

THE ROLE OF IN-HOUSE AUTOMOTIVE DESIGNERS IN THE AUTOMOTIVE INDUSTRY IN TURKEY

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**Approval of the thesis:**

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## **ABSTRACT**

### **THE ROLE OF IN-HOUSE AUTOMOTIVE DESIGNERS IN THE AUTOMOTIVE INDUSTRY IN TURKEY**

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This thesis investigates the roles of automotive designers currently working in the design departments of companies in the automotive industry in Turkey. The thesis aims to give a full account of the roles that in-house automotive designers currently partake in companies, how they are situated in the companies and their relationships to other participants in the design process. The study includes face-to-face interviews conducted with a total of 24 participants, including in-house automotive designers, automotive design managers, and automotive industry experts, on the subject of automotive designer roles and other factors that influence the situation of the automotive designer in automotive industry in Turkey. Various roles of automotive designers in the companies in the automotive industry in Turkey were identified. However, a clearly defined and accepted role for the automotive designer is not present in the automotive industry. The visions and goals of the automotive industry in Turkey require the presence of a strong automotive design presence for the automotive industry in Turkey to compete in the global automotive industry. The study suggests that the role of the automotive designer needs to be defined as a creator and as a strategy definer for these visions and goals to be achievable by the automotive industry in Turkey. The study concludes with strategic recommendations for the automotive industry in Turkey to achieve higher success through automotive design and automotive designers.

Keywords: Automotive designer, automotive designer roles, automotive industry in Turkey

## ÖZ

### TÜRKİYE'DEKİ OTOMOTİV ENDÜSTRİSİNDE FIRMA BÜNYESİNDE ÇALIŞAN OTOMOTİV TASARIMCILARININ ROLÜ

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Bu tez, Türkiye'deki otomotiv endüstrisindeki firmaların tasarım birimlerinde çalışan otomotiv tasarımcılarının rollerini incelemektedir. Tez, firma bünyesinde çalışan otomotiv tasarımcılarının rollerini tümüyle yansıtmaya, firma içinde nasıl konumlandırıldıklarını anlatmaya ve tasarım sürecine katılan diğer paydaşlarla olan ilişkilerini açıklamayı hedeflemiştir. Tez, Türkiye'deki otomotiv endüstrisinde firma içinde çalışan otomotiv tasarımcılarının rollerini ve otomotiv tasarımcılarının durumunu etkileyen diğer faktörleri incelemek üzere, firma içi çalışan otomotiv tasarımcıları, otomotiv tasarımı yöneticileri, ve otomotiv endüstrisi uzmanlarını içeren 24 kişiyle yapılan yüz yüze görüşmeleri içermektedir. Türkiye'deki otomotiv endüstrisinde firma içinde çalışan otomotiv tasarımcılarının çeşitli rolleri olduğu saptanmıştır. Ancak, açık bir şekilde tanımlanabilecek ve endüstrinin ortak olarak kabul etmiş olduğu bir rol bulunamamıştır. Türkiye'deki otomotiv endüstrisinin vizyon ve hedeflerinde belirlediği küresel rekabete ulaşabilmesi için güçlü bir otomotiv tasarımı anlayışının gerekliliği saptanmıştır. Çalışmanın önerisi, Türkiye'deki otomotiv endüstrisinde firma içinde çalışan otomotiv tasarımcılarının yaratıcı ve strateji belirleyici rolleri üstlenmesiyle endüstrinin kendine tanımladığı vizyon ve hedeflere ulaşabileceğidir. Tezin son bölümünde, Türkiye'deki otomotiv endüstrisinin otomotiv tasarımını kullanarak daha başarılı olabilmesi için stratejik tavsiyeler getirilmiştir.

Anahtar Kelimeler: Otomotiv tasarımcısı, otomotiv tasarımcısının rolleri, Türkiye'deki otomotiv endüstrisi

Her Őeye rađmen...

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## LIST OF ABBREVIATIONS

BRIC	Brazil, Russia, India, and China
ETMK	Industrial Designers Society of Turkey
EU	European Union
ICSID	International Council of Societies of Industrial Design
IDSA	Industrial Designers Society of America
METU	Middle East Technical University
NPD	New Product Development
OBM	Original Brand Management
ODM	Original Design Manufacturer
OEM	Original Equipment Manufacturer
OSD	Automotive Manufacturers Association
OSM	Original Strategy Management
R&D	Research and Development
TRIAD	NAFTA, the European Union and the industrialized Eastern Asia countries (Japan, Taiwan, South Korea, Hong Kong, Singapore)



## CHAPTER 1

### INTRODUCTION

#### 1.1. Motivation of the Study

The Turkish automotive industry is a multi-billion dollar industry. It is also the industry with highest sales profit and highest export profit in Turkey (OSD, 2011). This, combined with the fact that it is an industry that creates brands that symbolizes the originating country, makes it an important field to investigate.

Turkey, a rapidly developing country that is the second biggest country, in terms of population, (Communication Department of the European Commission, 2011) in Europe (Germany being the first) and once at the brink of manufacturing its own completely original vehicles, has not done so. Since those times, many companies have joined the ranks of the automotive industry in Turkey. Many of these companies produce and export vehicles but, none of these companies have manufactured vehicles that are completely original in design.

Turkey, especially with the ongoing integration with European Union countries, has been producing and exporting high number of vehicles (OSD, 2011). Even though this success in high number of manufactured and exported vehicles was interrupted with the financial crisis, which began in 2008 and continued in 2009, the industry was able to recover much of its power during 2010. After the financial crisis that struck most of world, the EU countries had decreased their spending and the automotive industry in Turkey was forced to increase its attention towards the local market. The increased sales of the local market have given the industry the much needed fuel to continue its production at a stable rate.

With the lessening effects of the financial crisis, the Turkish government issued a strategic plan to increase the role of Research and Development in the automotive industry in Turkey. This plan summarizes its mission as “To increase the sustainable competitive power of the automotive industry and to transform it into a high added value industry that predominantly uses advanced technology” (Ministry of Science, Industry and Technology, 2011). With this plan, the government aims to achieve five goals by 2014;

- Improving the R&D infrastructure,
- Increasing the Design, Manufacture and Branding capabilities and capacities of companies,
- Developing local and foreign markets,
- Improving the legal and administrative legislations,
- Developing physical infrastructure.

The role of automotive design, hence the automotive designer, increases with the development and improvement plans for the industry. As there are more projects that are being funded by the industry and as the world market regains its stability for further production and competition, design will, once again, become an important role player for differentiating one product from the next (Zaun, Todd, & White, 2002). This is another reason that attention from the automotive industry in Turkey and the successful integration of automotive designers to the product development process is not a luxury but, a requirement.

There is no question, as the literature review will also point out, about the need for successful design to create and sell products that can compete in the local and international markets. What needs answering is if industrial designers, currently employed in these companies in the automotive industry in Turkey, are creating, inspiring, innovating, and hence designing new and original vehicles to compete with local or foreign brands. If they are designing for these, how are they doing it and if they are not, what are the reasons that are keeping them from doing it, needs further study.

### **1.2. Significance and Contribution of the Study**

The academic significance of this study, other than pure academic curiosity, the subject matter of this study, the role of the in-house automotive designers, have never been thoroughly researched in Turkey and therefore a thorough investigation would be in the interest of academic knowledge. The need for investigation not only comes from the value of this industry in economic terms but, also from the educational implications it has on the university education of industrial design/automotive design. The outcomes of this study will hopefully contribute to improve the integration of design into the automotive industry in Turkey and be used to discuss and criticize the university education of this profession.

### **1.3. Aim and Scope of the Study**

The aim of this research is to deliver a comprehensive and up-to-date study of the state of the in-house automotive designers in the automotive industry in Turkey together with a detailed account of an investigation about their roles and how these roles affect the automotive industry as a whole.

The scope of this study is focused on the roles of industrial designers, who have become in-house automotive designers in the automotive industry in Turkey.

The scope of the thesis will include a literature review about the roles of the automotive designer and a field study where these in-house automotive designers in Turkey are interviewed about their roles in the companies. The field study will be defined by the people inside the automotive industry in Turkey and people who have work relations with the industry but, are currently outside the industry. For the people inside the automotive industry in Turkey, two groups are included in the scope of the study; (1) automotive designers currently working in companies that are manufacturing vehicles on an industrial scale, (2) the automotive design managers who are in charge of these automotive designers in these companies. For the people who are outside of the industry, two groups are included; (3) the automotive industry experts of the automotive industry in Turkey and experts of the automotive design field in Turkey.

The scope will not include freelancing or out-sourcing designers or companies that are serving the automotive industry in Turkey. The industrial designers working in these companies that are not doing work related to automotive design will not be included in the scope of this study.

### **1.4. Main Research Questions**

The main research questions that the thesis will try to answer are listed below:

- What are the visions and goals of the automotive industry in Turkey?
- What is/are the role(s) of the in-house automotive designer in the automotive industry in Turkey?

- What role does automotive design and the in-house automotive designer play in reaching the visions and goals of the automotive industry in Turkey?
- What are the existing strategies to achieve success through industrial design in the industry in general and automotive industry specifically?
- What can be recommended to the companies in the automotive industry in Turkey to achieve success through automotive design and in-house automotive designers?

### **1.5. Structure of the Thesis**

The chapters and their subjects are given below.

In Chapter 2, the current state of designer and automotive designer roles will be presented by data gathered from the literature review. The data from abroad will be explained to establish a base for the field study.

In Chapter 3, the methodology of the study will be explained in detail. The methodology framework, data collection, and the data analysis will be explained in this chapter.

In Chapter 4, the finding of the field study will be presented and discussed. The findings from the interviews and their discussions will be presented with comprehensive detail.

In Chapter 5, the conclusion will be stated and the research questions asked in the first chapter will be revisited, discussed and answered according to the findings from the study. The chapter will include suggestions for the industry and suggestions for further studies.

### **1.6. Review of Terms**

The terms that are used throughout this study and that are critical in helping the reader understand this thesis will be examined in this section. The terms industrial design, industrial designer, automotive, automotive industry and automotive designer are explained in the following paragraphs.

#### **Industrial Design**

To define industrial design, it is important to examine the views of the organizations that currently promote and endorse industrial design around the world.

A major organization of industrial designers in the world, The International Council of Societies of Industrial Design (ICSID), defines design as:

“...a creative activity whose aim is to establish the multi-faceted qualities of objects, processes, services and their systems in whole life cycles. Therefore, design is the central factor of innovative humanization of technologies and the crucial factor of cultural and economic Exchange (ICSID, 2012).”

After this definition, ICSID points out that:

“...the adjective put to design must be related to the term industry or in its meaning of sector of production or in its ancient meaning of ‘industrious activity’. (ICSID, 2012).”

The American organization, Industrial Designers Society of America (IDSA), defines industrial design as:

The professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer (IDSA, 2010).

One of the other big influences in the design world, the Design Council, formerly known as the Council of Industrial Design, uses the design definition set by one of their former Chair persons, Sir George Cox, and he states:

“Design is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end (Cox, 2005)”

The organization in Turkey, Industrial Designers Society of Turkey, defines industrial design in two separate places on the same page:

...the process of developing product ideas and preparing projects for end users, to be manufactured by the industry, following criteria such as functionality, taste of the target group and suitability to the needs of the users.

Industrial design is a profession that forms the relation between humans and products manufactured with industrial methods (ETMK, 2012).

And also as:

Industrial design is the professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer (ETMK, 2012).

The last definition is taken from IDSA, which shows that ETMK agrees and accepts the definition proposed by IDSA.

### **Industrial Designer**

As defined by ICSID:

...the term designer refers to an individual who practices an intellectual profession, and not simply a trade or a service for enterprises (ICSID, 2012).

This definition is very broad and defines design rather than industrial design. However, by integrating the word “industrial” into that sentence and using the definitions put forward in the explanation of ‘industrial design’ above, we can state that, ‘an industrial designer is a person who practices in creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer, and not simply a trade or a service for enterprises’.

### **Automotive**

The definition of automotive in its simplest form is ‘relating to motor vehicle’. However, this definition stands as being very broad and encompassing in its current form.

International Organization of Motor Vehicle Manufacturers (OICA), the biggest organization of the automotive industry, uses the word “automobile industry” in defining its members.



Most manufacturers and organization in the automotive business define automotive 'as the combination of automobiles, light commercial vehicles and buses'. This is also the accepted definition used in this study.

Heavy commercial vehicles including large trucks, tractors and vehicles such as motorcycles or motored bicycles are generally not included in the definition of automotive and are usually included in the commercial vehicle category. The definition also excludes third-party manufacturers and suppliers as well.

In some countries, such as Turkey's TAYSAD (Association of Automotive Parts and Components Manufacturers), the suppliers for the automotive industry have created their own councils and associations rather than being in the same organization with the automotive manufacturers.

### **Automotive Industry**

In its simplest definition, the industry that designs, develops, manufactures and sells automotive products is defined as the automotive industry. However, this definition creates conflict with the narrower definition used by the industry in defining 'automotive'.

Therefore, the definition used in this study is, 'the industry that designs, develops, manufactures and sells complete automotive products and not parts or components'.

### **Automotive Design**

Automotive design can be summarized as a discipline that deals with the appearance of vehicles, as well as their ergonomics, security, and safety. As described by Design Council, 'Automotive design encompasses almost every aspect of a vehicle's design that is readily visible to the customer - from the seats and steering wheel through to the door trims and the dashboard' (Design Council, 2012).

It should also be noted that automotive design is usually considered as a sub-field of transportation design, which deals with all types of vehicles, including sea and air vehicles. It is also possible to see these fields studied under the field of Industrial design in various educational facilities around the world (Lynn, 2006).

### **Automotive Designer**

It is possible to observe three kinds of professionals that receive the automotive designer title. The first kind is the graduate that completes the major of automotive design from a university. The second kind is the person that graduates from the field of industrial design by studying in the sub-fields of automotive design, car design or transportation design. The third kind is the person who has spent considerable amount of time in the area of automotive design without a specific education in the field of automotive design. The third kind was more common in the past where education in the fields of industrial design, transportation design, automotive design, or car design were not widely available.

Considering all these alternatives, the best explanation for the terms is extracted from the actual practical conduct of the profession in the field and can be defined as 'the person that works in and that is a part of the automotive design process'.



## CHAPTER 2

### LITERATURE REVIEW

#### 2.1. Literature Survey Strategy

This thesis investigates the roles of the in-house automotive designers in the automotive industry in Turkey. To achieve this, a preliminary research; a raw study of literature to identify the keywords and concepts; was conducted about the subject and the periphery subjects in questions. The outcomes of this preliminary study provided the keywords for the literature review.

The keywords selected were organized into main subjects (the first group of words) and the combination words (signified with the plus sign) as given below.

- Automotive Design + Process / +Education
- Automotive Designer + Education / + Responsibilities / + Roles / +Expectations
- Automobile Design + Education
- Automobile Designer + Education / + Responsibilities / + Roles / +Expectations
- Industrial Design + Education
- Industrial Designer + Education / + Responsibilities / + Roles
- Transportation Design + Education
- Transportation Designer + Education / + Responsibilities / + Roles / +Expectations
- Car Design + Education
- Car Designer + Education / + Responsibilities / + Roles / +Expectations
- Design Management + Education
- Design Manager + Education / + Responsibilities / + Roles / +Expectations
- Automotive Design Management + Education
- Automotive Design Manager + Education / + Responsibilities / + Roles / +Expectations
- Chief Designer + Education / + Responsibilities / + Roles / +Expectations
- Product Development + New / + Process
- Automotive Industry + Plans / + Aims / + Goals / + Future
- Turkish Automotive Industry + Plans / + Aims / + Goals / + Future
- Automotive Industry in Turkey + Plans / + Aims / + Goals / + Future
- Global Automotive Industry + Plans / + Aims / + Goals / + Future

These keywords were used in various different resources that are given below.

- Peer-reviewed articles
- Reports
- Periodicals
- Books
- Newspapers
- Journals
- Online magazines

The peer-reviewed articles, journals, some of the newspapers, some of the books and online magazines were accessed by the means of the internet using search engines such as Google and Google Scholar. The other sources were accessed using the electronic database subscriptions and

physical locations of Middle East Technical University (METU) and the Bilkent University. The research conducted using these sources enabled downloading of these documents to local drives for later reviewing.

The electronic databases that enabled the reach to articles, certain periodicals, books, and journals used during the literature review phase of the research are listed below.

- Blackwell Journal Archives
- Blackwell Reference Online
- Dissertations and Theses
- EBSCOhost Databases
- Elsevier Electronic Books
- JSTOR (The Scholarly Journal Archive)
- OECD iLibrary
- Oxford Journals Online
- SAGE Journals Online
- SAGE Reference Online
- ScienceDirect
- Wiley InterScience Journal Archives
- Wiley Online Library

The information gathered from these sources were either directly used in the study as references or were kept as bibliographical resources.

## **2.2. Global Automotive Industry**

As this study is related the role and the situation of the automotive designer in automotive industry, both in global and local context, the terms related to the industry, the definitions and the situations need to be examined in a brief and clear manner.

When the automotive industry is mentioned, as in the other sectors, other terms such as design, production, market/marketing, materials, and technology have to be included in the context. Automotive industry is an environment where fast progress in materials and technology is highly visible, but at the same time, where not much has changed in the last hundred and fifty years in terms of form and general approach. The automotive industry can be defined as a powerful and proactive sector where large businesses are conducted and a large market is served. Success in the automotive industry is another important issue. Companies that are aiming to continue their race in the global automotive industry need to examine and understand the socio-economic and socio-cultural situations of their markets, technological necessities or wants by consumers, and the style bias of the target audience. Automotive companies usually measure success by the number of vehicles produced in a timeframe or the annual economic growth of the company. However, more and more brands are measuring their export capabilities and are taking these numbers as their success rates in the global industry.

The contemporary factors influencing the pattern of the global automotive industry can be summed up as environmental and energy factors, changing technologies, changing customer needs, urbanization, physical features of vehicles, and global economic problems. One of the most prominent analyst firms, Deloitte, examines the current situation of the automotive industry, stating both the negative and positive aspects. Negative aspects are viewed as the slowing of the global economy and the declining customer confidence in the sector. The positive aspects are viewed as

the standards achieved in quality and production, safety in vehicles, fuel efficiency, and advancements in technology (Deloitte., 2009).

According to the study by Van der Wiel et al., the factors that influence design in the automotive industry are technology, legislations, roominess, and design-material relations (van der Wiel, van Besouw, & Huijbers, 2012). The materials that increase the safety and strength of vehicles, the use of light to increase attraction and create different moods, the use of sculpted aerodynamic forms, user and pedestrian centered legislations, and comfort increasing internal space adjustments are all topics that concern design and the designer.

In another report (KPMG, 2013) that explains the current situation of the automotive industry, design is shown as a greatly influencing factor for the dynamic state of this constantly changing and progressing industry. Study conducted with various levels of management like CEO, Team Leader, Manager, etc., in the global automotive industry reveals interesting facts about the consumer issues to purchase.

These two researches are important in terms of explaining the views the automotive designers and consumers about the terminology that is used and the preference rankings of the global automotive industry. The most important issues for the consumers are revolving around technology and materials. According to the study, the consumers are increasingly influenced by the fuel efficiency of their vehicles. Safety is observed as the second most important topic and ergonomics and comfort as the third. The interesting point is that the influence of styling has fallen from third position in 2011 to fifth position in 2013. This also correlates with their findings for the future trends in the global automotive industry. However, the fifth position is still a very important position in terms of influencing factors that will impact the success of companies in the market.

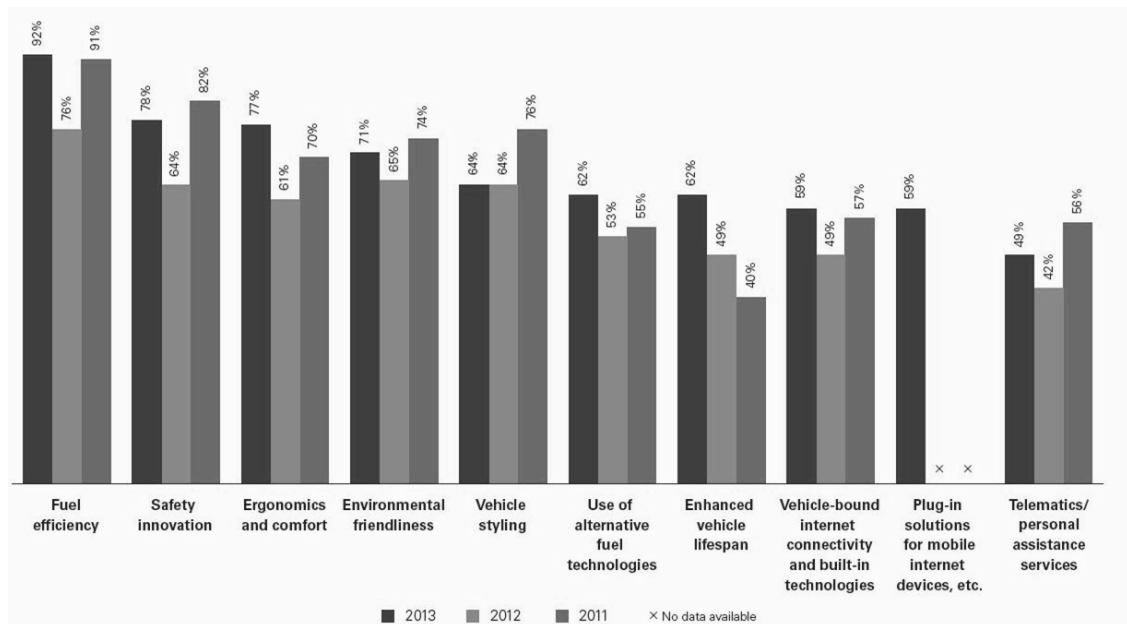


Figure 1 Top consumer purchase issues in the global automotive industry (KPMG, 2013, p. 6)

The studies conducted on the future of the global automotive industry give insight into the future of automotive design both in terms of consumers and manufacturers. A research conducted in 2012, by KPMG, presents the trends that will influence the global automotive industry for the next 15 years in

Figure 2. As observed in the figure, most of these trends will energize the global automotive industry, and emphasize the importance of design. These issues will be more crucial for developing countries trying to reserve a place in the global automotive industry.

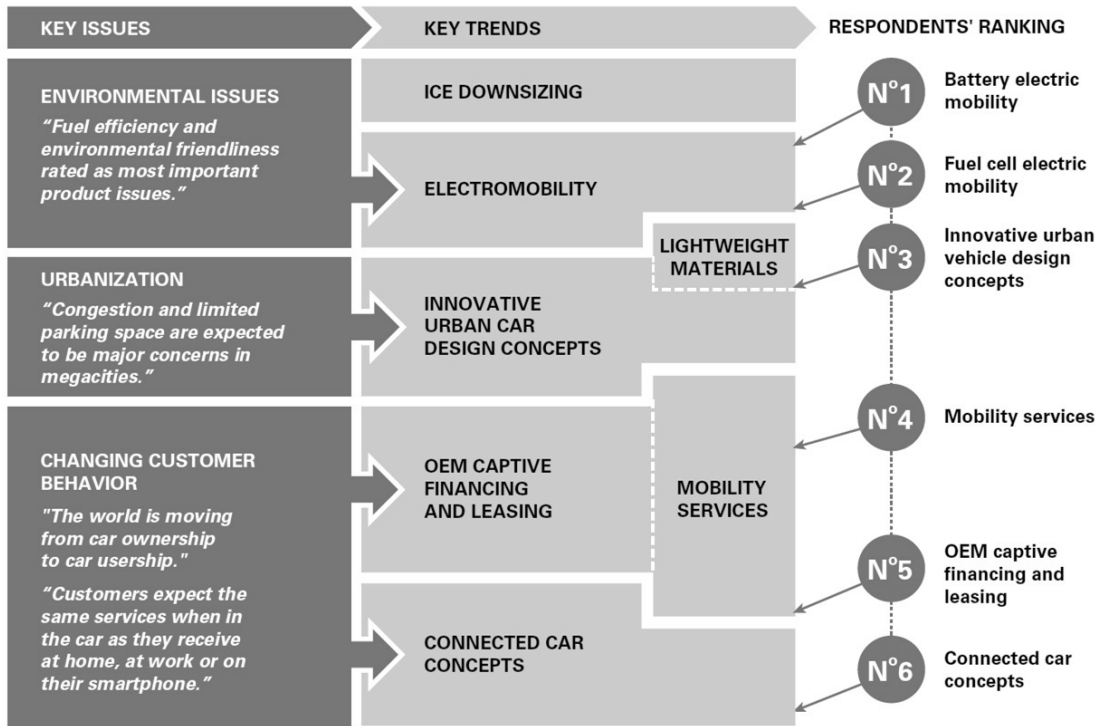


Figure 2 Most important trends in the industry in the next 15 years (KPMG, 2012, p. 5)

Deloitte (2009) also reports on a list of items that will influence the global automotive industry in the near future:

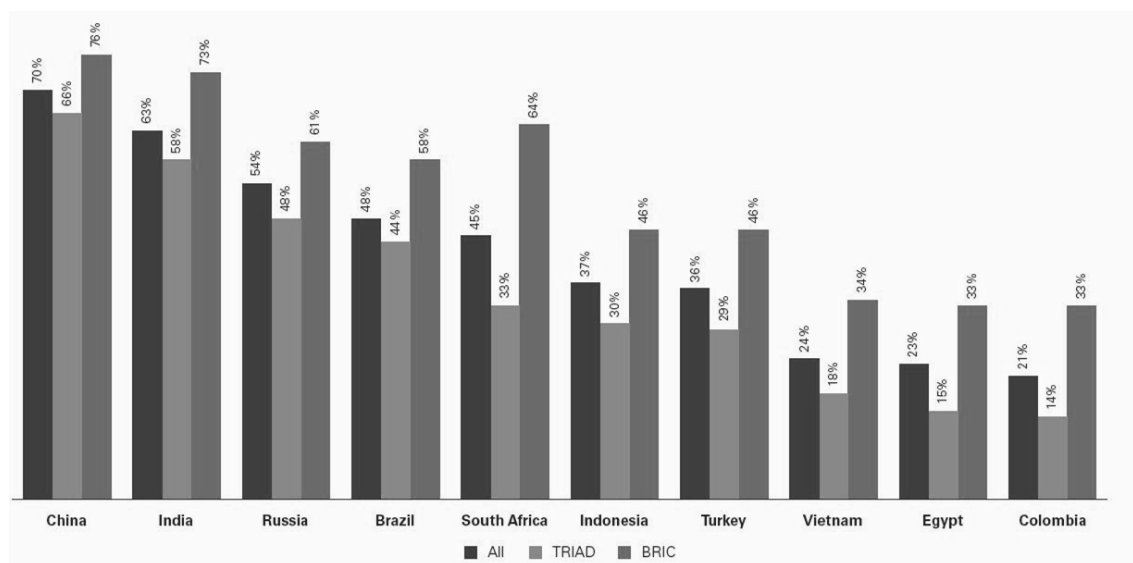
- The decline of Detroit
- The rise of manufacturing in lower cost regions
- China on the move
- Consolidation and a new global balance
- Supplier networks in low-cost centers
- Higher volume global architecture will become the norm
- Segmentation of customers

As observed from the report, the above items will influence the future of the automotive industry, as well as the current situation. It is possible to state that the decline of Detroit is related to the struggling situation of the US automakers against their European and Asian counterparts. The BRIC (Brazil, Russia, India, and China) countries, viewed as the lower cost region, are beginning to take control of the majority of production of vehicles. China, known as one of the main manufacturing countries in the world, is increasing its automotive brands and the capacity of production. The expectations of consolidation show that the global automotive industry is expected to be left with fewer global players. Suppliers in regions with lower production cost will increase their market share.

