second, because there is a sort brief history between industry 4.0 and automobile marketing strategy, the right quantitative analysis would be difficult right now to explain the economic effects in this new value chain, as the relevant market data is almost nonexistent. Therefore, for future research, an in-depth comparison of different automobile marketing strategies can be made for large countries such as the USA, the European Union and Japan, and can also explore future mobility and industry's key political and social factors. However, this transformation has cooperation in both the manufacturing industry and the Internet business, which may create new challenges for future administrative and commercial movements. Hence there are more questions needed to be discussed like the following: *What quite organization form or business model will dominate in automobile industry for the future? How will new entrants make marketing strategy to introduce their latest products and services that have never been considered before?* These related questions might be a study for the future research.

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