Deloitte (2009) also highlights seven major, global trends to watch in both developed and emerging markets towards 2020 in his report. The first of these is conscious consumption; the increase in consumer consciousness and the consumers' orientation towards value-driven products. The second

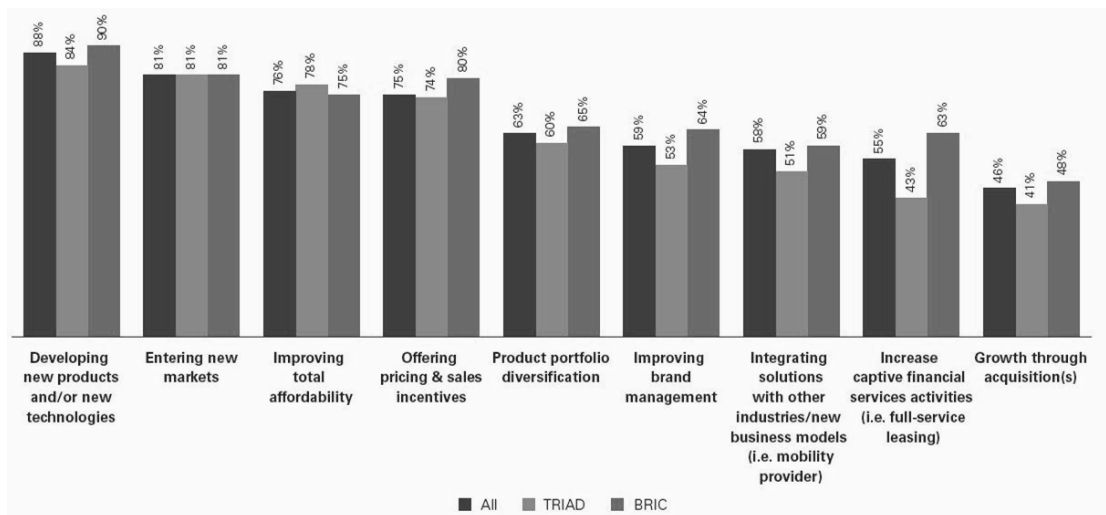
trend, the moving-up, states the improving progress of the middle-class in developing countries and the opportunity to reach a new customer market. The third trend, shades of green, emphasizes the formation of a culture based on the usage of sustainable energy sources following the increase in the environmental awareness of customers. The fourth trend, safety first, expresses the increase in the interest in vehicle safety and quality with the increase of technology usage in the automotive industry, and how this changes the consumption patterns of customers. The changes in these patterns, and the expectations of customers, influence the manufacturers, and consequently the engineers and the automotive designers in terms of their approaches to innovation in safety oriented designs. The fifth trend, staying connected, shows the importance of the electrical and electronic accessories that increase the safety factor of vehicles. With technologies brought by with these kinds of accessories, it is possible to say that communication in vehicles will increase. The sixth trend, the web, emphasizes the changing trends in the ways that customers are buying vehicles. According to the report, more and more people are buying their vehicles over the internet. The last trend mentioned, the changing preferences, as mentioned before, is related to the increase in the population of cities and the increase in the number of elderly people.

The effects of these are visible in the approach and choices made by this customer base. The expectance of customers shows that user-friendliness, value-price, high quality, safety, and fuel efficiency are factors that are ahead of styling and the brand. With all these new trends, the increasing technology use by companies will require the automotive firms to invest in highly skilled talent for the future. The management practices will need to shift in order to attract, retain, and motivate this new talent. The increasing role of government support and incentives will need to be maintained or even increased.



**Figure 3 Increasing investments by country in the global automotive industry (KPMG, 2013, p. 35)**

As mentioned by KPMG (2013), the numbers of investments in China are in the leading position in the industry. India, Russia and Brazil are following China in the numbers of investments. The position of Turkey, as an emerging economy, is seventh among the other emerging countries. This increases the potential of Turkey as a production center in the region.



**Figure 4 Growth tactics for the automotive industry (KPMG, 2013, p. 49)**

For the automotive industry to grow, and to gain success in the global market, the top ranking tactic is viewed as the development of new products and/or technologies. The strategy report for the automotive industry in Turkey, which was published by the Ministry of Science, Industry and Technology, mentions the necessity of improvement in this area and the finding from the KPMG (2013) report support the aims of the strategy report. The OEMs are expected to profit largely by producing and contract manufacturing vehicles. The current situation of the automotive industry in Turkey will benefit from this as the aim of the industry includes becoming the biggest production center in the region.

Weber (2009) mentions four topics about the achievements that a company has to accomplish in order to gain acceptance as a global brand:

- Worldwide Market Presence: The company and the brand has to have a global presence and recognition
- Model Mix: The brand has to be able to cater to various different consumer types with various models
- Brand Profile: The company and the brand has to have good brand recognition and approval in the global automotive industry
- Product Profile: The products of the company or the brand have to have good recognition and approval in the global automotive industry.

The research conducted by another prominent analyst firm PwC (2012), expresses the milestones that companies need to reach to achieve global recognition and success. According to the outcome of this report, a healthy product development process is the most important factor in the success of automotive companies. The report also mentions the importance of the suppliers; in terms of materials, products and the functioning of the system. Another factor of success will come from the ability to create new markets companies are expected to choose adapting existing products to new markets instead of producing completely new designs for them. These types of choices will increase the profit margins of companies in these new markets. As one of the last, but equally important factor after production and design, will be the ability to take the product to the target audience. To achieve success in the global automotive industry, the companies will need to achieve this using more creative methods.



The presentation prepared by van der Wiel et al. (2012), states that the future of design and achieving success through design will depend on the following items in the automotive industry.

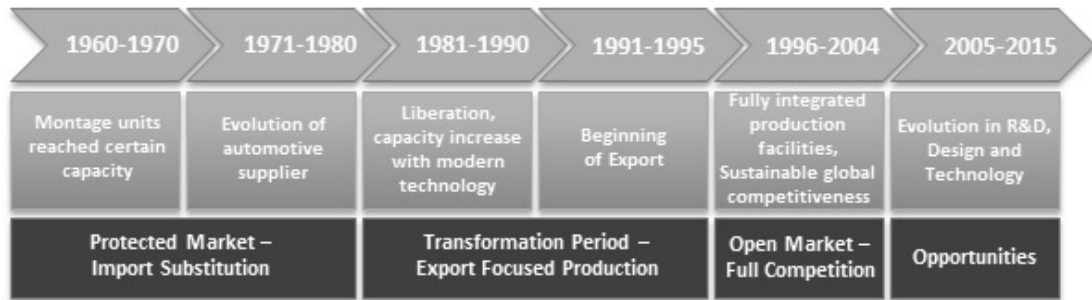
1. Inspired By Nature: The future vehicles will carry influences from nature in their designs
2. Floating Elements: The design of the seats and other internal elements of the vehicles will have a floating feel to them
3. Sculpted Surfaces: The designs of vehicles will be more sculpted
4. Individuality: The automotive companies will invest more in the customizability of vehicles
5. Femininity: The design of cars for female buyers will increase
6. Electric Drive: The electric and hybrid motors will change the way automotive products are thought and designed.
7. Light Design: The design of headlights and internal lights will define the appearance of vehicles.

The topics mentioned above should also be viewed as guidelines for the automotive industry in Turkey. The automotive industry in Turkey needs to understand and implement the future aims and goals of the global automotive industry, both in terms of growth tactics and in terms of design goals in order to participate in the global marketplace.

### 2.3. Automotive Industry in Turkey

The information relating to the current situation of the automotive industry, and the strategy plan presented under this heading was prepared with the inputs from the Special Automotive Group (established with the 9<sup>th</sup> Development Plan), Turkish Statistical Institute, Ministry of Economy, The International Organization of Motor Vehicle Manufacturers, European Automobile Manufacturers' Association, Automotive Manufacturers Association, and uses the 2010-2014 Strategic Plan (prepared by the Ministry of Science, Industry and Technology) as a primary source.

The progress of the automotive industry in Turkey throughout the years is given in the figure (Figure 5) (Investment Support and Promotion Agency, 2010).



Source: Automotive Manufacturers Association

**Figure 5 Historical timeline of the automotive industry in Turkey (Investment Support and Promotion Agency, 2010, p. 7)**

The table shows the progress that the automotive industry in Turkey has made since the 1960s. While in the 1960s, the automotive industry in Turkey was focused on the montages of tractors and commercial vehicles, in the 1970s, it is possible to see the influence of the term “localization”, and the longing of “vehicle production” in Turkey. In accordance with these, the 1980s brought the implementation of infrastructure to achieve the visions of the 1970s and the investments towards “capacity and technology”. With the 1990s, the sector met with the term “global competition” and

the decisions to integrate itself into the global market with the necessary structuring. The 2000s brought the acceptance of the understanding of “sustainable competitiveness” and the necessary implementations; with design and production, towards becoming a competitor in the global market.

From its initiation in the 1960s to its current situation, the automotive industry in Turkey can be summed up with the following achievements (Ministry of Science, Industry and Technology, 2011):

- 17<sup>th</sup> place in terms of vehicle production in the world
- Second place in bus production in the EU.
- Second position in light commercial vehicle production in EU
- Ninth position in heavy truck production in EU
- Eight position in car production in EU
- Sixth position in total production in EU

One of the strongest areas of the automotive industry in Turkey is its supplier industry. The supplier industry in Turkey has the work force and experience from years of supplying the Turkish and foreign companies with semi-finished goods, systems, and assembly services. The supplier industry in Turkey has reached global recognition in terms of production volume and production quality (Ministry of Science, Industry and Technology, 2011).

However, the current state of the automotive industry is in risk in terms of its investments and the profit margins. Even though the supplier industry is a strong part of the automotive industry in Turkey, the dependence on foreign products by the Turkish manufacturers to foreign products, in terms of materials and various mechanical and electronic components have increased the costs of production and have negatively influenced the competitiveness of the sector (Ministry of Science, Industry and Technology, 2011).

According to the survey results of Arer (2010) from his master’s thesis “The Importance of Design in Increasing the Competitive Power of Turkish Automotive Industry”, the companies in Turkey believe that cost and high quality standards are their primary competitive advantage. Some companies are stating their unique design capabilities as a competitive advantage as well. This signifies that companies are beginning to accept the competitive advantage of increased added value from these capabilities.

To understand the advantages and disadvantages, the opportunities and the strategies to take advantage of them, and the weaknesses of the sector, a SWOT analysis of the sector in its current situation was prepared by Ministry of Science, Industry and Technology, which is given in the presented table (Table 1) (Ministry of Science, Industry and Technology, 2011).

**Table 1 SWOT analysis of the automotive industry in Turkey (Ministry of Science, Industry and Technology, 2011, p. 24)**

Strengths	Opportunities
<ul style="list-style-type: none"> <li>• Harmonization with the EU, Customs Union and the global technical legislation</li> <li>• Proximity to the European market</li> <li>• Low-cost labor force compared the EU countries</li> <li>• Competitive cost with flexible manufacturing capability</li> <li>• Competitive and strong supply chain</li> <li>• High quality standards in production</li> <li>• A well-trained, young, dynamic, motivated and skilled workforce</li> <li>• Level of technical and commercial skills</li> <li>• The prevalence of international management systems (quality, environment, safety, etc.)</li> <li>• Ability to adapt to conjuncture and standards, flexibility in production and delivery (in low amounts)</li> <li>• Partnerships with foreign firms and the "know-how" level in supply industry</li> <li>• The presence of entrepreneurial cadres</li> <li>• Relatively high (compared to EU) operating efficiency and low production cost</li> <li>• Presence of domestic brands and experience in the field of public transport</li> <li>• Exports to global markets</li> </ul>	<ul style="list-style-type: none"> <li>• Geographical location advantage and the potential to become the center of international production in the region</li> <li>• Potential to become the R &amp; D and design center</li> <li>• Potential of the internal market</li> <li>• New opportunities in global markets and neighboring countries - new export markets</li> <li>• Global structuring and relocation production centers after the global crisis,</li> <li>• Alignment with the EU and the global technical regulations</li> <li>• The country has become attractive for new investments</li> <li>• New advantages in stimulations packages provided for R &amp; D and investment</li> <li>• Development of the logistics industry</li> <li>• New potentials for export into global markets</li> <li>• Potential of the supplier industry to form design partnerships in new vehicle projects</li> <li>• The opportunity to capture developed countries in terms tools and production technologies for innovative vehicle technologies</li> <li>• The increase in global orientation towards public transport and commercial vehicles, the expertise of the automotive industry in Turkey</li> <li>• Strengthening the institutional capacity of the Ministry of Industry and Trade in automotive</li> </ul>
Weaknesses	Threats
<ul style="list-style-type: none"> <li>• Insufficiency against the obligations that will be created by the climate change and low-carbon legislation</li> <li>• Lack of relations and effective synergy between main–supplier industry</li> <li>• Insufficiency in generating own resources for R &amp; D activities</li> <li>• Lack of basic raw materials and dependence on foreign markets</li> <li>• The lack of companies with collaborative design competence for new vehicle projects</li> <li>• Lack of local contribution in motor vehicles, and parts and components</li> <li>• Foreign dependence and lack of local unique design in engine and drivetrain technology</li> <li>• The lack of adequate testing centers</li> <li>• Lack of capacity in the undergraduate and graduate levels of universities' automotive-related departments</li> <li>• Delaying of decisions on capacity-building and technology investments</li> <li>• Insufficiency in logistics infrastructure</li> <li>• Insufficiency in administrative and technical infrastructure relating to technical regulations</li> <li>• High production costs due to lower capacity utilization rate</li> <li>• Supply-demand imbalance in the supply of qualified jobs</li> <li>• Problems in foreign markets</li> <li>• Inability to supply required raw materials locally</li> </ul>	<ul style="list-style-type: none"> <li>• Obligations that will be created by the climate change and low-carbon legislation</li> <li>• Increase of the tax burden in the sales of motor vehicles</li> <li>• Reduction of MVT depending on the age of the vehicle</li> <li>• Increase of the tax burden on fuel</li> <li>• Bureaucratic procedures/ expenses in export - import</li> <li>• The negative effects of macroeconomic conditions</li> <li>• High input costs</li> <li>• Free circulation of used motor vehicles in the EU (import of second-hand vehicles)</li> <li>• Uncertainties about the new legislations on "Energy Efficiency" and "Environmental Law"</li> <li>• Lack of alternative export markets</li> <li>• Eastern European countries', China's, and India's progress on the ability to take part, and to deliver low cost, high added-value parts in new projects</li> </ul>

According to the results from the SWOT analyses, a strategy plan outlining these improvements was prepared from the SWOT analysis (Ministry of Science, Industry and Technology, 2011). This plan has various strategies to improve the current situation of the automotive industry. As observed in the figure (Figure 6), the strategy plan defines five aims; to (1) improve the R&D infrastructure, to (2) increase the skills and capacities of companies in design, production, and branding, to (3) improve

local and foreign automotive market, to (4) improve administrative and technical regulations, and to (5) improve physical infrastructure. The identification of the aims defined to solve them has also presented new vision and goal for the automotive industry in Turkey. These visions and goals were prepared by the inputs from the governmental organizations, NGOs, universities and other public establishments (Ministry of Science, Industry and Technology, 2011):

Vision: “To become the production and R&D center of the region” (2011, p. 29).

Goal: “To increase the sustainable competitive power of the automotive sector and to transform the automotive sector a heavily technology using and value added structure” (2011, p. 29).

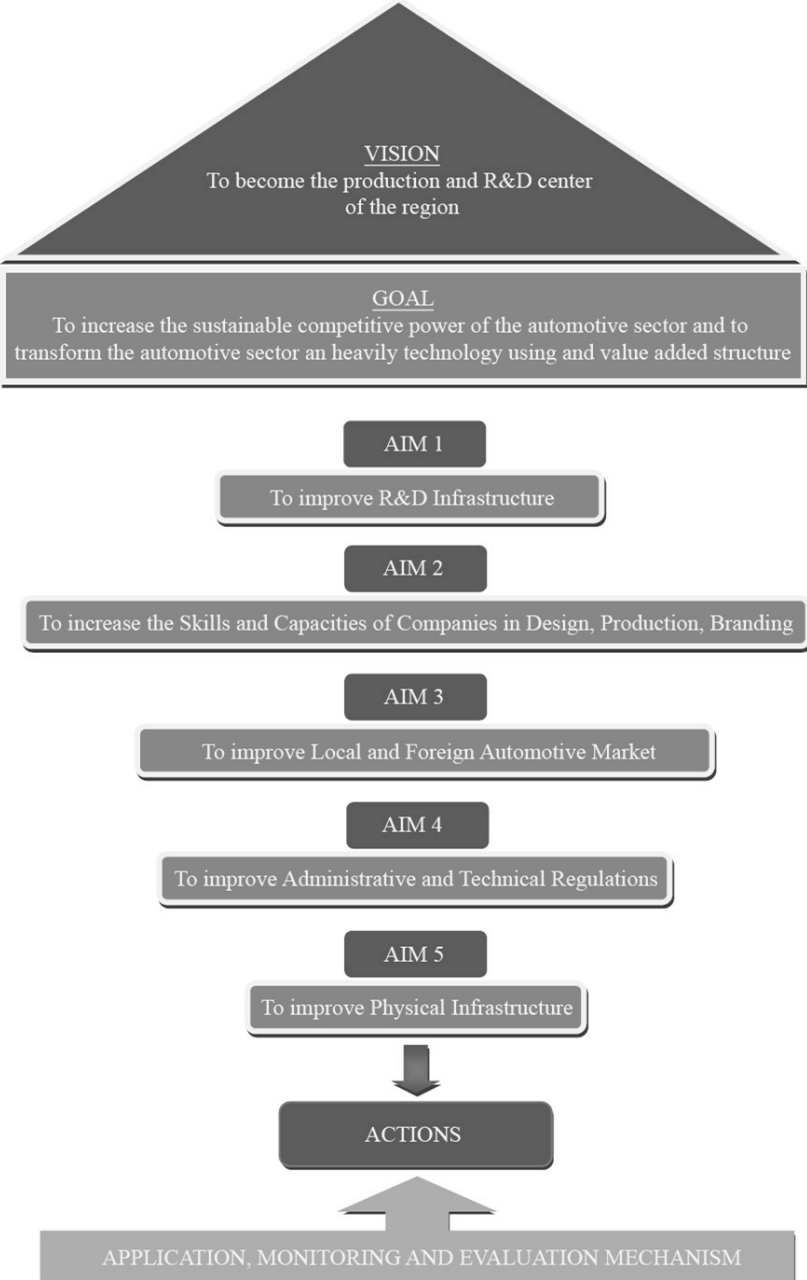


Figure 6 Strategy of the automotive industry in Turkey (Ministry of Science, Industry and Technology, 2011, p. 6)

The integration of the newly prepared strategic plan, with its aims and goals, needs to be accepted and applied by the companies participating in the automotive industry in Turkey. With the definition of the vision and goals, such as the newly defined importance of design, the industry can examine the necessary requirements to succeed in the global automotive industry.

**Table 2 Intervention plan for the improvement of the automotive industry in Turkey (Ministry of Science, Industry and Technology, 2011, p. 25)**

STRENGTHS – THREATS - OPPURTUNITIES	AREAS OF INTERVENTION
Insufficiency in generating own resources for R & D activities	R&D Infrastructure
The lack of adequate testing centers	
Lack of relations and effective synergy between main – supplier industry	The Skills and Capacities of Companies in Design, Production, Branding
The lack of companies with collaborative design competence for new vehicle projects	
Lack of local contribution in motor vehicles, and parts and components	
Delaying of decisions on capacity-building and technology investments	
High production costs due to lower capacity utilization rate	
Eastern European countries', China's, and India's progress on the ability to take part, and to deliver low cost, high added-value parts in new projects	
Supply-demand imbalance in the supply of qualified jobs	
Problems in foreign markets	
Lack of alternative export markets	
Free circulation of used motor vehicles in the EU (import of second-hand vehicles)	
Bureaucratic procedures/ expenses in export - import	
Insufficiency in administrative and technical infrastructure relating to technical regulations	Administrative and Technical Regulations
Insufficiency in logistics infrastructure	
Reduction of MVT depending on the age of the vehicle	
Increase of the tax burden on fuel	
High input costs	
The negative effects of macroeconomic conditions	
Uncertainties about the new legislations on "Energy Efficiency" and "Environmental Law"	
Increase of the tax burden in the sales of motor vehicles	
Bureaucratic procedures/ expenses in export - import	
Insufficiency in logistics infrastructure	
High input costs	
Inability to supply required raw materials locally	

As seen in

Table 2, an intervention plan outlining these improvements was also prepared from the SWOT analysis (Ministry of Science, Industry and Technology, 2011). The intervention plan outlines the five areas of interest and defines them as aims. One of these aims, "Aim 2", deals with increasing the capacity of design, production and branding in companies and the creation of brands (Ministry of Science, Industry and Technology, 2011):

**Aim 2: To increase The Skills and Capacities of Companies in Design, Production, Branding**

Actions:

2.1 Work will be conducted on the improvement of long term cooperation that begin with vehicle concept designs, relations between main industry and suppliers and the incentives towards these that include the supply chains.

2.2 Work will be conducted on new incentives for product development that depends on unique technologies and design.

2.3 Support will be provided for the main parts of electric vehicles that use batteries and alternative fuels to promote the usage of alternative fuels in light of the Turkey's "Climate Change" vision.

2.4 Support will be provided for increasing the local percentage in the production of added value and cooperation between companies in the supply chain.

2.5 Creation and support will be provided for "National Focus Projects" for the production of public coordination.

2.6 Qualified personnel will be raised for the requirements of the industry.

2.7 Cooperation and coordination will be provided with the work conducted within the Input Supply Strategy.

**Figure 7 Aim 2: Increasing the capacity of design, production and branding in companies (Ministry of Science, Industry and Technology, 2011, p. 30)**

#### **2.4. Automotive Design and Development Process**

The leadership of design, in product development, is considered its current situation (Perks, Cooper, & Jones, 2005). On the other hand, as Goffin and Michele states in every stage of product development, a number of different functional areas are also involved to the process. Some of these functional areas have the potential to lead the process from time to time. It is important for R&D, marketing, manufacturing, and communication to work in a coherent manner to develop successful products (Goffin & Micheli, 2010). The contribution of design to the product development process can be summarized from the study conducted by Grzecznowska & Mostowicz (2004) as higher product competitiveness, better product quality, growth of sales, attractive appearance, strengthened company market position.

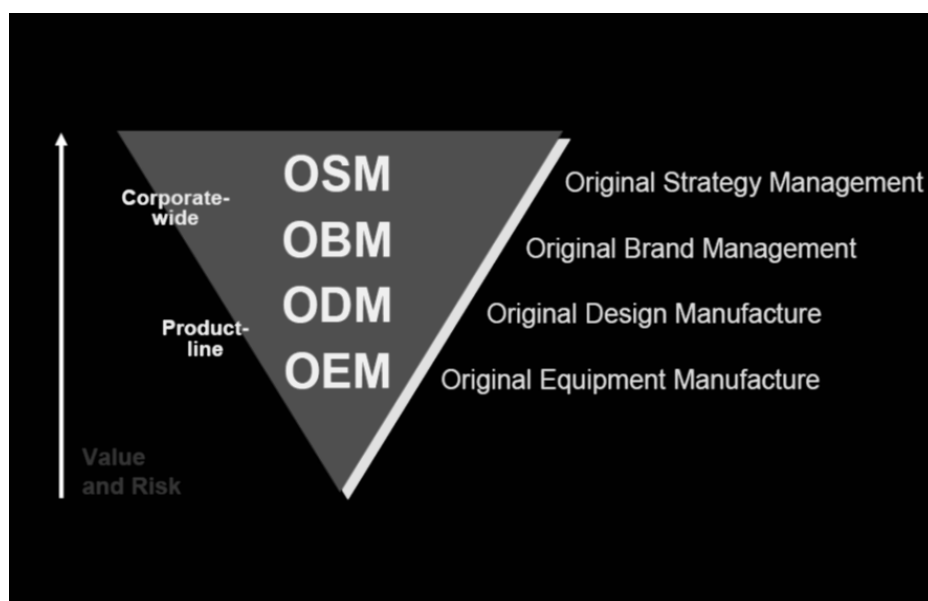
The ability to create effective communication and collaboration is dependent on the positioning of design in the company structure and the expectations from the product development process. Heskett (2005) states two functions for product development. These are:

- Adding value: Modifying existing products and systems in current markets

- Creating value: Opening new markets by giving people what they never thought they could have or never knew they wanted

The adding of value by modifying existing products and systems in current markets are seen in newly industrializing countries. However, the role of design in the product development process, if integrated as a process leader, has the ability to create value from innovation (Perks et al., 2005).

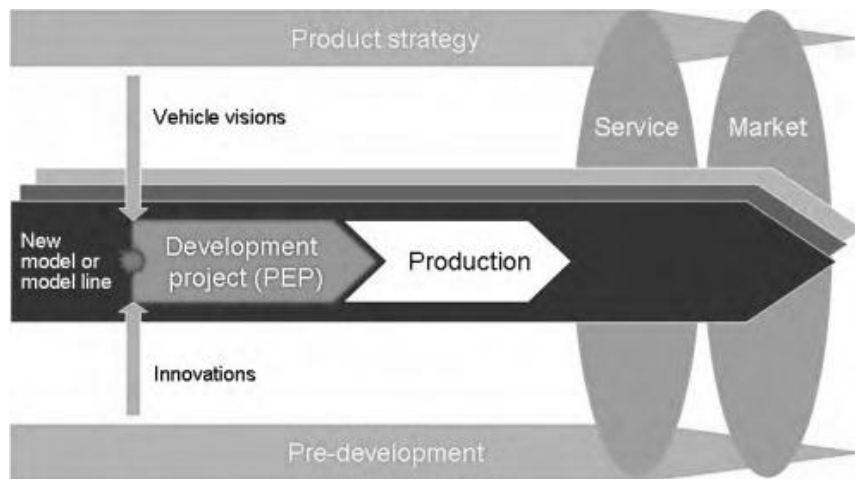
Heskett (2005) investigates this increase in value, as well as risk, in the movement from being an OEM to becoming an OSM, in the following graph (Figure 8). According to this definition by Heskett, most of the companies in Turkey are positioning themselves as OEMs. However, for the automotive industry in Turkey to succeed in the global market, as anticipated by the strategic plan, the companies need to position themselves as OSMs. With this, the value, hence the added-value, of the automotive industry in Turkey will increase. This increase in value is also visible as the role of the designer in the NPD moves from being a specialist to process leader (Roper, Love, & Vahter, 2012).



**Figure 8 Different Levels of Design Activity (Heskett, 2005)**

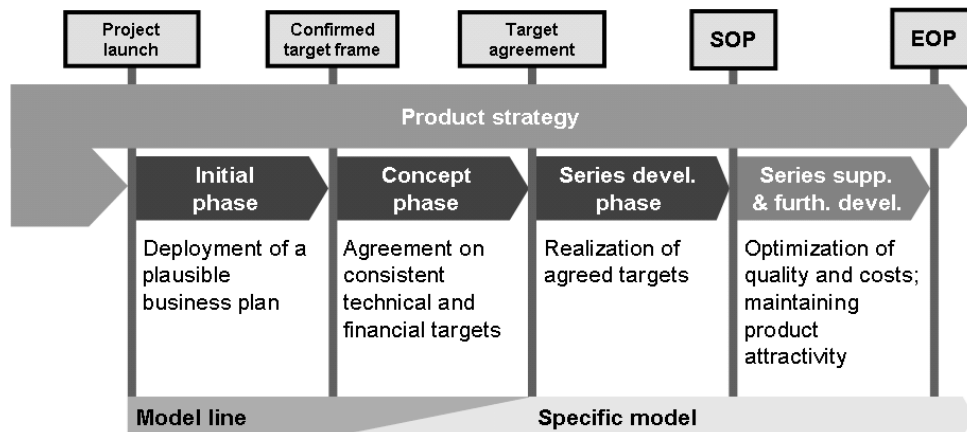
The study Roper et al. (2012) shows that the role of design and the number of designers engaged in the process has a direct correlation with the success of the product development process. The study shows that for large companies, such as automotive companies, there are significant gains by defining the role of the designer as functional specialists in the NPD process. These companies can also adapt a designer-led position (designer as a design manager) that will give successful results Roper et al. (2012).

In the context of this research, the product development process also needs to be examined in the automotive industry. Weber (2009) investigates this process as the Product Evolution Process (PEP) also referred to as time-to-market process, as conducted in BMW AG (Figure 9).



**Figure 9 Process framework of vehicle development projects (Weber, 2009, p. 8)**

There are several phases of PEP in the automotive industry. The product strategy phase, seen at the top, is a general ideation phase where the company decides on the vehicles to bring to market at a certain time. This process is a long-term plan that gives initiation to vehicles at certain times. Pre-development, on the bottom of the figure, is another continuous process that deals with research on innovation, suppliers and partners, and their economic feasibilities of integration (Weber, 2009).



**Figure 10 Main phases of a vehicle development project (Weber, 2009, p. 9)**

The automotive design process is one of the important aspects of the product development process in the automotive industry (Weber, 2009). The automotive design process is the phase of the product development process in the automotive industry where the automotive designer is positioned. The automotive design process can also be defined as a NPD (New Product Development) sub-process, as the product development process consists of other sub-processes such as the engineering process or the testing process. According to the statements of Clements & Porter (2006), there are also various major considerations that need to be taken into account during the development of automotive products as given below.

- Branding - this includes aesthetic taste and aspirations, alignment with customers, distinctiveness/uniqueness, ease of use, design for lifestyle and efficiency.
- Usability - this includes ease of use, comfort, fuel efficiency (aerodynamics/weight), lifestyle considerations, versatility/flexibility and family size.



- Security - this includes theft prevention, customer protection and pedestrian safety.
- Sustainability - this includes durability and recyclability (both affect material choice) and emissions.
- Future scenarios - this includes demographics, market research, customer insight and future trend forecasting.
- Engineering - this includes engineering packaging, materials, methods of manufacture, constraints of production methods and surface refinement.

(Clements & Porter, 2006, pp. 1-2)

The product development process in the automotive industry is divided up into various levels depending on the project. These levels define the type and timeframe of the automotive design process to be conducted by the company. According to (Weber, 2009), the usual design levels in the automotive industry can be listed as;

- Complete redesign. To design the whole vehicle from the ground-up. To design from the beginning is cheaper, less time consuming, and requires less effort than that of re-design projects.
- Derivative design. To re-design the vehicle according to an existing architecture. Even though the before and latter vehicles will use some of the same parts, the perception of the two vehicles need to be different by the consumers.
- Variant design. The design of vehicles belonging to a model family. There needs to be similarities in the designs of the vehicles in the same model family. The different models in the family will depend on the base model; the first model of the family to enter market.
- Model updates. The changes made to a model to increase its value/price and/or its market. These changes are implemented after the model has spent enough time in the market.
- Model year. The yearly design or engineering changes made to the model to decrease production costs to and/or to correct problems that may have risen.

The process can also be divided up into phases by their management intervention points (Tovey, 1997). These points of management intervention are given in the table ( Table 3).

**Table 3 Management intervention points (Tovey, 1997, p. 15)**

Management intervention points		Week
<b>1</b>	Issue of brief and product specification	
	Issue of package	0
<b>2</b>	Review of competition and influences	
	Informal discussion of concept sketches	1
<b>3</b>	Informal selection of concept sketches	2
<b>4</b>	Management review of concept sketches	3
<b>5</b>	Tape drawing presentation (some companies)	
	Scale model presentation (some companies)	6
<b>6</b>	Presentation of reworked tape drawings or scale models	9 (10)
<b>7</b>	Presentation of full-size clay model	18
<b>8</b>	Representation as required	22
<b>9</b>	Approval of three-dimensional model	26

The methods of approach to the automotive design process can vary among OEMs (Weber, 2009). This makes it difficult for a generic method of automotive design processes to be given, but there are elements and phases that can be considered as general. The typical stages of a generic automotive design process are given by Clements & Porter (2006):

1. Establishment of vehicle specification: The decisions given by the members of the product development process.
2. Informal discussion of first concept sketches: The establishing of the initial ideations about the vehicle. The mood boards, conceptual works and initial 2D sketches are observed in this phase.
3. Informal selection of concept sketches: The selection of alternatives by the managers.
4. Management review of concept sketches: The alternatives selected by the managers are prepared as 2D and 3D presentations for the marketing department.
5. 2D market research: The reviews from the marketing department for the alternatives.
6. Presentation of reworked concepts: The re-evaluation of the concepts based on the reviews from marketing.
7. Approval for detailed engineering: The phase where the full-scale clay models are made for the selected alternatives. These models will be turned into CAD data for later phases.
8. 3D market research: The clay models will be evaluated by the managers as 3D forms.
9. Final approval of 3D theme model: The alternatives of full-scale clay models and the 3D data will be evaluated and a single concept will be chosen by the managers.
10. Final feasibility development of chosen theme: The 3D data for the chosen concept will be evaluated by discussions between the design and engineering departments.
11. Final approval: The final approval for production is given by the managers.

As an example, the BMW Group (BMW, MINI, and Rolls Royce) approaches the automotive design process in a different fashion, with different titles and arrangements in the methodology. A special characteristic of the automotive design process, can be seen from Figure 11, in the BMW Group is the internal competition during the design phase (Bangle, 2001) (Weber, 2009) (BMW Corporate Communications, 2012). There are different design teams that compete amongst each other and the winning design is selected by the managers.

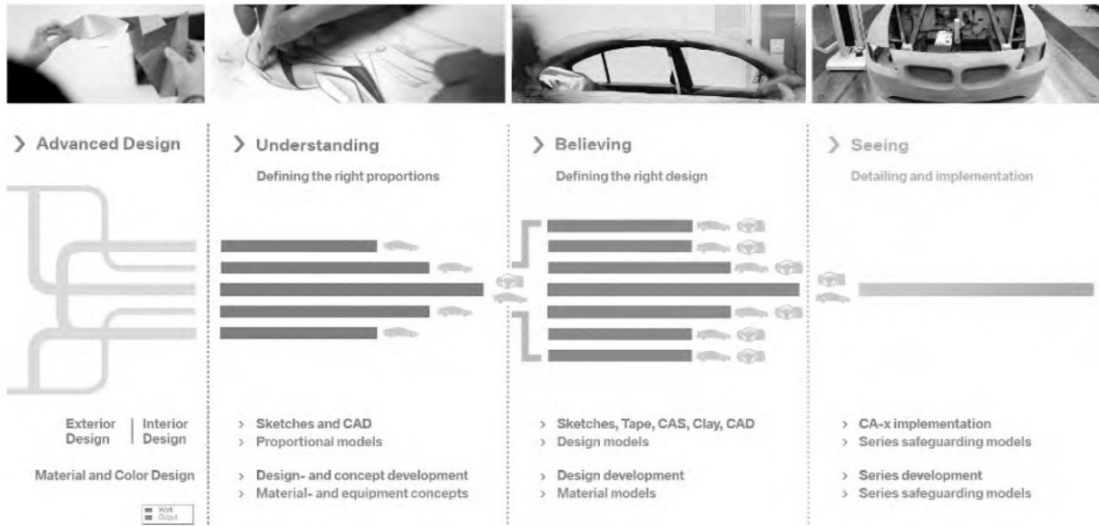


Figure 11 BMW Group automotive design process (Weber, 2009, p. 128)

As stated by Weber (Weber, 2009), the automotive design process at BMW Group consists of four distinctive phases. In the first phase, the '*Advanced Design*' phase, the design team works on concepts; designs, materials, and colors that are representative of the brand identity of the company. In the second phase, the '*Understanding*' phase, the concepts from '*Advanced Design*' phase that are selected are discussed and evaluated with the marketing and engineering departments. This phase is conducted with the 2D sketches and computer drawings that are prepared by the design team. The concepts and the designs are progressed in this phase, and materials and colors are finalized. The third phase, the '*Believing*' phase, is about the final selection of the concepts and designs. These decisions making processes are conducted with the inputs from the other departments. This phase also includes the finalization of the 3D visual materials. The last phase, the '*Seeing*' phase, includes the detailing work on the concept vehicle and realization of the design. With the beginning of this phase, the design teams have minimum contact with the production department.

Hyundai Motor Co., on the other hand, follows a more general automotive design process in their global design centers in the US, Europe, Japan, China and India (Hyundai Motor Co., 2013). This process carries similar steps to the model mentioned by Clements & Porter (2006).

- Design planning
- Sketching and rendering
- 1:4 scale modeling
- Digital (CAS) modeling
- Virtual reality (VR) presentation
- 1:1 scale clay modeling
- Emotional and color design

When the automotive design processes described by Tovey (1997) and Clemens & Porter (2006) are examined, there are very few differences. In companies like BMW and Hyundai, which are companies from different countries with different cultures, but both have global recognition as well as large markets, it is possible to state a similar design process, but specializations in the implementation of brand identity and small differences that are authentic to the brand. The automotive design process also varies in its phases and its timeframe in different countries. The Asian automakers complete this process with a higher level of patents and with more innovation than their western counterparts. The process has a four year cycle in the Asian automotive firms compared to the six year cycle in the US and Europe (Lin & Lu, 2006).

## **2.5. The Role of Design and Designer**

As this study focuses on the roles of in-house automotive designers in the automotive industry, it is important to understand the importance and role of design and to understand how these terms are defined in the literature. Diverse views and their implementations have influenced the literature on the role that design plays and the acceptance of design in the corporate environment as an important factor. To understand the different perspectives and the role of design, the different definitions and different approaches to the role of design and the evolutionary process that brought it to this date need to be explained.

Perks et al. (2005) examined the role of design and the evolution of different design perspectives through the 1800s to this date. The table (Table 4) displays the roles that design has progressed throughout this timeframe.

**Table 4 Evolution of the role of design (Perks, Cooper, & Jones, 2005, p. 113)**

Period	Design Role
1800s	Business-oriented
1920s to 1950s	Specialist
1960s to 1970s	Professional
1980s	Brand Dominated
1990s	Sub-process of NPD
Early 2000s	NPD Process Leader

Beginning with the 1800s, design is seen as a tool for business that is available for usage if the need arises. In the time frame between the 1920s and the 1950s, design begins to receive acceptance in the professional world as a distinctive, but not a required entity. The profession of design begins to get acceptance as a valid employment opportunity within the timeframe between the 1960s and 1970s. The 1980s brings design into the corporate environment and uses it to support the brand creation. With the 1990s, the role of design establishes itself in the NPD process as a sub-process. It is not until the early 2000s that design became a prominent figure in the product development process.

The evolution of the role of design in the NPD process, as expressed by Perks et al. (2005), in the first heading in this chapter, has a direct correlation with the roles of the designer expressed by Valtonen (2005), given in the figure (Figure 12).

Valtonen (2005) explains the roles of the designer through the 1950s to the 2000s as follows:

- The designer as the creator: The one who had given the form to the product.
- The designer in a team with mechanics and marketing: The one who worked cooperatively with product development team.
- The designer as an end-user expert: The one who defined the usability, ergonomics, etc. of the product. .
- The designer as a coordinator: The one who dealt with the new concept 'design management'.
- The designer creating experiences: The one who was a part of the strategic planning of new product.
- The designer pushing innovation: The one who affected the products, innovation and trends in both corporate and global manner.

Bonsiepe, on the other hand, with his studies conducted on newly developing countries, such as Turkey, explains the development of the roles of the design in five steps (Bonsiepe, 1999).

1. The phase of proto-design: Design is evaluated as a separate field. There is no professionalization or specialized education. The products are designed by artists, inventors, and engineers. There are no researches or discussions on the subject of design.
2. The embryonic development: The evolution of furniture design. There is an understanding of design as a concept, but there is still no professionalization. Experimental education of design, in the style of workshops can be observed to be conducted by engineers and architects. Still no research on the field of design.
3. Start of Institutionalization: The evolution of design in basic house goods and simple consumer goods. Establishment of design identity and design definition are in the process of being established. The first observations of design offices. The beginning of institutionalized design education. The introduction of design magazines.
4. Expansion and Consolidation: The evolution of design in complex objects. Design becomes a known profession. Companies are beginning to hire designers. A variety of design contests

and exhibitions are observable. Specialized design magazines, according to fields under design, are being published.

5. **Maturity:** Design becomes a strategic actor in the corporate environment. Mixed teams are established in the corporate environment and designers become one of the members. Almost all sectors are experiencing the term product development. Books on design are widely available.

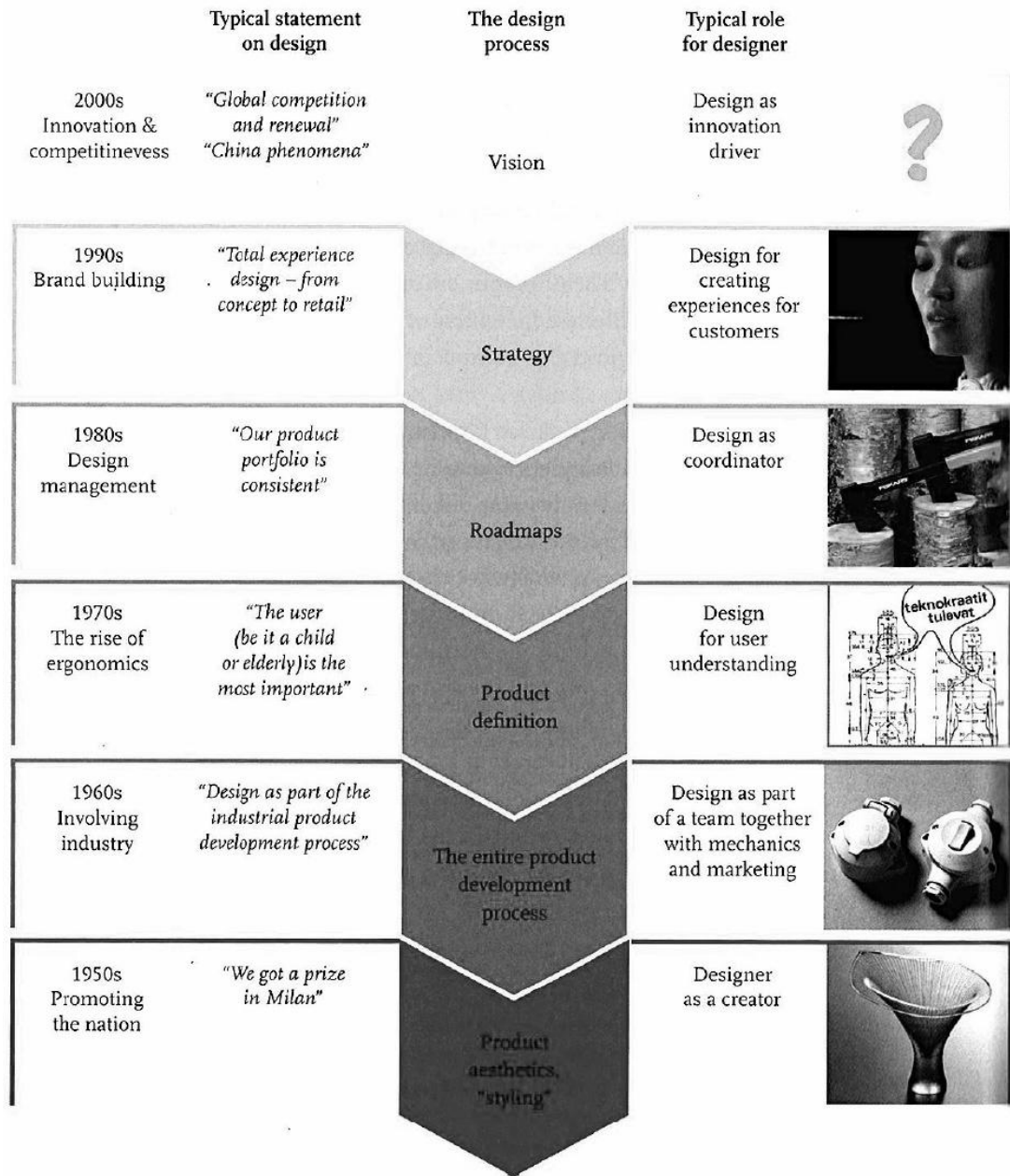


Figure 12 Various roles of the designers (Valtonen, 2005, s. 16)

The evolution of the role of design, defined by both parties, has topics that are important in examining and comparing the role of design in Turkey. The work conducted by Bonsiepe (1999) investigates the situation of the role of design in newly industrialized countries like Turkey, the

definition of Perks et al. (2005), on the other hand, is important in seeing the evolution of the role of design in industrialized countries.

The importance of these studies, whether for an industrialized country or not, emphasizes the state of the role of design. It shows that design has become a multifaceted concept that brings value, quality, competitiveness, branding, reliability, responsibility, profit and other sought after improvements to the corporate environment. In the corporate environment, there are various actors, such as designers, engineers, marketing people, managerial people, etc. which come from different backgrounds that define the role of design. The important issue is the divergence of these definitions and how they establish a design culture and a design language in the corporate environment.

Walsh et al. also define design as “a multifaceted concept which not only includes function and appearance, but which also suggests ease of manufacture and increasing the value of products or providing features that make them sell at a profit” (Walsh, Roy, & Bruce, 1988, p. 202). According to them, the term multi-faceted covers a whole chain of causations such as design, quality (non-price), and value for money.

In a similar approach, Hartmann (2009) argues that design is not only concerned with function and aesthetic, but is a process that concerns various other actors. Hartmann elaborates design as three core characteristics:

- Design is a process and has structure — there is a set of core activities designers engage in, regardless of the domain of design.
- Design is not manufacturing — for physical artifacts, the final realization is done by someone else. For software, the division between design and implementation may be less clear. In both domains, the end product of design is often a specification that will be interpreted and implemented by someone else.
- Design has a client and users — it is accountable to external judgment. Different stakeholders may have conflicting expectations.

(Hartmann, 2009, p. 1)

The difference of perception of the role of design in the NPD process is explained in the table (Table 5) from the study conducted by Goffin & Micheli (2010).

Celaschi, Celi, and Garcia (2012) have investigated the situation of role of design in the global economy and industry. According to them, ‘design is increasingly recognized as a key strategic asset and a source of added value for companies’ and that ‘design is a practice that imagines future perspectives by envisioning future products and processes’. Their study shows that the role of design in the global arena is increasing day by day (Celaschi et al., 2012; p.6). According to them, the main reason for the importance given to design comes from the value included in the design of the object as a result of the design process. With this, design becomes a factor, somewhat like a conductor, that creates value for all the actors and that leads the whole product development process (Celaschi et al., 2012).

Borja de Mozota expresses the importance of value in defining design as ‘an expertise difficult to imitate, is valued by the market, and can arouse a discontinuity in the firm vision of its environment’ (Borja de Mozota, 2003, p. 93) while emphasizing the competitive advantage that it creates (Table 6). According to her; design can create value because it adds an extra value to product image by enhancing its appearance; it brings a systematic approach by generating concept stages and evaluate these stages by user, usability, interface keywords; and creates differentiation by enhancing the quality of the product from performance, efficiency, functionality and originality keywords.

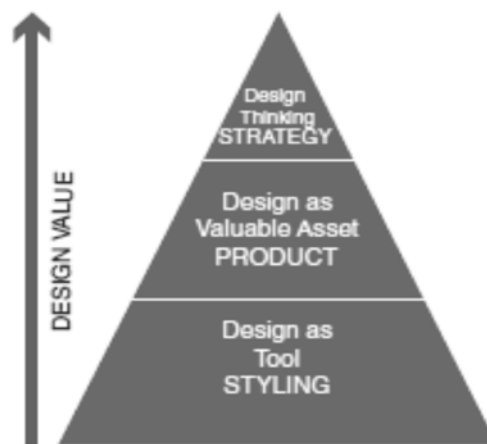
**Table 5 Difference of perception of the role of design in the NPD process (Goffin & Micheli, 2010, p. 32)**

No.	Topic	Designers	Managers	Implications
1	Role of design in NPD	Design plays a central role in NPD.	Design is just one aspect of NPD.	Designers might consider their function as more important than that of other NPD professionals. This could create tensions throughout the NPD process.
2	The basis of good design	Technology, materials, and manufacturing capabilities are important factors in good design.	Good design is functional and aesthetically pleasing, but little attention is given to how it is achieved through careful choice of, for example, materials	Designers will regard technology and materials as essential features of good design and as sources of innovation. Managers might underplay such aspects and so make decisions that inadvertently penalize the overall design product.
3	What is good design?	A well-designed product is original, it makes a provocative design statement, and it evokes emotions in consumers and users.	Exclusivity is a key feature of good designs; this can be achieved also through the "signature" of famous designers.	These different views could lead to tensions, for example, when external designers are used mostly for branding purposes or when designers overstate the role of design as the source of innovation.
4	Goal of good design	The characteristics and the means for achieving good design are stepping stones toward achieving an iconic design.	The results of design are perceived mainly in terms of price and brand.	Attempts to create universally recognizable, archetypal design can clash with pricing and branding strategies, which might favor options that match competitors' product offerings.
5	Changes made to initial designs	Several designers denied that substantial changes are to be expected in the NPD process.	The characteristics of a product will inevitably change during NPD as trade-off decisions are made.	Designers might perceive changes to initial designs as unnecessary, inappropriate, or even counterproductive, resulting in tension between design and other teams.
6	Language	Designers tended to use a richer vocabulary to express what constitutes "good" design, for example, differentiating between unique (meaning "inimitable") and original (meaning "innovative") products.	Managers used a more limited set of terms to explain the essence of "good" design; for example, they used to the word "original" to express both inimitably and novelty.	Managers might perceive differences in vocabulary as irrelevant linguistic nuances, while designers consider them essential in conveying the meaning and significance of a design. This mismatch could lead to misunderstanding in the process.

**Table 6 Value chain and competitive advantage applied to design (Borja de Mozota, 2003, p. 94)**

Design creates a competitive advantage		
Design is an economic competence that creates value by its actions on the principal functions of the value chain	Design is a managerial competence that creates value by its actions on the support functions and on the coordination between functions in the value chain	Design is a resource and a competence that creates value by its actions on the understanding of the company environment, acting on the value chain of the sector by creating a new vision and reinforcing external coordination
Marketing Production Corporate communications	Organizational structure Technology management Human resources management Innovation managements	Prospective Knowledge management Generating a vision

Celaschi, et al. (2012) also emphasizes the importance of value by representing the different values that firms may assign to as a pyramid (Figure 13), at the base of which design is viewed as a tool to develop styling and used as need without any role in the company strategy. In the next level upward, design becomes a valuable asset for the company; it gains a place at the company hierarchy. In the top part of the pyramid, design becomes an integrated part of the company strategy and decision making process. The highest value of design is at the top step. This step is achieved by companies that have integrated “Design thinking” into their management schemes.



**Figure 13 Value levels of design approaches (Celaschi, Celi, & Garcia, 2012, p. 12)**

Aminoff, Hänninen, Kämäräinen, and Loiske (2010) describe “Design Thinking” as “the ability to combine empathy, creativity and rationality in order to meet user needs more effectively and to enable the success of emerging, new ideas” in their noteworthy study about the changing role of design (Aminoff et al., 2010, p.5). According to them, the importance of Design Thinking is its ability to apply methods of problem solving to various areas, even areas that are outside design.

Fathers (2003) quotes Bonsiepe’s explanation on the role of designers as:

I interpret the role of design professionals as being responsible for the quality of use of artifacts and information. Designers are specialists in the quality use of artifacts material or immaterial. Let me add that the domain of “quality of use” includes the formal-aesthetic



dimension that is intrinsic to design and design work, and not simply an add-on that you can dismiss. It also includes environmental criteria. Designers intervene in helping to assimilate the artifacts into our everyday practice (Fathers, 2003, p. 53).

In their study, Perks et al. (2005) characterize the role of design into three different definitions that are given in the table (Table 7). The three characterizations in the table are, design as functional specialism, which is design seen as a resource by business; design as part of multifunctional team, which is design seen as a crucial part of the product development process, and design as the NPD process leader, which is design seen as the main identifier in the innovation process.

**Table 7 Taxonomy of design roles (Perks, Cooper, & Jones, 2005, p. 119)**

<b>Design Role Characterization</b>	<b>Actions</b>	<b>Dominant Contextual Factors</b>
1. <b>Design as Functional Specialist</b>	Design Functional	Incremental Developments Rapid Development Cycles Predominately Internal Design
2. <b>Design as Part of a Multifunctional Team</b>	Design Functional Integration	Radical Developments Slow Development Cycles Internal and External Design
3. <b>Design as NPD Process Leader</b>	Design Functional Integration Leadership	Radical Developments Rapid Development Cycles Predominantly Internal Design Technology and Market Pull Environment

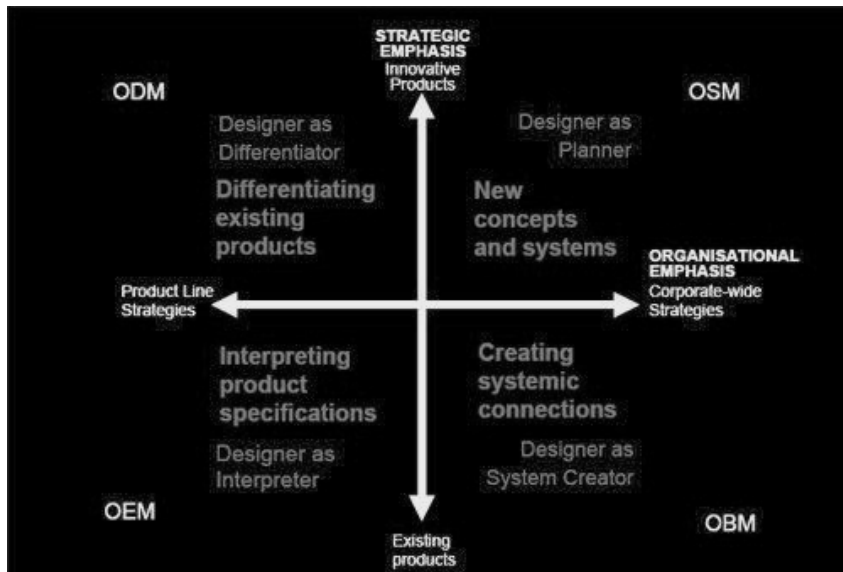
Another researcher on the subject of designer roles, Heskett (2005), presents the conventional view and the new view on the roles of the designer as:

- Conventional View: Designers as Form givers (Responsible for final form in all its details) "The Designer" and "The Design Process"
- New View: Designers as Enablers (Creating systems enabling users to take vital decisions) Plural not singular. Designers function in teams.

Heskett (2005) explains that both of these roles will continue to exist. However, it is possible to state that the enabler function of the designer will dominate as the designer becomes the NPD process leader. Heskett (2005) brings all the current and emerging roles of the designer together in a single slide.

The four different roles, stated by Heskett (2005) are:

- Designer as Differentiator
- Designer as Planner
- Designer as Interpreter
- Designer as System Creator



**Figure 14 Current and emerging roles of design and the designer (Heskett, 2005)**

Vezzoli (2003), on the other hand, states that new designers will have two important roles. These are, being an intermediate between consumer and product development team and being crucial role players in the product development process. A similar statement to the first point made by Vezzoli can be seen in the article by Walsh et al. (1988). Walsh et al., (1988) also stated that the “effective designer” is the one who has the knowledge of what customers want, what are they needed, what is the most efficient way of producing that and does it suitable to the corporate identity and brand image of the firm.

Yazıcı (2009) also defines the current roles and ideal roles of designers in the Turkey from the study conducted with industrial companies, from a variety of sectors, in 2006. The importance of this study is the inclusion of a variety of sectors, the examination of the role of design and the role of designer in this context, and the fact that it is the most recent study conducted on the subject among the limited literature. The views of the participants; the designers and the managers, are given in tables (Table 8 and Table 9).

The designers and the design managers have overlapping views on the perceived roles of the designer in companies. These overlapping views are observable in the middle column in the table (Table 8). The different views of the participants are shown on their respective sides; the views of the designers on the left column and the views of the managers on the right column.

The designers and the design managers have overlapping views, to a lesser extent, on the ideals roles of the designer in companies. These overlapping views are observable in the middle column in the table (Table 9). The different views of the participants are shown on their respective sides; the views of the designers on the left column and the views of the managers on the right column.

**Table 8 Perceived roles of designers according to designers and managers (Yazıcı, 2009)**

<b>Perceived roles of designers</b>		
<b>According to Designers</b>	<b>According to Both Groups</b>	<b>According to Managers</b>
Being creative	<b>Being a member of product development team</b>	Model-making
Defining customer portfolio	<b>Being innovative</b>	Researching and developing products
Managing customer relations	<b>Defining and solving design problems</b>	Understanding of ergonomics and aesthetics
Being a project manager	<b>Determining the market share of products and services</b>	3D modeling
Drawing production drafts	<b>Styling</b>	Defining the budget
Being able to give technical assistance	<b>Designing and making prototypes</b>	Defining user –product relationship
Creating product ranges that differentiate the company from competitors	<b>Choosing materials and production methods</b>	Being a NPD leader
Defining the strategy of the company	<b>Visualizing of products and presentation</b>	
	<b>Developing product concepts</b>	
	<b>Designing based on user feedback</b>	

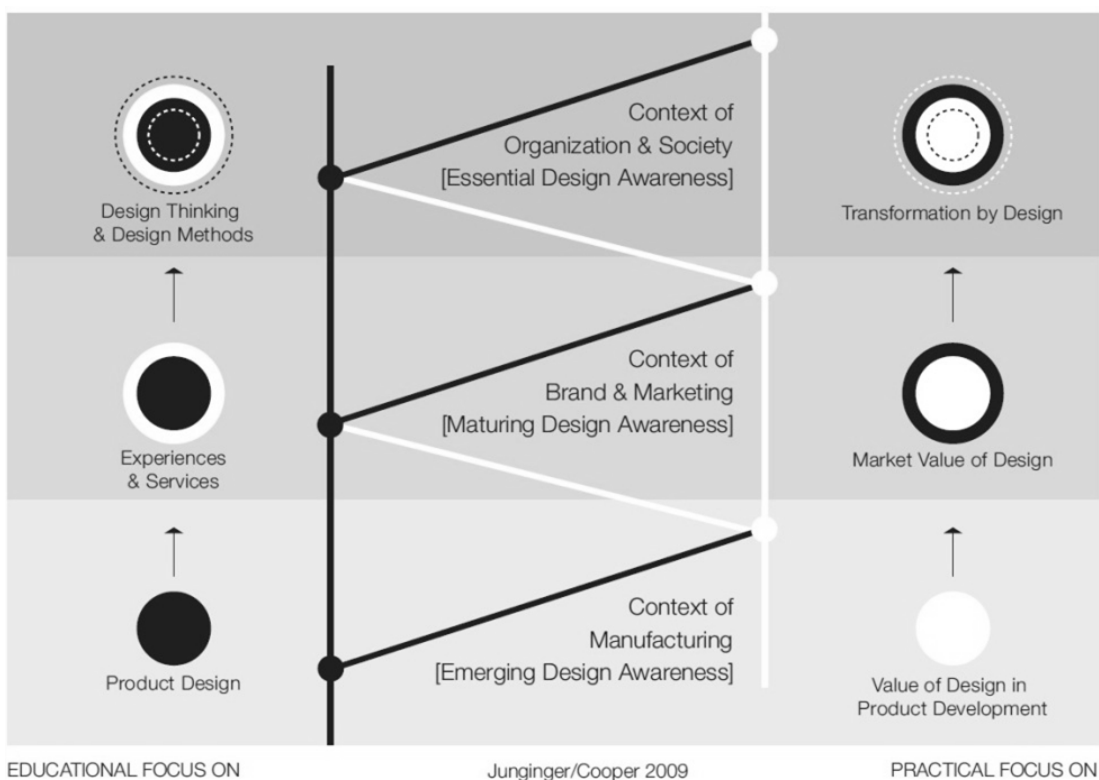
**Table 9 Ideal roles of designers according to designers and managers (Yazıcı, 2009)**

<b>Ideal roles of designers</b>		
<b>According to Designers</b>	<b>According to Both Groups</b>	<b>According to Managers</b>
To convert ideas into products	<b>To be creative</b>	To design packaging and advertising
To be adequate in detailing	<b>To be innovative</b>	To define and solve design problems
To be the one who ‘designs’	<b>To decide on products and target audience</b>	To define market needs
To be a stylist	<b>To be a member of product development team</b>	To design on user feedback
To have a futuristic vision and design according to this	<b>To design and make prototypes</b>	To create differentiating products
To be a member of the R&D department	<b>To visualize products</b>	To create inexpensive and quality products
To develop projects	<b>To have persuasive ability</b>	To bring added value to the company
To decide on product ranges	<b>To manage producer and customer relations</b>	To have knowledge on production techniques
To be the leader of NPD process		To decide inputs and outputs of design process
To design concepts		
To modify existing products and increase product range		

## 2.6. Managing Design and the Role of Automotive Design Manager

In order to understand and examine the role of the automotive design manager, or the chief designer, it is important to examine the management of design as topic. The task of managing design, as implied by this definition, is a managerial task conducted by different management divisions in different firms, and even sometimes by the general manager or the CEO of the company (Joziase, 2011).

Design management includes a wide variety of strategic roles ranging from the inclusion of design in the product development process to the establishing of the corporate identity (Gornick, 2008). However, it is essential for the managers to integrate the design function into the NPD process to achieve a higher level of competitiveness (Goffin & Micheli, 2010). The progress of the roles, and its current state, is described by Cooper, Junginger, & Lockwood (2009) in the figure (Figure 15). The progress of the role of design into the design thinking area signifies the transformation by design of the corporate environment.

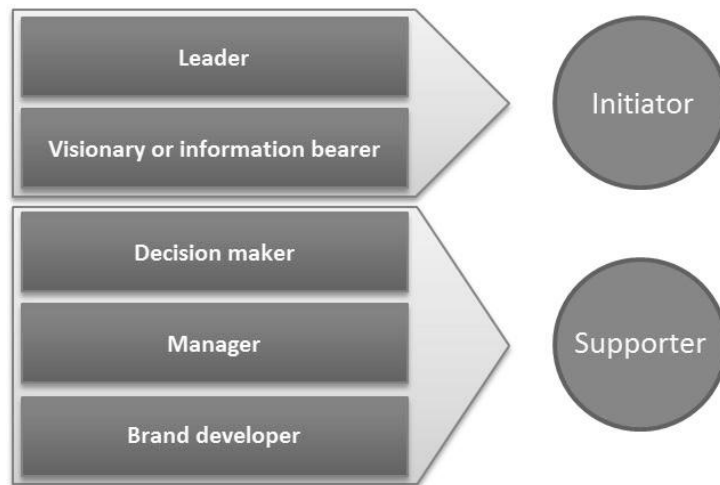


**Figure 15 Making sense of current design management research and practice (Cooper, et al. 2009, p. 52)**

Lee & Cassidy (2007) also mention similar challenges and demands for effective management like; avoiding the adoption of novel ideas that might increase cost, prolonging development time, obviating the deterioration of manufacturability or jeopardizing product quality, taking into account the opinions of the boss or clients and making concessions in changing their designs in order to satisfy these and existing within increasingly regulatory environments.

The role of design management is moving from the supporter position to the initiator position in companies with strong understanding of design. This is a similar step of the role of design becoming the NPD process leader (Perks et al., 2005). The work conducted by Song & Chung (2008) displays the

conceptual model followed by CEOs in design management by improving the study conducted by McNamara (as cited in Song & Chung, 1997).



**Figure 16 Conceptual models followed by CEOs (Song & Chung, 2008, p. 38)**

According to Song & Chung (2008), the initiator recognizes the strategic power of design, that it can be used as a differentiator, an innovation driven factor. On the other hand, the decision-makers, managers and brand developers as the supporters encourage designers to be brave to create new and unique products, be innovative and determined in the decision-making process for new products and designs. Supporters encourage designers to participate in all important meetings during the process of developing new products, not just in the end process of surface styling.

According to Gornick (2008), the design managers do not emanate from design-enhanced business school programs anymore, but are mostly originally design-trained, and sometimes this is a requirement in companies (Green, Smith, Bryant, Cooper, Chung, & Finiw, 2004). This is seen as an accepted and logical career path however, the designer sometimes have difficulty adjusting to the task (Green, et al., 2004). However, the managers from the design backgrounds can sometimes have difficulty in speaking the same language as the marketing or business managers (Green, et al., 2004). These managers may need time to adapt to this new language, but this adaptation can bring the language of art in to the corporate environment (Bangle, 2001).

The managers need a better understanding of the culture, language and approach of designers to increase the impact that design can have on business performance (Goffin & Micheli, 2010). The cultural value keeps the other participants of the NPD from over industrializing the design methods (Bangle, 2001). On the other hand, language is another important factor in the communication between the design and the manager. The different terms used by the designers and managers, and the areas of common terms, are represented in the table ( Table 10) from the study conducted by Goffin & Micheli (2010). The managers may need to be educated in these areas for better communication with their designers (Bangle, 2001).

Harley Earl is a very considerable character in automotive design and the automotive industry. In terms of automotive design managers, he was the first styling chief in the US automobile industry, the originator of clay modeling of automotive designs. Although Earl was not a designer by profession, he had the characteristics of a “design mind” (Green, et al., 2004). There were various achievements in Earl’s history (Lamm, 1990), but the most important one was the establishing of the first automotive styling department, the Art and Color Department, in General Motors (GM), in the

US. This department created a strong alternative to the engineering departments that considered itself as the places that design was conducted in. Earl was a pioneer for the profession of automotive design and has established the importance of automotive design as an added-value to the products and the company.

**Table 10 Different languages of designers and managers (Goffin & Micheli, 2010, p. 33)**

Designers		Managers
<b>Common terms</b>		<b>Form and function</b>
		<b>Aesthetics</b>
		<b>Functionality and usability</b>
		<b>Temporal</b>
		<b>Simplicity of design</b>
		<b>Purchase decision</b>
		<b>Consumer experience</b>
<b>Different terms</b>	Originality	Price
	Iconic designs	Brand
	Emotion	Exclusivity
	Provocative design statement	Design signature
	Technology	
	Materials	
	Manufacturing capabilities	

Harley Earl, as an automotive design manager, had two important qualities that helped establish the design department in the company (Lamm, 1990):

- The ability to recognize and either inspire talented designers to produce good designs,
- The ability to "sell" his design decisions to divisional and corporate management.

The first quality explored by Lamm (1990) is the ability to recognize and improve talent is mentioned by Bangle (2001) as an important ability of automotive design manager (Green, et al., 2004). The ability to organize and manage this talent is an important way to provide value (Fluharty, 2004). Fluharty emphasizes seven actions to achieve this value in the corporate environment:

- Place design skills at the right place and time for influence.
- Gain enough autonomy to build the best skills and studio process.
- Define critical deliverables in the product development process, and deliver consistent excellence.
- Facilitate a collaborative environment.
- "Connect the dots"—illustrate context that no other group can see.
- Make others successful, creating customers for life
- Create a vision of the future with "advance initiative" projects.

(Fluharty, 2004, p. 18)

The second quality mentioned by Lamm (1990) is the ability of the design manager to sell the ideas created by the design team to the managerial divisions of the company. This was also one of the

achievements by Patrick Le Quement during his design management at Renault (Wylie, 2004). Le Quement accepted the role as design manager at Renault with the following conditions.

- The design department would not be responsible to any other department, but only to the CEO of the company
- Stylists became full responsible designers, active in the whole of the automotive design process
- Outsourcing practices were cancelled
- The number of automotive designers was expanded to more than 350 people.

The ability of a design manager becoming an important and decisive figure in an automotive company was not a new happening. The total integration of styling into the product development process was achieved after Earl was appointed a vice-president of the corporation (Gartman, 1994). However, this was also helped by Earl's characteristic personality (Gornick, 2008). Gornick emphasizes five traits of the design managers' personality as the ones who enjoys the challenge of working in an organizational structure; (1) the ability to be interdisciplinary, (2) to be able to explain design to non-designers, (3) never giving-up on design knowledge and persuasive character, (4) to be a good listener and to convey its messages in an effective way to the other person, (5) and to be an entrepreneur and patient person.

This position achieved by Earl in the company hierarchy enabled the ability to convey and argue about the ideas of the design departments to other departments with a much stronger position, becoming a design champion (Green, et al., 2004). A similar position was obtained by Nakamura, the chief designer at Nissan Motor Co., when he turned around the company after taking responsibility of the corporate image, even the design of the showrooms, the corporate logo and the smallest details of media events (Zaun, Todd, & White, 2002).

Chris Bangle, the previous design managers of BMW Group, writes the importance of raising awareness and acceptance of design importance in the company (Bangle, 2001). To achieve this task, Bangle has to stand up for design and show the design team that he would fight for great design in the company. Bangle points to three important guidelines that he followed during his design management:

1. Protect the creative team: Protect them from the unnecessary comments of non-designers.
2. Safeguard the artistic process: Be discreet about the design process. Both you and your team.
3. Be an inventive communicator. Be persuasive and a good mediator between design team and non-designers.

## **2.7. Expectations from Automotive Design and Automotive Designers**

The process and profession of automotive design are important subjects, but there are various expectations from automotive design as a corporate strategy. The expectations of the customer from automobile is defined by Clements & Porter (2006) as it *influences* the customer by its aesthetics; it *communicates* with the customer again by its aesthetics especially at the first sight; it is *versatile and flexible* by its brand; and *deceives* the customer again by aesthetics regardless of its technical features.

The influence of automotive design, the aesthetic function, is regarded as the primary brand differentiator (Clements & Porter, 2006). Robert Lutz, from General Motors, states the importance and differentiating factor of aesthetic function, the styling function, in an interview with Zaun et al.

(2002) as: 'Styling is one of the only avenues left for them to stand out [...] When there's functional sameness, you reach for psychological elements to differentiate' (Zaun, et al., 2002, p. 2).

Although it is argued that functional sameness has been reached in the near past, Adrian van Hooydonk, the chief designer of the BMW Group, argues that the expectations from automotive design will begin to change;

"We are going to have electric engines; we are going to have hybrids. The way we build cars is changing. We have already gone from steel to aluminum and now, we're going to carbon fiber. And all of this means that there is no more rule book. So right now, I think actually it's very exciting to do car design because everything can be re-defined. And there's also new challenges. But overall I think that in the next decade or so, we'll see car design growing apart again (BMW Group Corporate Communications, 2012, p. 1)."

This change, as mentioned by Adrian van Hooydonk, the chief designer of the BMW Group, will also influence the expectations of other companies from their automotive designers. In order to examine the expectations from automotive designers, the expectations from designers in general need to be examined as automotive design is one of the fields under design.

The expectations from the designers in the product development process have changed with their roles (Valtonen, 2005). However, as a general explanation, it is possible to state that the designers are expected, in companies where design is considered an important factor, to move away from its stylistic roles towards becoming the new product development process leaders (Yazıcı, 2009).

There are various important expectations from the designers such as knowledge of their industry and the trends, as well as the technological requirements of their products and being able to define the needs of the clients, as Grzecznowska & Mostowicz (2004) state, most of the expectations from designers are classified as; (1) a new product design development; (2) deal with company's corporate identity and its visualization; (3) redesign of existing products; (4) design analysis, and (5) Design presentations for exhibitions and fairs.

The expectations stated by Grzecznowska & Mostowicz above have similar findings to the work conducted by Korkut and Hasdoğan (1998) in Turkey. Korkut & Hasdoğan (1998) stated the expectations from the designers in Turkey as; (1) modifications of products' functions; (2) modifications of the products' appearance; (3) adaptation of foreign products to the local market; (4) adaptation of foreign products to existing manufacturing conditions.

According to Yazıcı (2009), who conducted a very similar study to Korkut & Hasdoğan (1998), but almost after 11 years, the expectations of managers from the designers have changed into; (1) increase the market competitiveness of the company; (2) work on building the brand; (3) bring prestige into the company; (4) bring prestige into the product development process.

In terms of automotive designers, the expectations of the industry, the companies, and the managers the expectations are similar, but are more oriented towards the industry. Clements & Porter (2006) state that the automotive designer is expected to be capable of communicating his ideas efficiently and convincingly to the other participants of the product development process. This is achieved by the visualization skills of the automotive designers in various media and is considered unique to the automotive design teams (Clements & Porter, 2006).

Hirshberg, a design manager working for Nissan Design International, stated in an interview given to Roca (2000) that the automotive designer is expected to follow and be passionate about the product from its initialization phases to its production.



Harley Earl, in his book *Styling: The Look of Things* (General Motors Co., 1958), states that the automotive designer is expected to handle three factors:

- Function. The stylist must be so familiar with the use of the product that he adds to rather than detracts from its utility.
- Material. The stylist must choose materials in such a way as to take advantage of their singular characteristics.
- Technique. The stylist should be well adapted to the manufacturing process.

The expectations from automotive designers were also listed by Traverso (2012) as:

- Open mindedness: Being open minded to ideas
- Teamwork: Able to work in a team of creative people
- Time management: Respecting the deadlines set by managers
- Selling ideas and presenting projects: Able to explain and convince others about their ideas.
- Making design decisions: To be able to make critical decisions in the designs.
- Hand modeling: Having the skill to hand model using clay or foam
- Being Curious: The need to research
- Honest design: Create designs that stand for ideas
- Training creativity: Have the desire for personal development

These expectations, from automotive design and from the automotive designer, influence the expectations of the companies in the industry and also guide their approaches towards the field of automotive design and the automotive designers. The important point, therefore, seems to be having the right expectations from automotive design and the automotive designer to successfully integrate the profession into the company and to benefit from it.

## 2.8. Formation of Automotive Designers

The formation of an automotive designer defines the traits of the profession, while including topics such the knowledge, the skills, and educational background for the profession. Earl states in his book *Styling: The Look of Things*, that:

The task of developing a new concept of appearance in keeping with the nature of modern methods and materials has come to rest in the capable hands of the modern Stylist, or industrial designer as he is sometimes called (General Motors Co., 1958, p. 8).

This definition signifies the synonym between stylist and industrial design, and gives an idea of the profession in question. Earl, while developing a specialist team of people for the Art and Color department in GM, emphasized the importance of team that could finalize a design from the beginning (Winter, 1996). According to Gartman (1994), Earl had to:

[...] find artists, engineers and tradesmen who had the skills to design automobiles which were not only stylish, but also functional and feasible to produce. This combination of skills was in short supply, and no established training programs were creating it. Earl turned first to the existing bodybuilding shops, both mass-production and custom. Still he feared that the inhibiting traditions of custom coachbuilders might prevent them from delivering the constant newness and difference in style necessary to disguise the standardized sameness of mass-production cars. He hired several trained architects and interior decorators, as well as some ad illustrators. For Earl, the main requirement for an auto stylist was neither technical knowledge nor aesthetic training but a love for cars (Gartman, 1994, p. 19).

Although Earl states that a specialist team is necessary to conduct styling in a company, Yang, You, and Chen (2005) argues that design education needs to be examined in a general manner before it is examined as a subject for either specialists or generalists.

A study conducted by Borja De Mozota (2003), implies the importance of growing in an artistic family environment and the tacit knowledge that is transferred. According to her, people that are raised in environments where design is considered an important subject tend to have better perceptions, more interests and advanced usage of the design language. These people hasten the establishment of a design culture in the companies they work in.

According to the researcher, before the approach to design education can be discussed, the expectations of the industry from the automotive designers need to be determined. The formation of the automotive designer depends on the necessities of the industry for corporate environments. This formation will need to include certain qualifications, depending on the design field, and the education to present and teach these.

### **2.8.1. Qualifications of Automotive Designers**

The first factor that influences the formation of the automotive designer, the qualifications, includes the competences of an automotive designer; their knowledge, their skills, and their attitudes. These factors, defined under qualification, are the essential building blocks of a designer, including the automotive designer. Henriksen & Rolstadas (2010) explains;

[...] *competence* as; “the state or quality of being adequately or well qualified, having the ability to perform a specific role”; define *knowledge* as the “underpinning theory and concepts, as well as tacit knowledge gained as a result of the experience of performing certain tasks”, and define *skill* as “a more ‘practical, close to work’ knowledge” (Henriksen & Rolstadas, 2010, p. 2418).

Perks et al. (2005) also emphasizes the importance of knowledge and skills. The analysis conducted in their study, represented by a table (Table 11), shows that the design function has connections to multiple activities and that these activities may call upon various range of skills.

In an earlier study, Cooper and Press (1995) provided a checklist of skills that were considered requirements in becoming a good designer, a design team staff or a design manager:

- Read design trends
- Give attention to things
- See prestige through outward products
- Have a general catalyst effect
- Have a tendency to leaps of innovation, novelty and lateral thinking
- Vivid conceptualizing, rapid turnover of ideas
- Visual modeling, targeting specific problems
- Produce detailed mock-ups or prototypes for evaluation
- Produce models with increasing precision for costing and so on.
- Achieve control of craftsmanship, detail and finish

(Cooper & Press, 1995, p. 249)

**Table 11 Synthesis of design actions and assorted skills with each action category and in each NPD phase (Perks, Cooper, & Jones, 2005, p. 118)**

Action Categories		2. Integration		3. Process Leadership	
NPD Phases	1. Design Functional	Actions	Skills	Actions	Skills
Identification of the Need	Customer Contact Technology Exploration Idea and Theme Generation	Interaction with Other Functions (e.g., Manufacturing, Marketing)	Communication Diplomacy	Team Assembly Market Observation and Research Market Segmentation Business Case Development	Business and Market Analysis Interpretation Research
Concept Generation	Receiving Brief Design Research (e.g., Shopping Visits, Color and Technology Research) Design Decision-making (e.g., Design Theme and Mood Board)	Interaction with Other Internal Functions (e.g., Manufacturing, Marketing) Interaction with External Stakeholders (e.g., Suppliers)	Relationship Management Diplomacy Personal Promotion	Market and Technical Research Informing the Team Trade Show Visits	Business Analysis Motivating Others Relationship Management Communication Project Management
Design and Development	Designing Prototype, Packaging, and Launch Material (e.g., Sketch Designs, Color Decisions, Catwalk Show) Making Prototypes (Use of CAD and Product Samples) Sourcing and Trial of Materials Testing Prototype	Detailed Negotiation and Liaison with Internal Staff) and External Functions (Suppliers)	Relationship Management Negotiation Project Management Communication	Observation of Response to Design Customer Response Measurement Consider Business Costs Visit to Manufacturers and Suppliers Leading the Team and Stakeholders	Data and Business Analysis Interpretation Leadership
Production	Transferring Designs to Production	Organize Tooling Liaison with Manufacturing and Suppliers	Technical Analysis Negotiation	Monitoring Production Quality Dealing with Manufacturing Problems	Persuasion Motivating Others Project Management
Launch	Designing Launch Material	Visualization		Plan and Review Launch (e.g., Manage Public Relations and Marketing	Business Analysis Planning Motivating Others Persuasion

In addition to these checklist, the study conducted by Borja De Mozota (2003), shows the skills required by designers as ranked by the design managers, represented in the figure (Figure 17).

<i>Key skills designers have (as viewed by managers)</i>	<i>Percentage of managers quote (multiple answers)</i>
Imagination	60%
Sense of detail	56%
Quality of dialogue	50%
Knowledge of material	47%
Quality of perception	40%
Capacity to listen	40%
Capacity to visualize	38%
Capacity to synthesise	35%
Design culture	29%
Sense of touch	24%
Sensibility	24%
Perfection of craftsmanship	21%
Sense of colour	21%
Sense of geometry	12%
Capacity to generate a vision	3%
Anticipation	3%
Lateral thinking process	3%
Knowledge of consumer	3%
Capacity to understand organizational image	3%

**Figure 17 Skills of designers according to managers (Borja de Mozota, 2003, p. 93)**

Another study conducted in Turkey, in 2006, by Yazıcı (2009), defines the important knowledge and skills according to managers as ‘interpretation ability’, ‘observation ability’, ‘visualization’, ‘aesthetical judgment’, ‘problem solving’, ‘creative thinking’, ‘computer aided design’ and ‘knowledge for producible design’. In the findings from the fieldwork analysis, Yazıcı states that:

[...] most of the designers and managers responded to verbal communication’ as an important skill that the designers should have. Likewise, the managers also responded by stating that persuasive ability -which is mostly a verbal skill- is a needed skill for the designers (Yazıcı, 2009, p. 88).

The conclusions of the study conducted by Yazıcı (2009) state the most expected skills from industrial designers to acquire during the new product development process as; creative ability, analytical approach, technical knowledge, visual imagination, research and communication skills (Yazıcı, 2009, p. 85).

Lynn (2006) gives three examples of companies from the global automotive that explain their qualification requirements for automotive designer recruitment industry.

- **General Motors:** Alan Rhodes, Global Senior Manager - Digital and Virtual Design at GM Design, recommends mastering traditional techniques and understanding how to choose the proper tool and then strike a balance between the two. He emphasizes that the computer is just a tool like any other. (Lynn, 2006, p. 93)
- **Mazda:** Mr. Pollard, a Design Manager at Mazda, emphasizes schools that get the most support from industry because of their proximity to corporate design studios and close contact with the latest trends in the California car culture or in the manufacturing hub of Detroit (Lynn, 2006, p. 95).
- **BMW:** Bangle, the previous chief designer of the BMW Group, sees renderings as generally inefficient and thus no longer one of the tools of choice. In Bangle's eyes, the productive, useful work is done in three dimensions (digitally or physically). Sketches, and to lesser extent renderings, are the tools that designers use in conversation about the design (expressed in three dimensions) amongst themselves in the studio. (Lynn, 2006, pp. 96-97)

The importance of the skills that an automotive designer carries may influence the expectations from them, the approach towards them, and their positioning in the company. Not only that, but it may also influence their situation in the design team and their future career path. This is important to consider as the bases of evaluating the in-house automotive designers, together with their other attributes, such as their attitudes in the company and their passion towards their profession.

### 2.8.2. Education of Automotive Designers

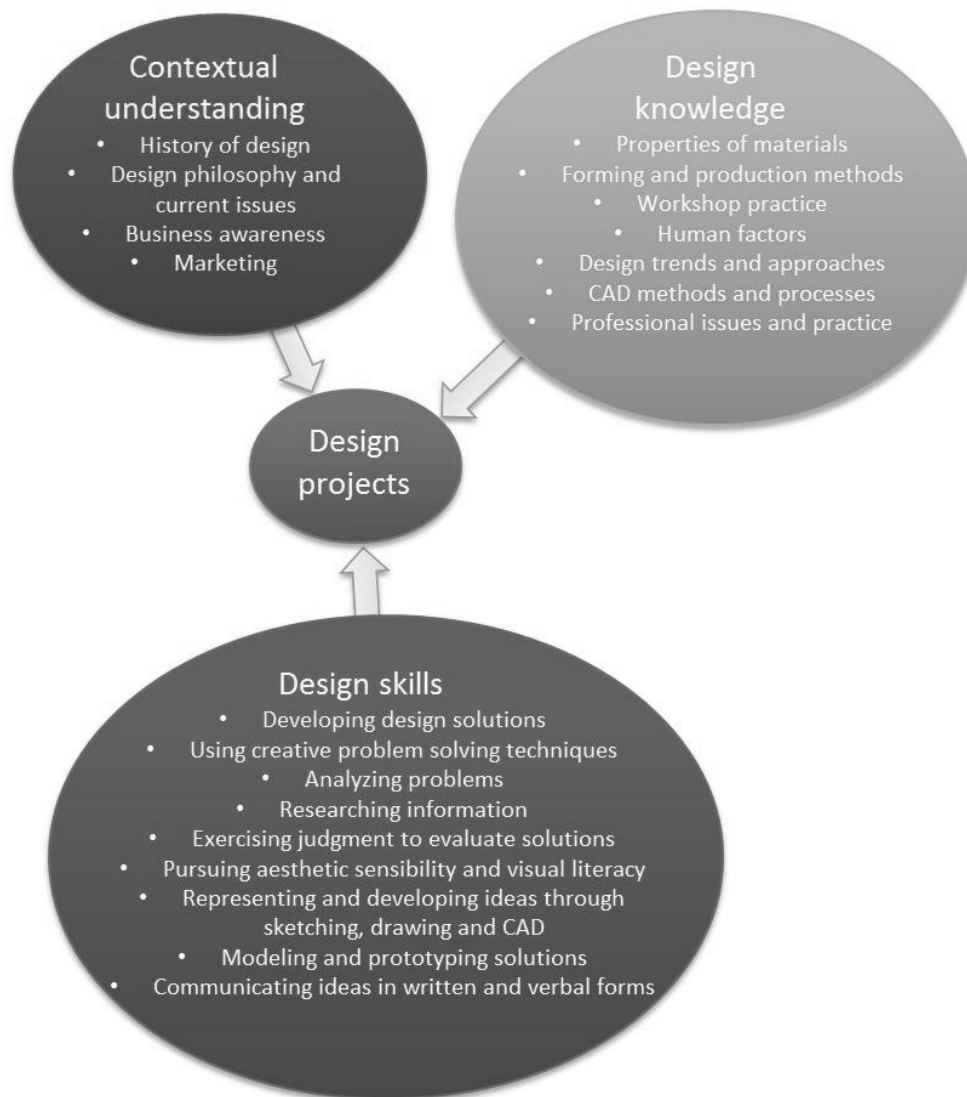
The second factor that influences the formation of the designer, as well as the automotive designer, is their educational background. This is important as the background of the designer also becomes the name of their profession, especially in terms of industrial design, hence automotive design. There are various other professions, such as design engineers or computer drafting personnel, which are also considered a part of the automotive design teams that do not have backgrounds in automotive design (Lynn, 2006).

To understand the education of automotive designers, it is important to examine the education of designers in general. As automotive design, or courses relating to automotive design, are mostly taught under the industrial design department in countries such as the US (Lynn, 2006) and in Turkey (Table 12), it is important to examine the education of industrial design as well.

In a general design education perspective, Cooper and Press (1995) states that design education is used for training students, so that they are able to develop creative skills and creative thinking for a better design solution. The bubble diagram relating to this explanation is represented in Figure 18.

In terms of industrial design, ICSID (2012) suggests that a comprehensive ID education program should at least educate students in three categories of competency. First generic attributes like problem definition, problem solving, idea generation, communication skills; then specific industrial design knowledge like design- thinking, design process, design theory, design methodology, user-concerned issues, rendering skills, material knowledge, production process knowledge, design management, model making, CAD skills, etc. and lastly integration strategies of system integration.

The views on design education also include the views on how design education should proceed and progress to accommodate the future visions for design and the designer.



**Figure 18 Nature of design education together with skills, knowledge and contextual understanding (Cooper & Press, 1995, p. 21)**

Yazıcı (2009) states that:

[...] industrial design education need to teach students to explore the entire design process, involve them to identifying a need, develop a concept, sketching, model-making, prototyping, manufacturing and marketing the product—all with a concern for social, cultural and environmental concern (Yazıcı, 2009).

As Fathers (2003) states, design education has to rethink its foundations, that are taken for granted, and “academized” and “bureaucratized.” The education in design schools need to enable the students to receive a design education that carries the necessities of the profession; the knowledge and skills, but also concentrate on the business side as well (Cooper et al., 2009).

Lee D. Green, Director of Corporate Identity and Design, IBM Corporation, in an interview to Green et al. (2004) states the need to address the need for a more business oriented education and to provide a curriculum that includes design management (Perks et al., 2005). However, the business

oriented education or the necessary knowledge and skills cannot be expected solely from educational institutions, companies also need to play a role in giving this education (Green, et al., 2004).

The necessity of change in design education is also stated by Aminoff et al. (2010) as 'with respect to education in design, greater internationality, business expertise and a common language between professions were called for' (Aminoff et al. 2010, p. 35). Marco Steinberg, the Director of strategic design at SITRA, stated in an interview that;

[...] In view of the changing role of design, the slowness of reform in the academic world also poses a challenge. The academic world is proceeding at the same pace as 200 years ago, whereas the world is continually changing. We need new talent from the pipeline but we can't afford to wait – change is needed now (Aminoff et al. 2010, p. 47).

Yang, You, and Chen (2005) also state the necessity of change in the education of design:

[...] First, the extent and content of industrial designers' work are currently different from those in the past, but there is little updated information about ID employment in the job market. Therefore, before they graduate, ID students are not well prepared to equip themselves with the knowledge and skills required for employment (Yang et al., 2005, p.155).

One of the earlier studies to be conducted in the field of industrial design education in Turkey, Korkut & Hasdoğan (1998) stated that the industrial design education in Turkey is lacking in the following areas and needs improvement or re-approach to the way they are implemented into the curriculum:

- The "no specialization" policy in industrial design education,
- The lack of enough education in computer-supported design, production cost analysis, materials and manufacturing methods,
- The lack of enough education in marketing and design management,
- The lack of enough education in communication skills.

However, the first pointer from the above study, the specialization of industrial design education, which also concerns the field of automotive design education, has not been implemented to a successful degree in Turkey. The current programs that teach industrial design in Turkey have been examined using their announced curriculums from their websites. These are given as a table (Table 12) according to their programs and/or courses in automotive design or relating fields; transportation design, car design etc.

The dark grey marked areas represent departments in universities that do not have a specialized curriculum in automotive design or teach any automotive design related courses. The light grey marked areas represent departments in universities that have courses relating to automotive design. It is also possible to examine that none of the departments that are currently teaching or have just begun taking students have specialized programs for automotive design. It is important to emphasize that specialization in terms of industrial design education, especially in the case of automotive design, has not been reached in Turkey.

The establishment of automotive design and the specialization of the profession dates back to the early years of GM. The first documented automotive design manager, Harley Earl, believed that the General Motors needed talented and skilled designers (Nesbitt, 2004). However, the profession of automotive design education did not exist in the 1930s. Earl employed people from various professional backgrounds in the early days of the Art and Color department in GM, including

illustrators, engineers and other professions to conduct automotive design (Lamm, 1990). This approach created problems in the creativity side of the automotive design process. Earl worked closely with the Art Center College, California, to develop a specific automotive design education program within the school's industrial design department (Nesbitt, 2004).

**Table 12 Automotive design courses in universities that teach Industrial Design that are accredited by The Council of Higher Education (as of December 2012)**

No.	University Name	Department Name	Name of Course
1	Anadolu University	Department of Industrial Design	
2	Atılım University	Department of Industrial Product Design	
3	Bahçeşehir University	Industrial Product Design Department	
4	East Mediterranean University	Industrial Design Department	
5	Doğuş University	Department of Industrial Product Design	ETB 324 Transportation Vehicles Design (Elective)
6	Gazi University	*	
7	Haliç University	*	
8	Işık University	Department of Industrial Product Design	ETB 473 Automotive Design I (Elective) ETB 475 Automotive Design II (Elective) ETB 372 Interior Design of Transportation Vehicles (Elective) ETB 374 Modeling for Transportation Systems (Elective)
9	İstanbul Arel University	Department of Industrial Product Design	
10	İstanbul Bilgi University	Industrial Design Department	
11	İstanbul Technical University	Department of Industrial Product Design	
12	İzmir Economy University	Industrial Design Department	
13	İzmir Institute of Technology	Department Of Industrial Design	
14	Kadir Has University	Industrial Design Department	
15	Karabük University	Industrial Product and Design Department	
16	Marmara University	*	
17	Melikşah University	Industrial Product Design	EUT 315 Automobile Design (Elective)
18	Mimar Sinan University	Department of Industrial Design	
19	Okan University	Department of Industrial Design	
20	Middle East Technical University	Department of Industrial Design	ID429 Seminars and Workshop in Automotive Styling (Elective)
21	TOBB Economy and Technology University	Department of Industrial Design	EÜT 441 Transportation Vehicles Drawing (Elective)
22	International Cyprus University	Department of Industrial Products Design	INPD 490 Transport Design (Elective)
23	Yaşar University	Department of Industrial Design	
24	Yeditepe University	Department of Industrial Design	INDD 352 Automotive Design (Elective)

\*Departments without English webpages



In countries such as the US, the relationship between the educational facilities, such as universities, and the companies are very important for recruiting potential automotive designers from schools. This relationship also influences the formation of design centers of companies, and the formation of faculties in the design schools (Lynn, 2006).

The importance of design education, and the specialization of automotive design education, is an important aspect in the formation of the automotive designer. However, (1) this specialization of the automotive design education, and (2) the investment, figuratively and literally, of the automotive industry in Turkey in the education of automotive design, needs to improve for the automotive industry to achieve its visions and goals; to achieve better designs and increased output in terms of conceptual design work in automotive design.



## CHAPTER 3

### METHODOLOGY

Two factors played a key role in choosing the research method for the field study:

- The small number of in-house automotive designers,
- The research being first of its kind done with the in-house automotive designers.

Considering these two factors, a research method that depended on former knowledge was not suitable. A method that used pre-determined answers to questions or a survey with pre-determined answers was not appropriate because of the lack of former research conducted in the area. A research method that would gather the most amounts of data and a way to receive unsolicited information from the field study participants were needed.

There were also other factors for the construction of the framework for this thesis. These factors were stated by Schensul as the level (what level of society the study focuses on), time availability (can the study be conducted in the timeframe available), financial resources (can the study be conducted with the available resources), and cultural or situational appropriateness (ethical and privacy concerns) (Schensul, 2008, p. 522).

The level of the society the study focuses on is a very specific group; university graduates from a certain background. However, there are professionals, in the field of automotive design, that were self-taught, with different backgrounds. To interview such a specific group and to extract the right information, the interviewer needs to gather as much knowledge as possible, about the field, beforehand to prepare the right questions.

Because of the necessary deadlines of the study and to keep the study relevant, the timeframe of the study needed to be kept short. For this reason, the interviews and the decryptions needed to be completed as fast as possible to be implemented into the study.

The study also needed to be financed by the researcher, causing tighter schedules to decrease the time spent in lodging and away from the researcher's professional life. This necessity forced the researcher to conduct more than one interview in one day.

There were also concerns for situational appropriateness, as the automotive sector is a very private sector and the companies are not very open to observation. This concern of the companies needed to be appeased by receiving the required permissions from the companies and the personnel. There were also certain agreements between the interviewees and the researcher on the allowances for the disclosure of certain knowledge. All of the above factors and factors such as available research material on the subject were all considered and found viable for conduct of the study.

The methodological framework chosen for the study was the use of the qualitative approach, as it allowed open-ended questions to extract the emerging approaches while being able to make interpretations of the data (Creswell, 2003). The analysis of the interviews contains a quantitative approach to display the data for easier explanation of the outcomes from the field study interviews. However, the thematic analysis employed was later approached with a qualitative approach in the discussions.

The process of automotive design needs to be observed from the viewpoint of a social perspective. The social perspective is important as it is used in this thesis to define a group of people, which are a very small number in Turkey, called the automotive designers, or the industrial designers working in the automotive industry in Turkey as designers of automotive products.

### **3.1. Research Questions**

The research questions were formulated and refined in the beginning phases of the study to pave way and direct the study in the direction the researcher wanted to progress. There are many sources behind the formulation of the questions. These sources include the literature review regarding the situation of design and designers in different industries in Turkey, the dialogues with automotive industry experts and automotive designers currently working in the automotive industry in Turkey, and the research conducted in the automotive field in Turkey.

The accumulation of information from these sources, in time, allowed the researcher to construct the questions below.

- **What are the visions and goals of the automotive industry in Turkey?**  
This question is related to the future of the industry and is about the requirements that are needed to be fulfilled to have success. It is a broad question that seeks an answer that is partially outside the thesis scope. The reason for question is to find out the needs and wants of the industry without specifically relating to automotive design. The literature review will be examined for the planned visions and goals of the industry and will be compared to the findings from the field study.
- **What is/are the role(s) of the in-house automotive designer in the automotive industry in Turkey?**  
This question is seeking the answer to the title of this thesis. The reason why this question is the last question in the series of main research questions is critical. The first two questions need to have answers that include the automotive designer in the visions and goals of the companies for this question to carry any meaning. This question expects answers that are not only concluded with the automotive design process, but answers that can expand to topics such as image making, marketing, managerial duties/responsibilities and so on that industrial designers working in automotive companies might be involved in. The findings from the study will be examined for the roles of automotive designers in the industry to answer this question.
- **What role does automotive design and the in-house automotive designer play in reaching the visions and goals of the automotive industry in Turkey?**  
This question, although in relation to the one above, is seeking an answer in detail about the scope of this thesis. The question is necessary to determine the situation of automotive design and automotive designers in relation to the visions and goals of the industry. Literature review and the findings from the study will be used in comparison to find the answer to this question.
- **What are the existing strategies to achieve success through industrial design in the industry in general and automotive industry specifically?**  
This question is seeking the answer to a comparative issue and is trying to understand the relationship between the use of design in other industries and how this use compares to the use of design in the automotive industry. This is crucial in understanding the differences and similarities between different industries where industrial designers are employed and their

roles are defined. Literature review will be used to find the existing roles of designers in different industries as well as the automotive industry.

- **What can be recommended to the companies in the automotive industry in Turkey to achieve success through automotive design and in-house automotive designers?**

This question is seeking the answer that will be given by the researcher as a proposal in the conclusion of this thesis. The findings from the literature and field study phases of the thesis will give a state-of-affairs view on the current situation but, the thesis will also try and give strategic recommendations for the automotive industry in Turkey to achieve higher success through the use of automotive design and automotive designers in its product development process. The literature review and the results from the findings will be used as a basis to make recommendations for the automotive industry in Turkey.

### 3.2. Concept Map

Concept maps are a way to explain the conceptual during the initial phases of a study. Schensul (Methodology, 2008, p. 518) states that “Qualitative researchers are best advised to generate a formative or exploratory conceptual model prior to beginning a study. This model is sometimes referred to as concept mapping, a process that identifies domains and the relationships among them”.

As Novak (2008, p. 1) defines it in the technical report: “Concept maps are graphical tools for organizing and representing knowledge”. These maps are models to better understand the underlying concepts and relationships between subjects and objects of a study.

In the concept map, there are the concept keywords, which are in rounded corner boxes, defined by Novak (2008, p. 1) as “[...] *perceived regularity in events or objects, or records of events or objects* [...]” and there are propositions, defined as “[...] *statements about some object or event in the universe, either naturally occurring or constructed. Propositions contain two or more concepts connected using linking words or phrases to form a meaningful statement*” (p. 1). The main concept is written on the top of the list, and using propositions, is connected to other concepts. Every definable relation between each and every concept is sought, as much as possible.

The concept map begins with the reference question the study is seeking and this question becomes the *focus question* (Novak & Canas, 2008). The focus question for this study is “What is the role of the in-house automotive designer in the automotive industry in Turkey”. Although there are many objects of interest in this question, such as ‘role’, ‘in-house’, ‘automotive industry in Turkey’, the researcher believes that the main object that is being studied and asked about is the ‘automotive designer’. The concept map (Figure 19) was created using the application IHMC CmapTools (Canas, et al., 2004).

The outcome from the concept map was used as a starting point for the preparation of the questions during the pilot study and later on in the field study. The relationship between concept keywords, their influences on each other and the hierarchy that they produce were also used as a structure for the ordering of the questions in the interview.

The concept map is an ongoing process. More concepts are added, some are modified and some are removed. The latest state of the concept map (Figure 19) was defined before the interview questions were finalized.

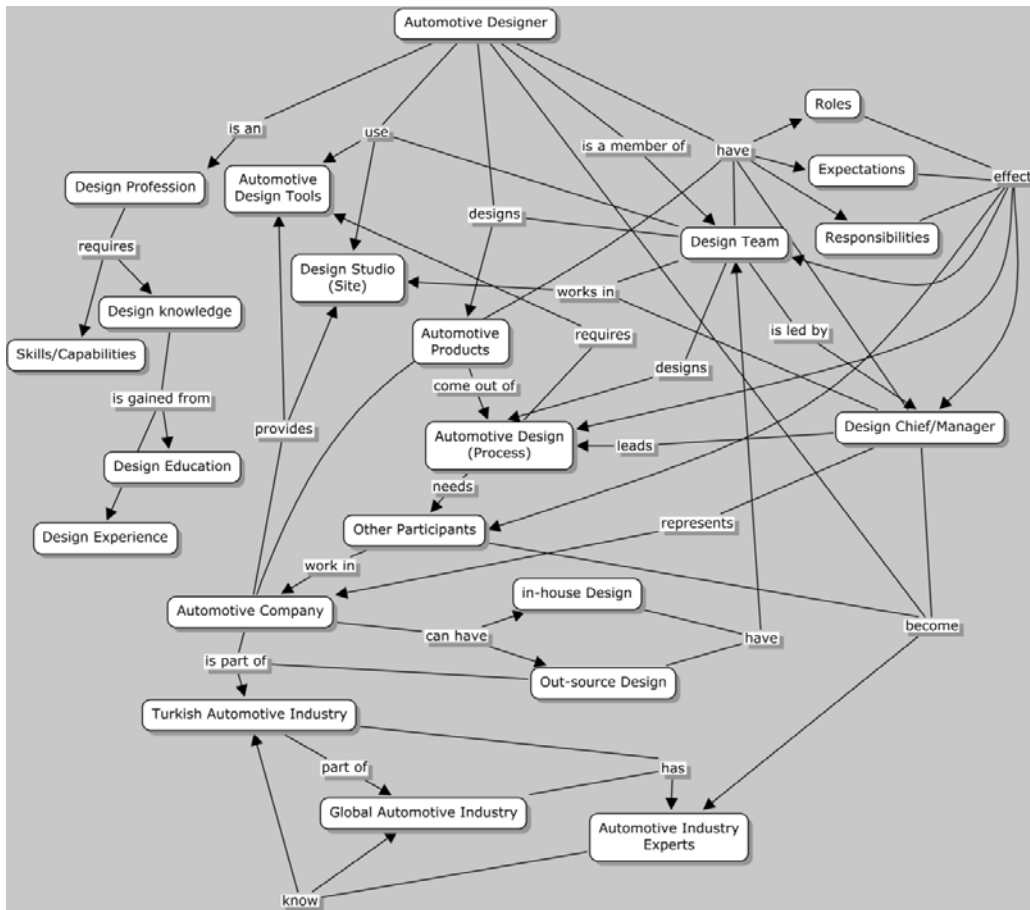


Figure 19 Concept map of the study

### 3.3. Site Selection, Study Population and Study Sample

Site selection can be defined as the location where the research takes place (Schensul, 2008, p. 518). All the field research in this study, the pilot studies and the interviews, were conducted at the locations of the interviewees.

Besides automotive designers, this research also includes other participants that were involved with the automotive designers or the automotive industry. These participants are either directly involved and play critical roles in shaping the roles of the automotive designers or are guiding figures in the visions and goals of the automotive industry in Turkey.

The population concerning the field study in this research was determined based on the factors influencing the role of automotive designers and the industry they work in. It was decided early on that studying the in-house automotive designers solely would not give a full account of their current state and their roles, as they do not function as a separate entity inside companies. This necessitated the examination of the groups that affect the automotive designers work and explain the status quo.

This examination showed that there is a group that affects the automotive designers' work; the automotive design managers (also called Chief Designer). The responsibility of the automotive design manager is to lead the design team that is formed up of automotive designers. There is another

group that does not necessarily affect the automotive designer directly but, has the ability to explain the status quo of the industry; the automotive industry experts.

The three groups of subjects that were selected for research were selected with different methods. The methods used will be explained under the appropriate headings below.

#### **The in-house automotive designers**

The whole population consists of industrial designers currently working in the automotive industry in Turkey and doing work related to automotive design.

The major gathering of automotive manufacturers in Turkey, in terms of economic value, is under the Automotive Manufacturers Association (OSD). For this reason, the automotive designers working in the companies that are members of OSD were noted as candidates for the preliminary research.

This preliminary research, to find automotive designers, was conducted by contacting the companies, which are in the category of automotive design as defined in the definition of terms, listed in the OSD 'members' website page (OSD, 2011), using two methods. The first method was by e-mail. The corporate websites of the companies were used to find the appropriate e-mail addresses for these departments. Some of the companies had not published the email addresses for such departments, in those cases, the general inquiry email addresses were used as the contact e-mail or they were contacted by phone.

An electronic letter was drafted (Appendix A) and was sent to the public relations departments or general inquiry departments of companies, requesting information relating to the employment of automotive designers in the company. The amount of replies received from the companies was unsatisfactory to calculate the number of total automotive designers working in the member companies of the OSD.

The second method used to contact the companies was by phone. The phone numbers of the public relations departments of the companies were obtained through the corporate websites and if the department was not listed, the general inquiry phone number was used to reach the companies' public relations departments. Some of these companies were reluctant to give information about their employees over the phone. They requested that I contact the relevant department and get in touch with the automotive design managers of appropriate departments or forwarded me to relevant departments. After reaching the relevant departments of the these companies, the researcher was able to introduce himself, give information about the research and his background and ask for the number of automotive designers currently employed. This proved out to be a more successful method in the latter phase of the study, the field study phase, as the researcher was able to establish a familiarity, over the phone, with the automotive design manager of the company.

The companies, which did share information over the phone, shared information only about the number of automotive designers employed in the company but, did not share their names or any other information with the researcher.

The information gathered up to this point was used as the as the base for the pilot study and more information will be given under the relevant heading.

After the pilot study was conducted, a more thorough search was conducted to find and contact with all the available automotive companies in Turkey that manufactured vehicles on an industrial scale. Unfortunately, a listing of these companies was not available, the list of companies that were used by the Ministry of Science, Industry and Technology and the Ministry of Development are taken from the lists prepared by OSD, The International Organization of Motor Vehicle Manufacturers (OICA) and regional chambers of industry. These lists are concentrated mostly on manufacturers that export

products rather than manufacturers for the local market. The researcher tried to gather data from websites that printed news about automotive firms and was able to establish the following list. This list contains all the companies that were considered for this research during the fall of 2011.

- ALPİN	- ALTINBOĞA	- ANTOR	- ASYA MOTOR
- BİSAN	- BMC	- DIARDİ	- ERSENER
- ERTUĞRULLAR	- ESTRAK	- ETOX	- FABAEURO
- FİAT	- FOLKVAN	- FORD	- GÖZÜKARA
- GÜLERYÜZ	- GÜNHAN-ARK	- HAZEY TÜRK	- HİDROACAR
- HOBİMAK	- HONDA	- HYUNDAI	- İSOBUS
- KANUNİ	- KARACABAY	- KARINCA/AHS	- KARSAN
- KUBA MOTOR	- LİFAN	- ISUZU	- MAN
- MERCEDES BENZ	- MONDIAL	- MOTORAN	- MOTOSAN
- NUROL	- ONUK CARS	- OSCAR	- OTOKAR
- OTOSER	- OYMAN	- ÖZMAKTAŞ	- PALME
- PANCAR MOTOR	- Pİ MAKİNA	- RAMZEY	- RENAULT
- SANKO/MST	- TATA TÜRKİYE	- TEKNİK YAVUZ	- TEMSA
- TEZ AUTO	- TORUKCARS	- TOYOTA	- TT MOTOR
- TURCOTO	- TÜMOSAN	- TÜRKAR	- TÜRKKAR
- UZEL	- YAĞMUR TARIM	- YAVUZ MOTORS	- YUKİ

**Figure 20 List of automotive companies in Turkey that were considered for the research (2011)**

All of these companies were contacted by phone and data was gathered from the ones that the researcher was able to reach. Most of these companies, although listed as automotive vehicles production companies, are not in the business of producing complete automotive vehicles. They are mostly companies that manufacture parts for automotive vehicles, parts for agricultural machines/vehicles or mechanical parts for machinery.

Further research showed the companies that produce and export vehicles from Turkey and the locations of their factories, as seen in the figures (Figure 21).



Foreign Owned Companies	Equal Ownership Companies	Turkish Owned Companies
Honda (100% Honda Motor Co.)	Hyundai Assan (Equal ownership Hyundai Motor Co. and Kibar Holding)	Anadolu Isuzu (Anadolu Group owns 53.55%)
MAN (99.9% MAN Truck & Bus AG)	Ford Otosan (Equal ownership Ford Motor Co. and Koç Group)	Askam (100% Çiftçiler Holding)
Mercedes-Benz (67% Daimler-Benz AG)	Tofaş-Fiat (Equal ownership Koç Holding and Fiat S.p.A.)	B.M.C. (100% Çukurova Holding)
Toyota (100% Toyota Motor Co.)		KARSAN (100% Kıraca Holding)
		Otokar (100% Koç Group)
		Oyak-Renault (51% Oyak - 49% Renault S.A.)
		Temsa (100% Sabancı Holding)

Figure 21 Companies operating in Turkey that produce and export vehicles

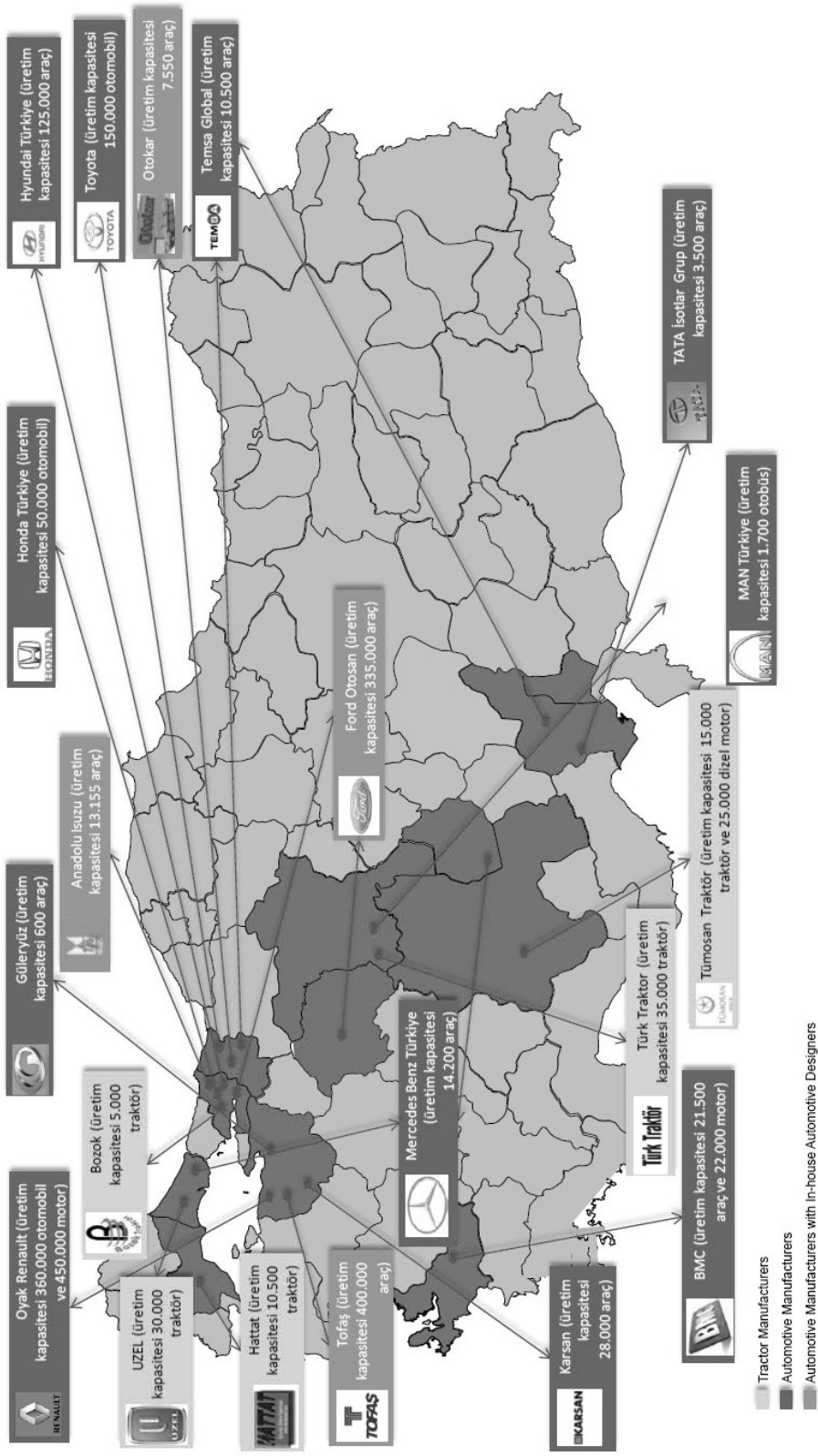
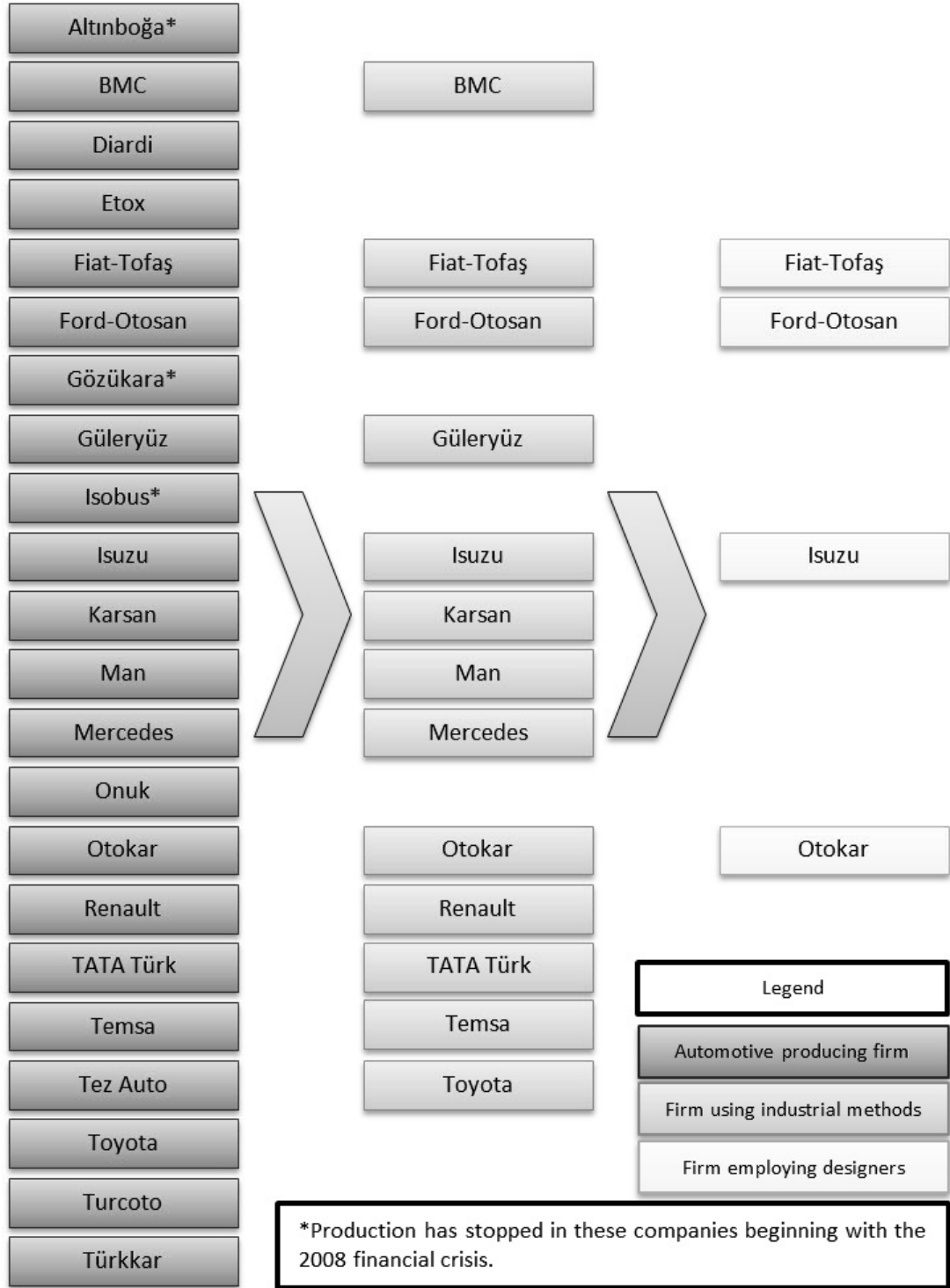


Figure 22 Map of tractor and automotive producers in Turkey modified to show automotive designer involvement (Investment Support and Promotion Agency, 2010, p. 14)



**Figure 23 Selection of companies that employ in-house automotive designers (February 2012)**

The companies listed on the left in the figure (Figure 23) were found to be the companies that are concentrated on producing automotive vehicles.

From these companies, the ones that were producing vehicles using industrial methods were selected. These are given in the figure (Figure 23) in the middle column.

Data gathered from these companies showed that only four of these companies were employing in-house automotive designers in Turkey. Those companies are given in the figure (Figure 23) on the right column and are listed below with the number of employed automotive designers.

- Fiat-Tofaş (3 automotive designers)
- Ford-Otosan (6 automotive designers)
- Isuzu (2 automotive designers)
- Otokar (5 automotive designers)

This search conducted before the selection of population in the primary group revealed that the number of available subjects was relatively low and applying a method of sampling was not needed. For this reason, the whole population of in-house automotive designers was chosen as the subject of study. The total number of in-house automotive designers working in the automotive industry in Turkey was 16 people in the fall of 2011.

#### **The automotive design managers (Chief Designers)**

It should be pointed out that, in the automotive industry in Turkey, the automotive design manager (chief designer) title is used as a job title, not as a profession title. The automotive design managers are from automotive designer, mechanical engineering or industrial engineering backgrounds.

Findings from the literature review (Section 2.6) state that automotive design managers (Chief Designers) in global brands play a crucial role in their companies. The comparison of this role of automotive design managers in Turkey with their role in the foreign companies would lead to interesting findings and would give direction in understanding the situation in Turkey. If the automotive design managers in the automotive industry are automotive designers, they also become the preliminary investigated subject of this research; if they are not automotive designers, the comparison to the foreign market will put forward interesting data that will need further research to understand the reasons behind this. However, this will be beyond the scope of this research.

Another reason for the inclusion of the automotive design managers is based on the general hierarchy in industrial companies, in the case of this thesis, the automotive industry in Turkey. In-house automotive designers are managed workers in Turkey, with automotive design managers who are in charge of their actions and duties. As the roles of in-house automotive designers are affected by managerial aspects of the companies, the automotive design managers who are in charge of managing the automotive designers, their departments or sections need to be included in the research to have a more thorough account of the roles of the in-house automotive designers. This will also give a more objective view and greater perspective in understanding the roles that the automotive designers undertake in the companies.

Although there are a large number of automotive companies in Turkey, there are only a small number of companies that employ in-house automotive designers, hence a small number of automotive design managers. The whole population of automotive design managers, four in total, was contacted for the study. Unfortunately, one of them declined to be interviewed, stating that it was against company policy.

#### **The automotive industry experts**

This group is defined as the people who have spent large amounts of time in and around the automotive industry to be able to comment on the visions and goals of the automotive industry, in Turkey and globally.

There is no set definition of an automotive industry expert; it is a constructed title for this thesis. Therefore, the people applicable to this title were gathered, according to criteria listed below, from

the recommendations gathered from the pilot study, and the field study, from other interested parties (automotive fans, academicians etc.) and from discussions with the thesis supervisors.

- Currently not representing an industrial automotive company
- Has substantial experience in the automotive industry
- Has substantial knowledge of the automotive design field

Criterion Sampling, which involves searching for cases or individual which fit a certain criteria (Palys, 2008, p. 698), was used in the study after the above criteria were established. Criterion sampling was used together with availability sampling, where the availability of subjects becomes a criterion, to select samples from the list that was prepared.

The selected samples, a total of 8 people were listed as potential participants for the automotive industry experts group. The selected samples were contacted; five of these people were available to be interviewed.

### **3.4. Data Collection**

The data collection method chosen for the study uses the in-depth interviewing method as the primary way of collecting data and input from the subjects.

#### **3.4.1. In-depth Interviewing**

The qualitative approach carries different types of interviewing styles. Fontana (2008, p. 151) states that “[...] certain types of interviewing are better suited to particular kinds of situations, and researchers *must be aware of the implications, pitfalls and problems of the types of interview they choose*”. This is certainly true and was taken into consideration when choosing the type of interview that would be used.

The important factor in this research was to get substantial and in-depth information from the participants (Roulston K. , 2010). To achieve this goal, it was important to let the participants speak freely about the subjects they were asked about. As mentioned before, because the research being conducted was new and original in many ways, a structured interview, with defined answers would be too limiting and would be counterintuitive to the type of research. An unstructured interview would create other problems, such as difficulty in theme generation between different groups of participants and difficulty in conducting comparative analyses’ between participants. For these reasons, an in-between option, the semi-structured type of in-depth interviewing was chosen.

The decision of research method and data collection presented the task of designing an interview, specifically an interview script, to be used as the guide and frame for the interviewer. To successfully design an interview, it was also important to conduct a preliminary research by conducting a pilot study beforehand. This would enable the researcher to check the interview in the field and make the necessary corrections before the final interview design (Van Teijlingen & Hundley, 2004).

#### **3.4.2. Pilot Study**

To achieve a relatively successful pilot study in an area of study without vast amounts of exemplary research, the preparation for the pilot interviews were conducted with the help of preliminary literature reviews from the thesis proposal and with the help of other studies relating to designer roles.

Topics were formed, with the help of the literature review, to guide the formation of questions for the pilot study. These topics were devised in a way to become the main headings or sub-categories that were considered to affect the role of the in-house automotive designer in Turkey.

The explanation of the topics that were used in the pilot study is as follows:

### **Visions and Goals**

Although the visions and goals of each member of the pilot study group (automotive designer, automotive design manager and automotive industry expert) may be different in their respective ways, they are all expected to have ideas about the other members of the pilot study group. These ideas are crucial in seeing how the members of the study view each other and themselves and will lead to a more coherent report.

The automotive designer, automotive design manager and automotive industry expert are expected explain their visions and goals for their own professions, for the companies in the industry and for the industry as a whole.

### **Administrative**

The questions relating to administrative tasks are designed for two groups. One of these (the automotive design managers) examines the administrative issues and its consequences in the smaller group that is the automotive design department (the company view). The other (the automotive industry expert) examines the larger group, which are the companies and their views (the industry view). However, the automotive industry expert is also expected to answer questions about the administrative sections of the companies.

### **Education and Experience**

The topic of education and experience is related to all groups, as it is of vital importance to determine the role of education and experience in the given and expected roles of the automotive designers and automotive design managers. The automotive industry expert does not literally function in the decision making process of assigning roles to automotive designers but, is able to see all of the industry as a whole and does know some of the people who are working in it. Therefore, the automotive industry is expected to answer questions regarding the effects of different types of education and of different experience backgrounds for the automotive designers and automotive design managers.

### **Profession**

The issues relating to having a profession, having the skills needed by the profession and employing the right profession in the right place are all asked to the three pilot study groups. These sets of questions are also in direct relations with the thesis title as it points to the role of a certain profession: automotive design.

In relating to the questions of with the “topic” of profession, the automotive designer is expected to answer questions about the profession of automotive design and the professions of the automotive design manager and how this relates to their decision-making processes. The automotive design managers are expected to answer questions about their professions, about the professions of their team members and specifically about the profession of automotive design. The automotive industry experts are expected to answer questions relating to the profession of automotive design, professions of automotive design managers and to compare these with foreign examples.

These “topics” were found to be effective for each group (automotive designer, automotive design manager and automotive industry expert) of the study. The relations of the main and sub questions with the four topics made it easier to arrange a table to directly compare the key questions and sub-

key questions to the questions that the pilot study group would be expected to answer. The comparison table of the questions that each group would answer can be found in Appendix B (only in Turkish).

All of the pilot study interviews were conducted at the desired places of the interviewees. This required travel to three different cities. Lodging in these cities was not possible to the researcher for work related reasons. This required the researcher to travel to these cities and back in the same day. For this reason, it was crucial to attend to the interviews in a timely manner.

The expectation of the interviewer was for the interviews to take about one and a half hours. This amount of time would be used for the explanation of the thesis project, explanation of the interview process, the questions themselves and for general input from the interviewee.

All of the pilot study interviews were recorded on a cellular phone using an external microphone. The cellular capability of the phone was switched off to prevent unwanted interference with the recordings. The researcher also took notes during the interview process for later evaluation.

The automotive designer interview was the most helpful in correcting an important terminological issue. The word "design" or "designer", as stated by the interviewee, is used to reference "engineering design" or "engineer" in most of the automotive industry in Turkey. This was supported later on by the other interviewees. Some of the questions in the questionnaires used the word "design" or "designer" without a foreword and actually meant "automotive design" or "automotive designer". This terminology became apparent in the first few minutes of the interview as the automotive designer interviewee was experienced with this problem. This was the only issue during the automotive designer interview and was remedied by adding the "automotive" word in front of the word "designer" while asking the questions.

#### **Participants in the Pilot Study**

During the spring of 2008, when the appropriate research method for the pilot study was decided, there were the following companies that employed in-house automotive designers conducting business:

- Fiat-Tofaş
- Ford-Otosan
- Man
- Mercedes
- Otokar
- Temsa

These companies housed a total of 18 automotive designers, which had backgrounds in industrial design education. Because of the relatively small number of available candidates for interview, one automotive designer from these companies, one automotive design manager from these companies and one automotive industry expert were selected based on their availability to do an in-depth interview. Choosing an equal number of samples from each of the interview groups would also make it easier to analyze the data from the pilot study.

It was also decided that choosing an automotive designer and an automotive design manager from different companies, rather than choosing them from the same company, would enrich the pilot study phase and give insight about more than one company's point of view.

The formation of the participant group began with the automotive designer. The criteria in choosing the automotive designer were:

- Sufficient experience in the field (more than 4 years),
- Willingness to cooperate for the study,
- Interest in the study,
- Easier reach.

Unfortunately, there were not many automotive designers that fit the list but, the researcher was able to contact one automotive designer from the list that fit these criteria. The first chosen candidate accepted to participate in the pilot study.

The choice for the automotive design manager was based on the criteria in the following list:

- Sufficient experience in the position (more than 2 years),
- Employing more than one automotive designer (managing a team),
- Willingness to cooperate for the study,
- Interest in the study,
- Easier reach.

An automotive design manager, with these qualifications, was easier to find but, harder to reach because of the tight and busy schedules of this group. The first candidate selected for the automotive design manager interviewee did not reply to several meeting requests from the researcher. Another candidate was chosen, contacted and accepted to participate in the pilot study.

For the automotive industry expert group, a list of criteria was not established as the researcher had a person selected. The candidate had substantial experience about the field and was someone who represented the industry. The person accepted the offer to participate in the pilot study.

### **3.4.3. Interview Design**

In designing the interview, the adaptation of a thematic structure was essential. This was the key point in the structure of the interview design, to design the interview around themes that were also the main concepts of the research (Schensul, Methods, 2008). Thematic coding would not only allow for a more organized interview structure but, would also allow a more systematic analysis session (Ayres, Thematic Coding and Analysis, 2008).

The themes that were used in the interviews were the outcomes from the analysis of the pilot study (Schreiber, 2008). The formation of these themes will be touched up on under the Data Analysis heading. The current themes, short explanations relating to them and the section of the interview guide they relate to are given below.

#### **Design (Section 1)**

This section focuses on the general meaning of “design” and what this means for their company or for all the automotive companies (for the automotive industry expert). The interviewees are also asked to compare their answers with the understating of the word “design” in other local companies and/or foreign companies.

#### **Automotive Design (Process) (Section 2, 4, 6)**

In this section, the interviewees are asked questions about the understanding and approach of their companies to automotive design in general and the process that is behind it. The interviewees are also asked to compare their answers with the understating and approach of other local companies and foreign companies.



**Automotive Designer (Section 3, 5)**

This section tries to understand the interviewees' view of the automotive designer; its definition, its education and background, its relationship with the company and its career path.

**Automotive Company (Section 7)**

In this section, the questions are designed to seek information about visions and goals of the company and/or the person running it. The section also expects to find answers about the company's current situation in automotive design and what the company or the automotive designer can do to improve it.

**Automotive Design Manager (Section 8)**

This section focuses on the automotive design manager and what the roles of this person are in the company. The questions seek to find the expectations of automotive designers from this position, the power of the automotive design manager in the company and the expectation of the automotive design manager from the automotive designers.

**Automotive Industry in Turkey (Section 9)**

This section tries to understand the current state and future standing of the automotive industry in Turkey through the eyes of the interviewees. Questions about the possible improvement to the sector and what the automotive designer can do to help are located in this section.

**Global Automotive Industry (Section 10)**

This section tries to understand the current state and future standing of the automotive industry in Turkey in the global automotive industry through the eyes of the interviewees. Questions about the possible improvement to the automotive industry in Turkey in the global automotive industry and what the automotive designer can do to help achieve this are located in this section.

All the themes had relevant questions under them but, were not organized in a linear fashion. The questions were organized to allow a more flowing interview without letting the interview become too predictable and burdensome for the interviewee, as much as possible. The section themes and their relative sections are given below for each group.

Another factor that was considered in the interview design was the flow of the interview and the maximization of information gathering. This was problematic, as it was experienced during the pilot study, that the participants did not always answer the question or wandered off to other topics. This prevented the researcher from getting answers about the topic, hindered the flow of the interview and caused the interview to take longer than necessary.

The probing technique was implemented in to the interview questionnaire during the interview design process and was also performed, using gestures and verbal inputs, during the interviews. This technique allowed the researcher to extract further explanations from the participants (Roulston K. , 2008).

As mentioned previously, all of the field study interviews were conducted at the working locations of the interviewees. This required travel to five different cities. Lodging in some of these cities was necessary as the researcher had to complete 5-7 interviews in a company. This required the researcher to travel to these cities and stay more than one day at a time.

The expectation of the researcher was for the interviews to take about one to one and a half hours. This amount of time would be used for the explanation of the thesis project, explanation of the interview process, the questions themselves and for general input from the interviewee.

In the beginning of all the interviews, the researcher gave an introduction about himself, his background and his status in the educational field. The introduction continued with an explanation about the study being conducted, the thesis title and the amount of time requested from them. All the interviewees were asked permission about the use of a sound recording device during the interviews (Brinkmann, 2008).

All of the field study interviews were recorded on a professional level sound recorder. The researcher also took notes during the interview process for later evaluation.

All of the interviewees were encouraged to refrain from saying their name or the names of other subjects during the interviews. This was asked of the interviewees to help the researcher in keeping the interviews anonymous. However, this was not always possible and the names mentioned were later edited out on the transcriptions.

The details of the interviews are given below.

### **Automotive Designer Interviews**

The interviews in three of the companies were conducted in a closed meeting room. In one of the companies, the interviews were conducted in the design department of the company.

All of the automotive designers were interviewed one by one. In three of the companies, the interviews took place in closed meeting rooms and interference from outside factors or noise was minimized. In one of the companies, the interviews took place in a general meeting table inside design department and were interrupted seldom because of the placement of the table and the people working around the space.

The length of time the interviews took (rounded to the nearest minute) is given below for all the automotive designer interviewees, the names of the interviewees are replaced with codes defined by the researcher.

- Interviewee 001 – 28 minutes
- Interviewee 002 – 37 minutes
- Interviewee 003 – 36 minutes
- Interviewee 004 – 1 hour 27 minutes
- Interviewee 005 – 1 hour 18 minutes
- Interviewee 006 – 39 minutes
- Interviewee 007 – 54 minutes
- Interviewee 008 – 2 hours 11 minutes
- Interviewee 009 – 1 hour 19 minutes
- Interviewee 010 – 1 hour 3 minutes
- Interviewee 011 – 57 minutes
- Interviewee 012 – 39 minutes
- Interviewee 013 – 43 minutes
- Interviewee 014 – 25 minutes
- Interviewee 015 – 34 minutes
- Interviewee 016 – 48 minutes

### **Automotive Design Manager Interviews**

The interviews in two of the companies were conducted in meeting rooms. One of the automotive design manager interviews was conducted in the offices of the automotive design manager.

Two of interviews conducted with were interrupted by people asking to discuss business matters. In one of these, the automotive design manager had to leave the interview for a short while and the recorder was stopped.

The length of time the interviews took (rounded to the nearest minute) are listed below for all the automotive design managers, the names of the interviewees are replaced with codes defined by the researcher.

- Interviewee 017 – 1 hour 29 minutes
- Interviewee 018 – 58 minutes
- Interviewee 019 – 1 hour 10 minutes

The interviews of some of the automotive design managers took longer than anticipated due to the interruptions that took place during the interviews. During the long interruptions the sound recorder was stopped.

#### **Automotive Industry Expert Interviews**

Four of the five automotive industry experts were interviewed in their companies or offices. One of the automotive industry experts was interviewed in the office of the interviewee's friend.

All of the interviews conducted with the automotive industry experts were interrupted by people asking to discuss business matters. In two of these, the interviewee had to leave the interview for a short while and the recorder was stopped.

The length of time the interviews took (rounded to the nearest minute) are listed below for all the automotive industry experts, the names of the interviewees are replaced with codes defined by the researcher.

- Interviewee 020 – 48 minutes
- Interviewee 021 – 58 minutes
- Interviewee 022 – 1 hour
- Interviewee 023 – 1 hour 1 minute
- Interviewee 024 – 1 hour 41 minutes

The interviews of the automotive industry experts took longer than anticipated due to the interruptions that took place during the interviews. During the long interruptions the sound recorder was stopped.

The field study questionnaires for all the interview groups are presented, in Turkish and English, in the Appendices section of this report; the automotive designer in Appendix E, the automotive design manager interview in Appendix F and the automotive industry expert interview at Appendix G.

### 3.5. Data Analysis

The data analysis consists of two sections. The first section is the analysis of the pilot study. In this section, the results of the pilot study are examined; the outcomes from this study and the influences on the field study are presented. In the second section, the comparative analysis method of the field study interviews is examined and presented.

#### 3.5.1. Pilot Study Analysis

The collected data from the pilot study was transferred on to an apple computer to be transcribed for analysis. The software based transcription made it easier to control the flow of the digital audio tracks. It was also possible to time stamp automatically, with the software, for cross-checking later on during the analyses stage. The software used for this process is called “Transcriva 2” and it was only available on the mac platform (Figure 3.1).

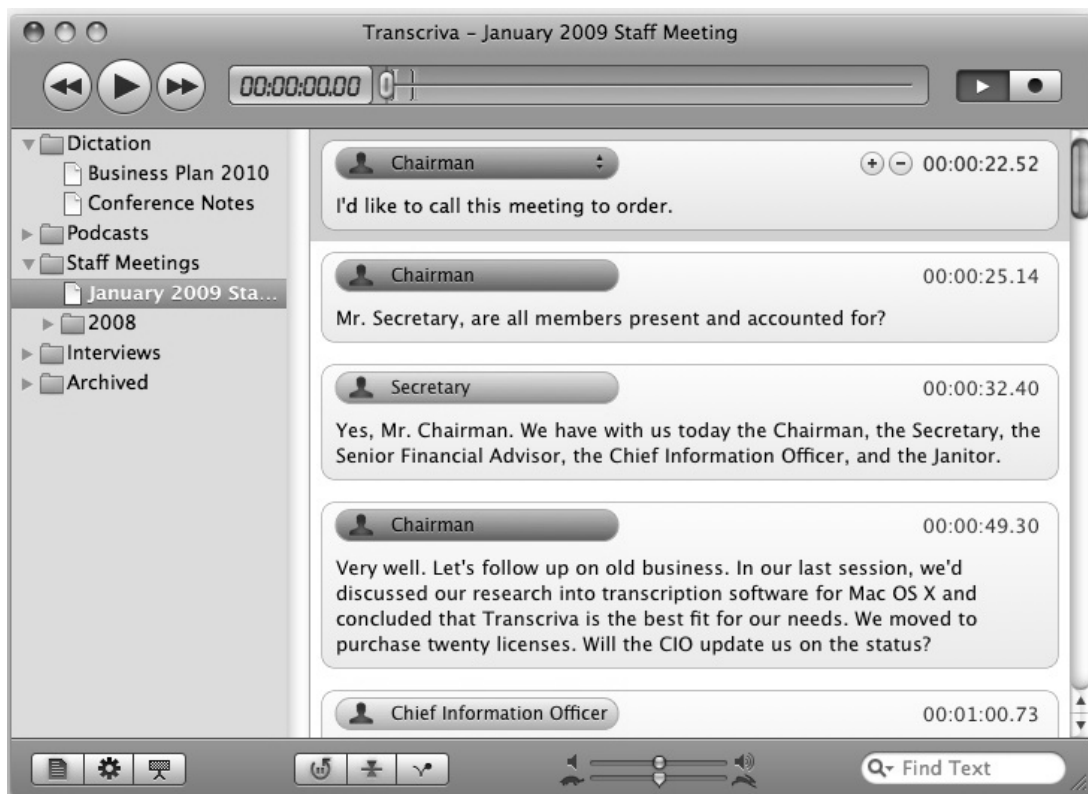


Figure 24 Example screenshot from the transcription software used to transcribe the interviews

The transcribed interviews from the participant were later thematically analyzed for topics of importance to the thesis. The transcriptions were scanned by hand for important themes that were emphasized by the interviewees and were highlighted. The number of times each theme was mentioned in the transcriptions and in what paragraph it passed was also noted.

The extracted themes from the analysis of the pilot study are given as a table (Table 13).

**Table 13 Topics from the pilot study interviews**

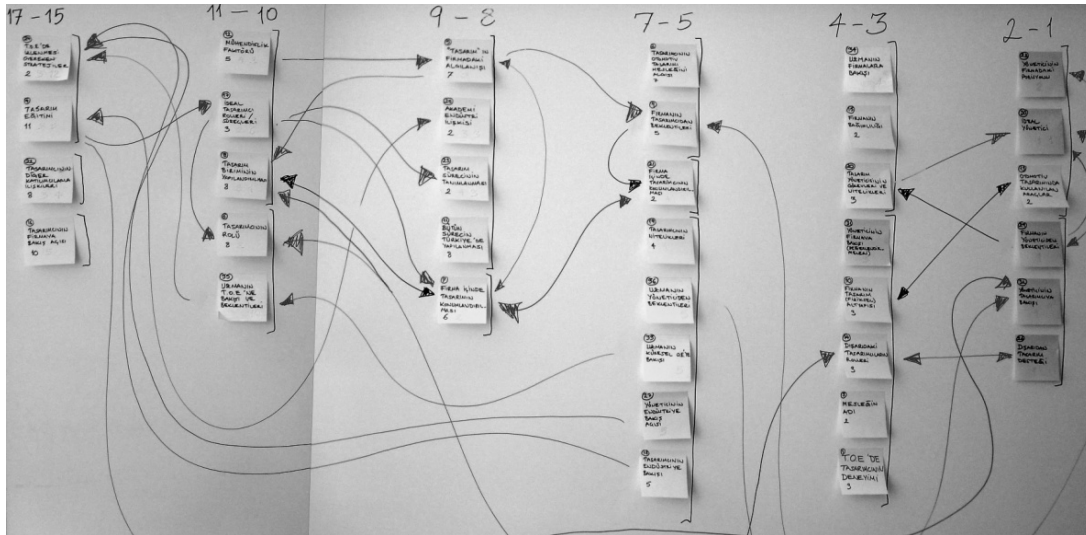
1	The Experience of the Automotive Designer in the Turkish Automotive Industry (T.O.E' de Otomotiv Tasarımcısının Deneyimi)
2	The Perception of the Automotive Designer of the Automotive Design Profession (Otomotiv Tasarımcısının Otomotiv Tasarımı Mesleğini Algılayışı)
3	The Name of the Profession (Mesleğin Adı)
4	Automotive Design Education (Otomotiv Tasarımı Eğitimi)
5	The Perception of Design in the Company (Tasarım'ın Firmadaki Algılanışı)
6	The Role of the Automotive Designer (Otomotiv Tasarımcısının Rolü)
7	The Positioning of Design in the Corporate Environment (Firma İçinde Tasarımın Konumlandırılması)
8	The Structuring of the Design Department (Tasarım Biriminin Yapılandırılması)
9	The Expectations of the Company from the Automotive Designer (Firmanın Otomotiv Tasarımcısından Beklentileri)
10	The Design infrastructure in the Company (Firmanın Tasarım Araçları Altyapısı)
11	The Structuring of the Whole Automotive Design Process in Turkey (Bütün Otomotiv Tasarım Sürecinin Türkiye'de Yapılanması)
12	Relations with Engineering (Mühendislik ile İlişkiler)
13	The Tools used by Automotive Designers in Automotive Design (Otomotiv Tasarımcısı tarafından Otomotiv Tasarımında Kullanılan Araçlar)
14	The Roles of the Automotive Designers outside the Company (Firma Dışındaki Otomotiv Tasarımcılarının Rollerini)
15	The Dependence of the Company (Firmanın Bağımlılığı)
16	The View of the Automotive Designers of the Company (Otomotiv Tasarımcısının Firmaya Bakış Açısı)
17	Ideal Roles of the Automotive Designer (İdeal Otomotiv Tasarımcısı Rollerini)
18	The Views of the Automotive Designer on the Automotive Industry (Otomotiv Tasarımcısının Otomotiv Endüstrisine Bakış Açısı)
19	The Skills of the Automotive Designer (Otomotiv Tasarımcısının Nitelikleri)
20	The Functions and Skills of the Automotive Design Manager (Otomotiv Tasarımı Yöneticisinin Görevleri ve Nitelikleri)
21	The Position of the Automotive Designers in the Company (Firma İçinde Otomotiv Tasarımcısının Konumlandırılması)
22	The Relations of the Automotive Designer with Other Contributors (Otomotiv Tasarımcısının Diğer Katılımcılarla İlişkileri)
23	The Definition of the Automotive Design Process in the Company (Firmada Otomotiv Tasarım Sürecinin Tanımlanması)
24	The Strategies to be Followed by the Turkish Automotive Industry (T.O.E' de İzlenmesi Gereken Stratejiler)
25	Academy-Industry Relations (Akademi-Endüstri ilişkisi)
26	The Effects of Out-Sourced Automotive Design (Firma Dışı Otomotiv Tasarımı Desteğinin Etkileri)
27	The Views of the Automotive Design Manager on the Automotive Industry (Otomotiv Tasarımı Yöneticisinin Otomotiv Endüstrisine Bakış Açısı)
28	The Position of the Automotive Design Manager in the Company (Otomotiv Tasarımı Yöneticisinin Firmadaki Pozisyonu)

**Table 13 (Cont'd)**

29	The Expectations of the Company from the Automotive Design Manager (Firmanın Otomotiv Tasarımı Yöneticisinden Beklentileri)
30	The Ideal Automotive Design Manager (İdeal Otomotiv Tasarımı Yöneticisi)
31	The Views of the Automotive Design Manager on the Company (Otomotiv Tasarımı Yöneticisinin Firmaya Bakışı)
32	The Views of the Automotive Design Manager on the Automotive Designer (Otomotiv Tasarımı Yöneticisinin Otomotiv Tasarımcısına Bakış Açısı)
33	The Views of the Automotive Industry Expert on the Global Automotive Industry (Otomotiv Endüstrisi Uzmanının Küresel O.E' ye Bakış Açısı)
34	The Views of the Automotive Industry Expert on the Companies (Otomotiv Endüstrisi Uzmanının Firmalara Bakış Açısı)
35	The Views of the Automotive Industry Expert on the Turkish Automotive Industry (Otomotiv Endüstrisi Uzmanının T.O.E' ye Bakış Açısı)
36	The Expectations of the Automotive Industry Expert from Automotive Design Managers (Otomotiv Endüstrisi Uzmanının Otomotiv Tasarımı Yöneticisinden Beklentileri)

The themes were also cross-checked between the three participants and were numbered according to the number of times they were mentioned. A different color sticky paper was used for each sample; yellow note for automotive designer, green note for the automotive design manager and purple note for the automotive industry expert. The number of times a participant mentioned a theme was written in color on the posted notes for easier identification; the markings of the automotive designer is black, the automotive design manager is orange and the automotive industry expert is green (

Figure 25). A bigger and colored version of this image is presented in Appendix C (only in Turkish).



**Figure 25 Analysis of the pilot study**

The thematic analysis and the pilot study process allowed the researcher to re-evaluate and expand on the main research questions. The researcher decided to incorporate the sub questions into the main-questions and add another main question.



The shortened list of themes from the pilot study is given as a table (Table 15).

**Table 15 Final list of the themes from the pilot study**

1	The Perception of the Automotive Designer of the Automotive Design Profession (Otomotiv Tasarımcısının Otomotiv Tasarımı Mesleğini Algılayışı)
2	The Name of the Profession (Mesleğin Adı)
3	The Perception of Design in the Company (Tasarım'ın Firmadaki Algılanışı)
4	The Role of the Automotive Designer (Otomotiv Tasarımcısının Rolü)
5	The Positioning of Design in the Corporate Environment (Firma İçinde Tasarımın Konumlandırılması)
6	The Expectations of the Company from the Automotive Designer (Firmanın Otomotiv Tasarımcısından Beklentileri)
7	The Dependence of the Company (Firmanın Bağımlılığı)
8	The View of the Automotive Designers of the Company (Otomotiv Tasarımcısının Firmaya Bakış Açısı)
9	The Views of the Automotive Designer on the Automotive Industry (Otomotiv Tasarımcısının Otomotiv Endüstrisine Bakış Açısı)
10	The Functions of the Automotive Design Manager (Otomotiv Tasarımı Yöneticisinin Görevleri)
11	The Position of the Automotive Designers in the Company (Firma İçinde Otomotiv Tasarımcısının Konumlandırılması)
12	The Relations of the Automotive Designer with Other Contributors (Otomotiv Tasarımcısının Diğer Katılımcılarla İlişkileri)
13	The Definition of the Automotive Design Process in the Company (Firmada Otomotiv Tasarım Sürecinin Tanımlanması)
14	The Strategies to be Followed by the Turkish Automotive Industry (T.O.E' de İzlenmesi Gereken Stratejiler)
15	The Effects of Out-Sourced Automotive Design (Firma Dışı Otomotiv Tasarımı Desteğinin Etkileri)
16	The Views of the Automotive Design Manager on the Automotive Industry (Otomotiv Tasarımı Yöneticisinin Otomotiv Endüstrisine Bakış Açısı)
17	The Position of the Automotive Design Manager in the Company (Otomotiv Tasarımı Yöneticisinin Firmadaki Pozisyonu)
18	The Expectations of the Company from the Automotive Design Manager (Firmanın Otomotiv Tasarımı Yöneticisinden Beklentileri)
19	The Views of the Automotive Design Manager on the Company (Otomotiv Tasarımı Yöneticisinin Firmaya Bakışı)
20	The Views of the Automotive Design Manager on the Automotive Designer (Otomotiv Tasarımı Yöneticisinin Otomotiv Tasarımcısına Bakış Açısı)
21	The Views of the Automotive Industry Expert on the Global Automotive Industry (Otomotiv Endüstrisi Uzmanının Küresel O.E' ye Bakış Açısı)
22	The Views of the Automotive Industry Expert on the Companies (Otomotiv Endüstrisi Uzmanının Firmalara Bakış Açısı)
23	The Views of the Automotive Industry Expert on the Turkish Automotive Industry (Otomotiv Endüstrisi Uzmanının T.O.E' ye Bakış Açısı)

These themes, defined by the participants, were used to identify the themes that would be used by the field study. All the themes mentioned in the table (Table 15) were found to be related to the



research questions, but could not be used as titles for question groups as they were synthesized from the answers given by the pilot study group and were not defined by the researcher. For this reason, the themes were converted into broader terms and to be more encompassing as headings.

These themes were used to reevaluate the questionnaires from the pilot study and to implement the changes to the new questionnaires of the field study.

The analysis of the thematic coding procedure is called the thematic analysis. The process involves the reduction of data and segmentation, categorization, summarization, and reconstruction of important concepts. The researcher can take these themes, with their relevance to the research questions and the rest of the data, and develop an analysis (Ayres, *Thematic Coding and Analysis*, 2008). This enables the researcher to develop relations between the themes, comparing and contrasting them, and provide an analysis through the emerging patterns to be further discussed into outcomes.

To allow for a successful analysis, the interviews have to be documented very carefully. To achieve this task, it is not always possible to write down everything the interviewee states. It is better to rely on technology, such as video or sound recording the interviews for later transcription. In the case of this study, video recording was not an option, as concealing the identities of the participants were of primary concern. Sound recording was used as the primary way of recording the interviews. Notes were also taken during the interviews and for the observations at the sites.

Although the interviews were sound recorded, the analysis stages were not prepared with the use of these recordings directly. The sound recordings were transcribed for both the pilot study and the field study (Poland, 2008). The transcription took place on the computer, using different kinds of software for the pilot study and field study.

### **3.5.2. Comparative Analysis of Field Study Interviews**

The field study interviews were analyzed, much like the pilot study interviews, by first transcribing the interviews from the sound recorder. The transcription software used on the field study interviews, namely "inqScribe", is designed for the Microsoft Windows platform. A screenshot of the transcription process can be seen in the image (Figure 26).

The software has the capability to automatically timestamp the interviewer and interviewee and has the ability to synchronize the sound file of the interview recording to the text for re-checking the transcription after completion.

The transcriptions from the recordings were later studied and were marked with a highlighter on the printouts for important sections. The parts of text that were out of topic or outside the interest of the questions were taken out. These highlighted portions of text were copied, from their digital counterparts, to an excel file. The copied portions of text were categorized under their relevant questions from the interview. Afterwards, the questions were taken out of their structure, which is the way they were organized in the interview, and were arranged according to the structure of the themes that were given in the conclusion of the pilot study analyses.

The summaries of the answers were printed out on large rolls of paper (Figure 27) and folded to the size of an A3 size paper. They were then checked for thematic analyses and some important comments from the interviewees were noted on the white unused side of the rolls. The results from this process are given in the Findings chapters.

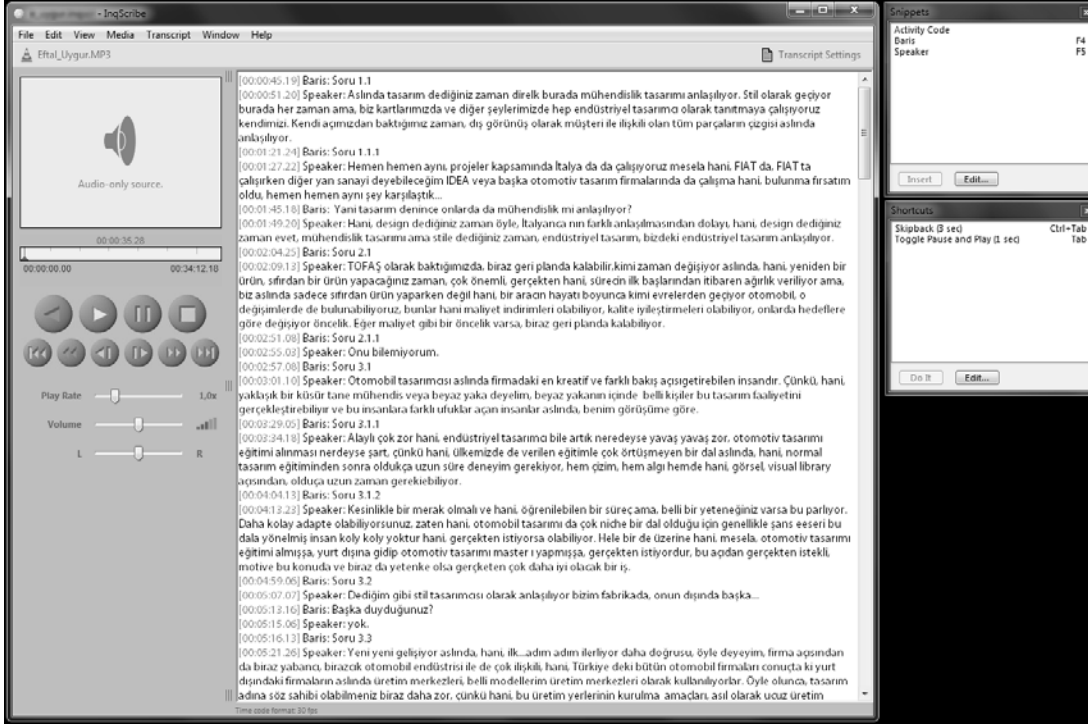


Figure 26 Screenshot of inqScribe software during the field study transcription process



Figure 27 Design themes from the interview summaries being analyzed

## CHAPTER 4

### FINDINGS

In this chapter, the findings from the field study are presented and are discussed. The structure of the chapter is formatted to first present the findings and then discuss them for every heading given.

The findings include responses from 16 in-house automotive designers, three automotive design managers and five automotive industry experts. The automotive designers interviewed have experiences in the field ranging from 15 years to two years, the automotive design managers have experiences ranging from 31 years to 10 years, and automotive industry experts that have experiences ranging from 40 years to nine years.

There are quotations used in the text that were translated from their Turkish originals into English. The original Turkish phrases can be found in Appendix H according to the numbers given in the parenthesis.

#### 4.1. Understanding of Design

All of the interviewees were asked about their understanding and their observations about the understanding of the word “design”; inside the automotive industry in Turkey and in the global automotive industry.

In some of the questions, the respondents mentioned more than one topic in their answers. In these circumstances, the word “mentions” is used instead of “answers” to signify that the respondents have mentioned more than one topic.

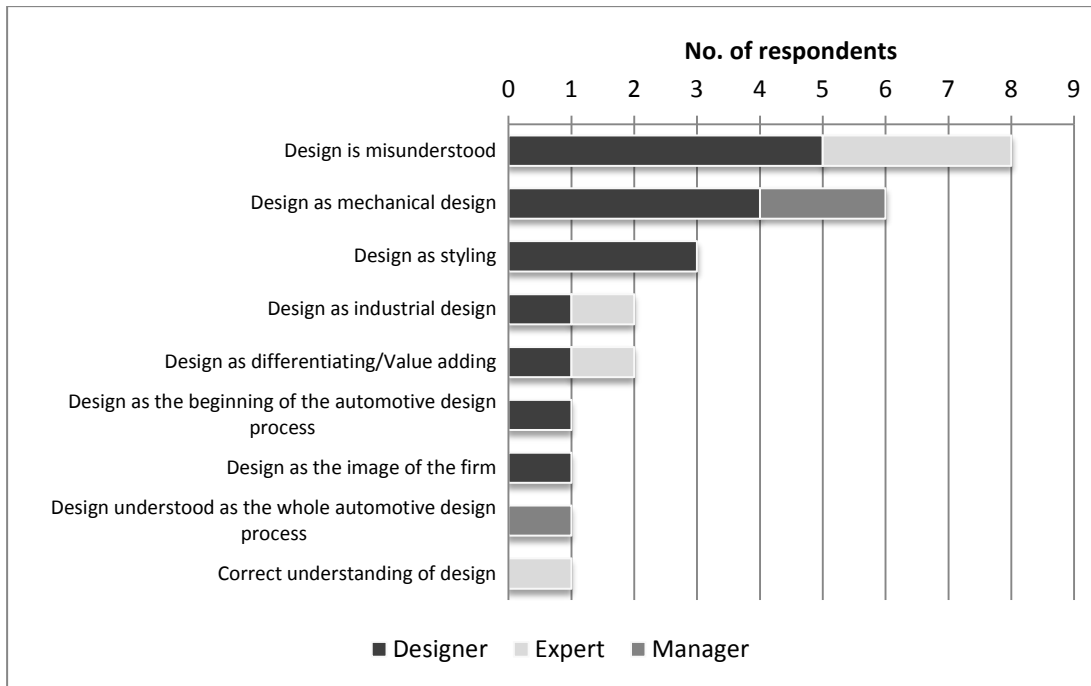
The topics “correct understanding” or “misunderstanding” of design mentioned by the participants, in the following headings, are derived from the definitions given in the review of terms, chapter 1.

The definition of design was discussed with the participants in the beginning of the interviews. In reference to the following headings, a “correct” or “correct understanding” statement would be an understanding that falls in line with the definitions in the review of terms, and a “misunderstood” statement would be an understanding that falls outside the scope of these definitions.

The examination of this understanding, coming from participants with or without design backgrounds, and its analysis will display the importance of understanding design as a notion and will provide the basis for interpreting the answers to coming questions.

##### 4.1.1. Understanding of Design in the Automotive Industry in Turkey

The following graph represents the topics mentioned by the participants on the understanding of design in the automotive industry in Turkey.



**Figure 28 Understanding of design in firms in the automotive industry in Turkey as observed by the interviewees**

- “Design” is misunderstood in the industry:** The majority of the respondents (5 automotive designers, 3 automotive industry experts) stated that the word “design” is not understood or accepted in the rightful manner. Two of the automotive designers stated that the word “design”, used without a definer such as “industrial” or “automotive”, stood for something other than its original or accepted meaning. They stated that the word “design” must be used with “industrial” as in “industrial design” to carry any meaning resembling its original meaning. One other automotive designer stated that ‘In general, too many things are understood in the firm when “design” is used. This includes understandings such as engineering, problem solving or building a new line of machines, for this reason, nobody understands when the word “designer” is used’ (1). One of the automotive industry experts commented that ‘They do not seem to understand the difference between “design” and “styling” that much [...] They do not understand the difference between “engineering” and “styling”’ (2).
- “Design” as mechanical or technical design:** The second most held on point (4 automotive designers, 2 automotive design managers) was that the word “design” stood for the “mechanical design” or “technical design” and that is conducted by engineers. One automotive designers stated ‘Mechanical design is understood when “design” is used [...] they call what we do “style design”’ (3). One of the automotive designers stated that when the word “design” is used in the company, all the tasks relating to mechanical aspects are understood but industrial design is not. Another automotive designer stated that the process of detail solving in the engineering departments is considered as “design”. An automotive designer stated ‘In Italy [...] the way that we worked in the university and the work we dreamed of doing continues [...] here, it seems to be surrounded by engineers’ (4). One automotive design manager stated ‘[...] the way that manufacturing [department] and quality assurance [department] sees it, or the way that purchasing [department] sees it is completely as “engineering design”’ (5).

- **“Design” as styling:** One view, held by a number of automotive designers (3 automotive designers) was that “design” is accepted in the company as “styling”. One of the automotive designers commented ‘[...] people seem to think that what the designer does is only styling’ (6). This idea was shared by the other two automotive designers as well.
- **“Design” as industrial design:** Two participants, one automotive designer and one automotive industry expert, stated the existence of companies in the industry that understand the word “design” as being synonymous with “industrial design”. The automotive designer stated that the usage of the word “design” clearly meant “industrial design” in the company currently employing the automotive designer. The automotive industry expert stated ‘[...] we have begun to slowly change the definition of engineering design in the last few years, and I think this will continue’ (7).
- **“Design” as an aspect of differentiation and value adding:** Two participants, one automotive designer and one automotive industry expert, stated that the word “design” is being accepted by some companies as a way to differentiate themselves from the competition and as an aspect of value adding to their products. The automotive industry expert also added ‘Design, for us, other than being a difference of approach, is a factor that enables faster integration and a difference enabler’ (8).
- **Other understandings of “design”:** Some of the answers given by the participants were not supported by any other participants during the interviews, but were observed to be important enough to be mentioned.

One of the automotive designers stated that the word “design” should come before everything else in the design process and that it should become a starting point for the process itself. Another automotive designer emphasized that the word “design” stands for the image of the company and that the company should promote this idea. An automotive design manager stated that the word “design” is in practice the defining word for the whole automotive development process.

#### 4.1.2. Understanding of Design in the Global Automotive Industry

The following graph represents the topics mentioned by the participants on the understanding of design in the global automotive industry.

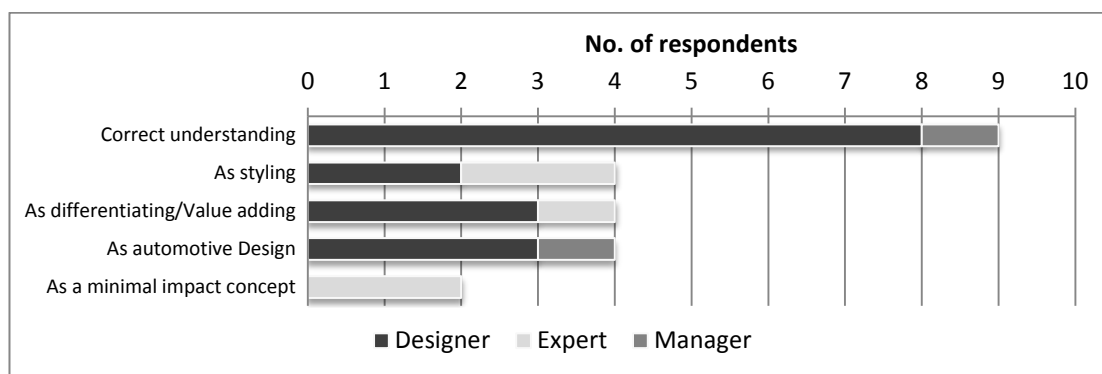


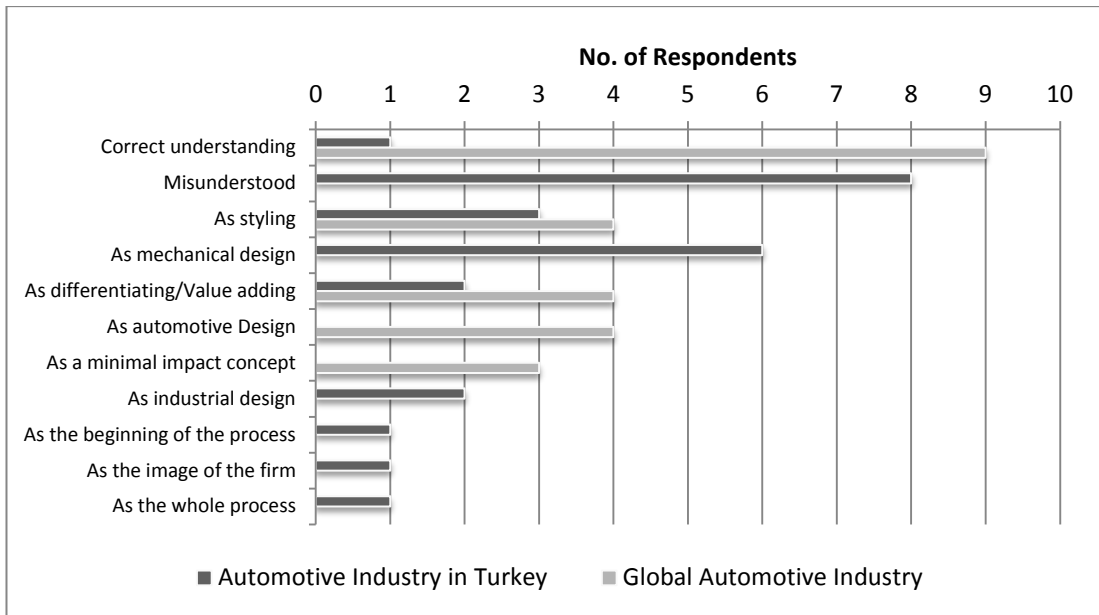
Figure 29 Understanding of design in the global automotive industry as observed by the interviewees

- **“Design” is understood correctly:** The majority of the respondents (8 automotive designers, 1 automotive design manager) stated that the understanding of the word “design” in the companies in the global automotive industry is correct and that it falls in line with the definition of the word. One automotive designer expressed this by stating ‘[Design] is what shows a product, what differentiates a product, and a factor that gives identity’ (9). One of the automotive designers stated ‘In Europe, this is done, I mean, design conducts the needed necessity, the needed task, the needed function’ (10). An automotive industry expert pointed out that the successful companies of the Western world give great importance to “design” in their companies and use it extensively.
- **“Design” as styling:** Another mentioned topic by the participants (2 automotive designers and 2 automotive industry experts) was the understanding of “design” as “styling” by the companies abroad. Two automotive designers and two automotive industry experts stated this answer during the interviews. Two of the automotive designers stated that the word “design” stands for “styling” in companies, but the name also encompasses the functions of “design”. Two of the automotive industry experts stated that although the name given to “design” in foreign companies is “styling”, the stylists in these companies are responsible for not only the aesthetic aspects of the products, but also the whole “design” process.
- **“Design” as an aspect of differentiation and value adding:** The participants (3 automotive designers and 1 automotive industry expert) stated that the word “design” accounted for the originality of the company amongst its rivals, and created and defined the companies’ image as a whole.
- **“Design” as automotive design:** The respondents (3 automotive designers and 1 automotive design manager) emphasized that the word “design” is always used as a synonym for “automotive design” in foreign countries’ automotive companies. The automotive designers stated that successful foreign companies are beyond defining these words and their relative meanings and that there are no such discussions in those companies. The automotive design manager stated that companies in the global automotive industry have defined these words long ago and have implemented them successfully.
- **“Design” as a minimal impact concept:** Interestingly, some of the participants (2 automotive industry experts) stated the word “design” as a minimal impact concept and added that the global automotive industry is focused on other concepts, such as engineering and marketing. One of the automotive industry experts expressed that ‘The number of companies where the styling team, the industrial design have a weight is very low’ (11). Another automotive industry expert added that ‘[...] when you look at it in terms of approach, the design is mostly guided by the manufacturing and engineering, and you cannot do the things that you want, you are very restrained’ (12).

### Discussions on the Understanding of Design

The topics observed in the graphs (Figure 28 and Figure 29) represent various understandings of design in the automotive industry, as mentioned by the participants, in Turkey and in the global automotive industry.

To examine the topics mentioned by the respondents on understandings of design, it would be useful to examine the graphs, represented under the main heading.



**Figure 30 Comparison of the understanding of design between the automotive industry in Turkey and the global automotive industry**

The graph (Figure 30) displays the combined responses of all the respondents for both the automotive industry in Turkey and for the global automotive industry.

One important discussion is the relation between the first two topics; “correct understanding” and “misunderstood”. There are eight respondents that view the understanding of design as a “misunderstanding” and one respondent that views the understanding of design as a “correct understanding” in the automotive industry in Turkey. This observation signifies that the majority of the respondents believe there to be a problem with the understanding of design in the automotive industry in Turkey. On the other hand, there is one respondent that views the understanding of design as a “misunderstanding” and nine respondents that view the understanding of design as a “correct understanding” in the global automotive industry. This difference between these two topics reflects the biggest difference seen in the graph between the automotive industry in Turkey and the global automotive industry in terms of understanding of design. However, this difference is altered by examining and discussing the other topics.

It is possible to state that “styling” is a part of the design process, especially mentioned by the professionals in the automotive design field. Design is also a process that helps companies “differentiate” themselves from their competitors and it is an “added value” to products. It is stated by the participants, and in the researcher’s opinion, that design is a phase that must be included in the “beginning of the process” and it can be considered the “whole process” in reference to the name “automotive design process”. Respondents have also stated, as well as the literature (Section 2.5), that design is used in forming an “image for the products and the firm”. However, even though all of the above topics can be said to signify a partial understanding of design, they do not signify a complete understanding of design, neither do they signify a complete misunderstanding of design. For this reason, they cannot be thought together with the “correct understanding” topic or the “misunderstood” topic.

Another topic of interest is the “minimal impact concept” topic, where the statements made by the respondents propose that design, in the global automotive industry, is not as important as it is thought to be. Nevertheless, these statements by the respondents do not state that “design” is

misunderstood in the global automotive industry. Rather, the respondents state that there are more important issues, such as engineering and manufacturing, than design. Because of this, this response cannot be considered to be grouped with the “correct understanding” topic, or with the “misunderstanding” topic.

Two of the topics that are directly related with the understanding of design in the automotive industry are “industrial design” and “automotive design”. These two topics are often used as the names of processes as well as the names of professions that are used in the automotive industry instead of the word “design”. For this reason, and because the subject of the question is the automotive industry, it is possible to state that these topics can be considered together with the “correct understanding” topic.

On the other hand, “mechanical design” is a problematic definition because the people that use this definition are not automotive designers, but are engineers, and the correct definition would be “mechanical engineering”, as their profession is titled. The usage of “design”, as opposed to “engineering”, by the mechanical engineers, creates a misunderstanding amongst the professions and confusion in the titles used by the automotive designers in the company. This confusion is less visible, or not at all, in the global automotive industry, where design is separated from engineering, as a subject and as a department, until they are required to work together during the automotive design process. Because of this, the “mechanical design” topic can also be stated as a topic that can be grouped with the “misunderstanding” topic.

Considering the above discussions for the automotive industry in Turkey, it is possible to state that the topics that can be grouped to signify a correct understanding of design are “correct understanding”, “automotive design”, and “industrial design”. On the other hand, the topics that can be grouped to signify a misunderstanding of design are “misunderstood” and “mechanical design”, a much higher mention count compared to the understanding of design; 14 mentions to three mentions. In contrast, the same comparison for the global automotive industry indicates 14 mentions for the understanding of design and no mentions for the misunderstanding of design. Therefore, it is possible to state that according to the respondents’ views the understanding of design is much more established in the global automotive industry than it is in the automotive industry in Turkey.

The topics “styling” and “differentiating and value adding” can both be seen as mentioned by the automotive designers. It can be said that these topics are seen as universal topics; topics that are mentioned for both the automotive industry in Turkey and for the global automotive industry. This signifies that these two topics are important for the understanding of design, but, as mentioned before, not enough to represent a complete understanding of design by themselves.

One interesting point is that the biggest companies in the automotive industry in Turkey are owned by companies abroad. These companies are engineering and manufacturing the designs sent to them from the owner companies abroad. On the other hand, three of the automotive industry experts state that the automotive industry in Turkey has misunderstood design, which falls in line with the thoughts of the in-house automotive designers.

The topic “minimal impact concept” is mentioned by two automotive industry experts for the global automotive industry. The automotive industry experts state that design is not as important as it is thought to be in the global automotive industry, but the literature (Section 2.2) argues that design is a very important concept for brands.

Two of the automotive design managers state that design in the automotive industry in Turkey is understood as “mechanical design”, but not in the global automotive industry. The automotive design managers are the people responsible for changing this aspect, if this is seen as a problem.



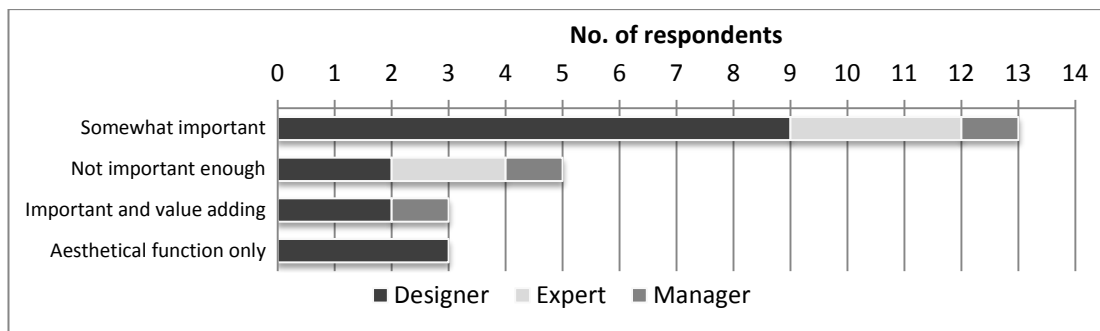
But, not all the automotive design managers see this as a problem and believe that design should be under the engineering department.

#### 4.2. Views on Automotive Design as a Subject and as a Process

The views collected about automotive design were separated into two categories. The first category focuses on the understanding of the automotive design as a subject of discussion and what it means to the people of the industry as a title. Automotive design as a subject stands for the ideation of automotive design as a concept, including the professions that conduct it. In this category, the participants expressed their views on the subject and how the subject is viewed in the automotive industry in Turkey, and in foreign automotive companies.

The second category focuses on automotive design as a process. Automotive design as a process means the stages that a vehicle goes through from the initial concept formation to the manufacturing phase. In this category, the in-house automotive designer participants and the automotive design managers explain how this process is conducted in their firm and present a flowchart view of the process while the automotive industry experts explain their views on the implementation and execution of the process in the automotive industry in Turkey.

##### 4.2.1. Automotive Design as a Subject in the Automotive Industry in Turkey



**Figure 31 Understanding of automotive design as a subject in the automotive industry in Turkey as observed by the interviewees**

- Automotive design is somewhat important:** The majority of respondents (9 automotive designers, 3 automotive industry experts, and 1 automotive design manager) mentioned that the industry sees automotive design as an important subject but with reservations. As seen from the graph (Figure 31), the majority of the respondents also includes majority of the automotive designers. One automotive designer commented by stating that the current role of automotive design in Turkey is similar to a support group; giving support to the main brand company as needed. He followed by stating that the understanding of automotive design in their company is reaction based, reacting to the demands of the market or reacting to a competitor. Another automotive designer explained that the situation of automotive design might improve but, there are years behind their foreign competitors in terms of understanding automotive design. Another automotive designer stated that ‘[...] we cannot use all of our talents and cannot interfere [with the designs], this is caused by the lack of number of designers, lack of resources, and the lack of perception [of design]’ (13). One other automotive designer stated that the firm sees automotive design as an important concept but, circumstances change as soon as financial reasons get involved and that financial reasons are always a priority. Three of the automotive industry experts were

also seeing the industry give less than satisfactory importance to automotive design. One of the automotive industry experts stated that automotive design has become an important aspect for all companies in the automotive industry but, it is still under great pressure from outside sources. Another automotive industry expert stated that automotive design is an important concept to some of the companies in the industry only because competition is forcing them to adapt and not because they believe in it. An automotive design manager, who also saw somewhat importance given to automotive design in the industry, stated that 'In the operations of the global players in Turkey, the licenses of the products are not owned by Turkish companies, and this causes the design work to be only conducted on small details' (14).

- **Automotive design is not important enough:** The second most stated (2 automotive designers, 2 automotive industry experts, and 1 automotive design manager) point was that automotive design is not given the importance it deserves. An automotive designer who commented on the issue stated that the automotive industry in Turkey is unaware of such a concept (automotive design) and that the larger firms are just contract manufacturers who have no say in the design of what they manufacture. Two of the automotive industry experts stated that the automotive designers currently employed are not allowed to design any important aspects of a vehicle. One of the automotive industry experts added by stating that the automotive designer is only allowed to play with the colors of a vehicle. The automotive industry expert stated that the smaller firms that are not tied to global brands can and must accept automotive design as a subject to survive in such a fierce market. The automotive design manager who responded stated that the understanding of automotive design in the firms in Turkey are somewhere between unknown to unsatisfactory.
- **Automotive Design is important and value adding:** Three participants stated (2 automotive designers, 1 automotive design manager) that the subject of automotive design is important for the industry and is also seen as value adding for the firms. One of the automotive designers who commented on the matter stated 'This is competition, of course you have to bring a difference, and this is where the importance of design arises' (15). One automotive designer stated that 'They look at it as the first and creative phase in the development of vehicles; the critical point in the progression of projects and the factor that will sell the vehicles' (16). An automotive design manager stated that '[...] with the progression of industrial design in the past few years, and with the process of putting it [industrial design] in front of mechanical design, when we say design, and we are trying to push this and progress this here, industrial design is slowly changing the definition of mechanical design' (17).
- **Automotive design as an aesthetic function only:** Three respondents (3 automotive designers) stated that the industry only sees automotive design as an aesthetic function, another name for styling. One of the automotive designers stated that '[...] a vehicle is first designed mechanically; the components, the structure etc. Then automotive design is like a shell that is dressed on top of it' (18). Another automotive designer stated that the initiation phases of the projects for vehicles are never discussed with automotive designers. The automotive designer added that every phase of decision making is conducted by engineers and after the vehicle is completed the automotive designers are asked to make it pretty. One other automotive designer stated that the companies' view on the subject is very simple; it should not look like engineers designed it, that the automotive designers should check its aesthetics.

#### **4.2.2. Automotive Design as a Subject in the Global Automotive Industry**

The views on automotive design as a subject in the global automotive industry were expressed only by automotive designers and automotive industry experts. Automotive design managers were reluctant to give explanatory answers on the subject for undefined reasons.

The number of comments received from the respondents was relatively low. For this reason, all the responses are given below without grouping them into categories.

An automotive designer commented on the subject by stating that the global automotive industry is giving automotive design an important place in their company policies. The automotive designer added by stating that the automotive designer is the person that not only thinks of the form but, also of the functional aspects of design.

Another automotive designer stated that the role of the automotive designer is defined very well and that the number of people working to implement the understanding of automotive design is profoundly more than that is working in the companies in Turkey.

One other automotive designer also stated that the number of automotive designers working in foreign companies is large. The automotive designer also added that the understanding of automotive design is infused in those companies.

Two automotive industry experts stated that the understanding of automotive design in foreign companies is very well defined and that the system works.

One automotive industry expert stated that although the understanding of automotive design is well defined in foreign companies, the automotive designer is not powerful enough to have a say in the products. The automotive industry expert also added that although the automotive designers are not powerful, the company knows that success is not possible without design.

#### **Discussions on Automotive Design as a Subject**

The subject of automotive design in the automotive industry in Turkey has received four different responses from the respondents that form the topics. Three of these topics focus on the importance of the subject and one of them focuses on the function of the subject.

The majority of the respondents stated that the topic can be considered “somewhat important” in the automotive industry in Turkey. This topic also includes the views of the majority of the in-house automotive designers as seen in Figure 31.

The statements received from the respondents on this topic suggest that automotive design is “somewhat important” because the companies in Turkey are seen as a support team by their owner firms. The automotive designers stated that the support that they provide is mostly in the adaptation of the vehicles into Turkey’s conditions and that they are not given the chance to express and use their talents as automotive designers.

One common adaptation is in terms of cultural aspects, where the labels on or in the vehicle are translated into Turkish and sometimes re-designed. Another form of adaptation was mostly conducted by engineers, where the vehicle was tuned for the roads in Turkey. One other kind of adaptation was about the manufacturing of the vehicle. In some of the companies, the support tasks of the in-house automotive designers included choosing materials for the vehicle, from local sources,

but not in the actual design of these materials. Placing the in-house automotive designers in such a position as to conduct these adaptations, but not design them, indicated that they were not really present in the design phases of the vehicles. This was further supported by the statements of the automotive designers about their companies' lack of financial support for the design teams and the design teams' shortage in design tools.

As stated by some of the in-house automotive designers and two of the automotive industry experts, the "somewhat important" understanding of automotive design, was also forced on the companies by the competition. An automotive designer respondent called this approach "reaction based", stating that the formation of the in-house design team is based solely on the competitors' formation of an in-house design team. One automotive industry expert stated that the competition is forcing the companies to form in-house design teams because competitor firms are forming them, not because they are finding the need to implement automotive design as a process. This understanding signified that some companies had a different agenda in employing automotive designer and that this agenda did not carry implementing the automotive design process as a whole, or even designing new products.

An argument stated by some of the automotive designer respondents was about the relatively small number of in-house automotive designers that are employed by the automotive industry in Turkey. The automotive designers stated that the numbers of in-house automotive designers in the global companies are higher. The relatively small number of in-house automotive designers in the automotive industry in Turkey signified the level of importance that the companies saw in automotive design. The automotive designers stated that an increase in their numbers in the automotive industry in Turkey would signify an increase in the importance of automotive design in Turkey. Considering that there were six automotive designers working in the biggest in-house design team in Turkey compared to the hundreds of automotive designers that were working at a single global company, the importance of automotive design for the four companies becomes debatable.

The views of an automotive design manager expressed the "somewhat important" situation of automotive design in Turkey. The automotive design manager stated that most of the companies in Turkey were owned by or were subsidiaries of foreign brands. The automotive design manager stated that this put the companies in an awkward position in terms of designing their own products. The automotive design manager stated that this awkward position was caused by the complicated licensing deals that were signed between the two actors. The position that these companies took was very limited as they were seen as a manufacturing and an engineering position for the licensing firm. Because some of these firms represented the owner firm, used their branding and logo, it was not possible for them to design new products without the required permission. For this reason, the in-house automotive designers in these firms were unable to conduct the automotive design process as a whole. On the other hand, the automotive design manager stated that there were smaller companies that were trying to move away from these licensing deals and that were trying to move towards new product development. However, their numbers and their financial resources were not yet strong enough. One issue with these smaller companies was that without integrating automotive design and producing original vehicles, these companies may either face the danger of progressing towards the same kind of licensing deals or may become manufacturers of vehicles that copy design, technology and/or engineering from the trendsetters in the global industry.

Five of the respondents stated that the automotive industry in Turkey sees automotive design as a "not important enough" issue. The difference between this topic and the one above is that the respondents are less optimistic about the current situation in Turkey and the possibility of the automotive industry in Turkey to realize the need for automotive design for long-term success. The statements made by the automotive designers on the unawareness of the companies in terms of automotive design, and the lack of support and projects that they give to their in-house automotive designers, reinforce the arguments of the respondents that the automotive industry in Turkey being

a contract manufacturing industry. One automotive design manager stated that the understanding of automotive design in the automotive industry in Turkey is somewhere in between unknown to unsatisfactory. These arguments signify that the automotive industry in Turkey may not have an agenda to change and adapt automotive design in the future. The industry may select and continue to manufacture for their owner firms, under the established licensing deals, and to keep profiting by acting as manufacturing locations for global companies.

Three respondents stated that the automotive industry in Turkey sees automotive design as “important and value adding”. The automotive designers stated that the competition between companies in Turkey and the global market is pushing the companies in Turkey into producing original and differentiating products and that this is potentially good for automotive design. However, some of the automotive designers, as stated in the “somewhat important” topic above, see the results of this competition as unsatisfying and not in favor of a successful automotive design process in the companies. One automotive design manager stated that the importance of automotive design is increasing as the prioritization of mechanical engineering is losing importance. However, other automotive design managers, as stated above, argue that this change of position is not really decided by most of the companies in the automotive industry in Turkey. Although some smaller companies may choose to focus more on automotive design, the majority of the companies, which are manufacturing under license, have no say in the matter of prioritizing automotive design unless the owner companies decide on such a change.

Three of the automotive designers stated that the understanding of automotive design in the automotive industry in Turkey is as an “aesthetic function”. The automotive designers state that some of the companies see automotive design as only styling. The automotive designers state that they are expected to “draw a skin” around the creations of engineers or to “make them pretty”. The understanding in the global automotive industry, as stated by the automotive designers, is for the automotive designers to be involved in more than just the styling of the products, but also with the functional aspects of the designs. The automotive designers stated that the role and tasks of the automotive designer are very well defined in the global automotive industry. The difference in the understanding of automotive design between the automotive industry in Turkey and the global automotive industry is very different. This difference disrupts many aspects of the understanding of automotive design and the application of automotive design process in the companies in Turkey.

#### **4.2.3. Automotive Design as an In-house Process in the Automotive Industry in Turkey**

The analysis of the responses given by the participants are divided and explained in four parts, corresponding to the four companies that currently employ in-house automotive designers. The automotive design as a process is explained for each company, anonymously, under each heading. The views of the automotive designers and automotive design managers are given during the explanation of the automotive design as a process under each company. The views of the automotive industry experts, on the other hand, are represented after these explanations.

The flowcharts, shown under this heading, need an introduction to allow for a better understanding of their construction. The two-way arrows stand for a dialogue - a discussion - between the subjects they point towards. This means that these components talk about the process at these phases. The single-headed arrows stand for process steps and are representing one-way steps. The lighter grey boxes represent processes, while the dark grey boxes are used for departments or teams.

#### 4.2.3.1. Automotive Design Process in Company A

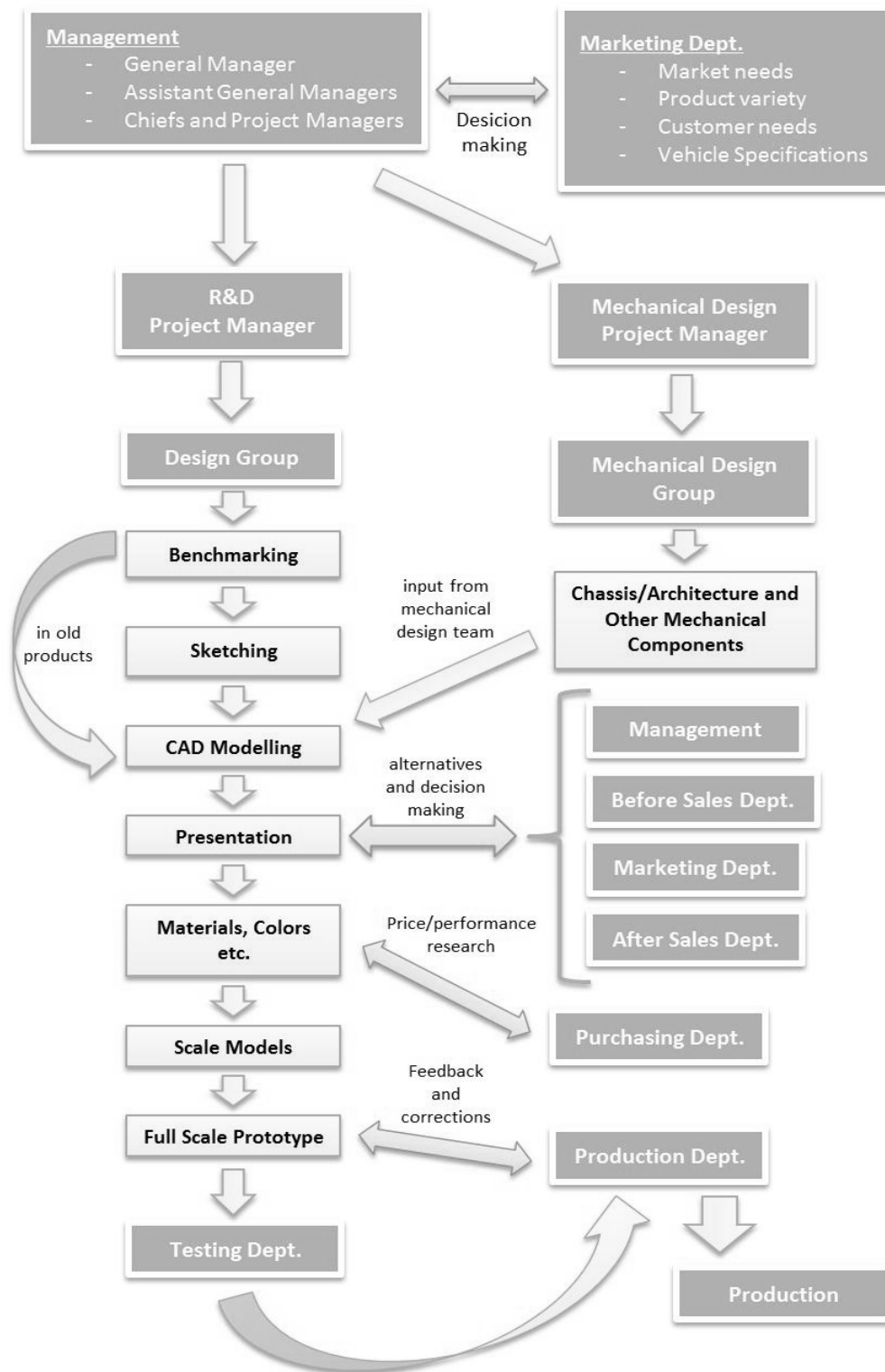


Figure 32 Automotive design process in company A as described by the in-house automotive designers and the automotive design manager

The automotive design process in company A, as described by the in-house automotive designers and the automotive design manager, begins with internal discussions between the managerial divisions of the company and the Marketing Department. These two participants define the project based on the research data gathered by the marketing department on market needs, the current product variety of the market, customer needs, and the pre-defined vehicle specifications put together by other methods.

This data is passed on to the R&D department project manager and the Mechanical Design project manager. The project flows in these two departments in their own systematic process.

The R&D department project manager conducts a meeting with the Design Group of the company and explains the necessary points of interest and defines certain deadlines. The Design Group begins the process with a phase called Benchmarking. In this phase, the Design Group gathers data on existing competitors' products currently on the market that are considered direct competitors to the project at hand. After this phase, if the project is a new project, the automotive designers move on to a conceptual phase of sketching. In this phase, the automotive designers are allowed to visualize their ideas freely, without any constraints bestowed upon them, until the defined deadline. If the project is an old project, which means a vehicle currently on the market that is considered to be re-designed, then the company does not allow the Design Group to conduct the sketching phase and the project moves from the Benchmarking phase to the CAD Modeling phase. In the CAD Modeling phase the automotive designers begin digitally modeling their ideas using Computer Aided Design (CAD) tools on top of data sent by the Mechanical Design Group.

While the automotive designers are beginning the CAD Modeling phase of the process, the Mechanical Design project manager has defined and set deadlines for the Mechanical Design Group in a similar fashion to the Design Group. The Mechanical Design Group has worked in this timeframe to develop, or use ready-made, a chassis and have put together other mechanical components to form the body of the vehicle. This data is passed on to the Design Group to be used in their CAD Modeling phase as a foundation.

With the data obtained from the Mechanical Design Group, the Design Group creates alternative designs of the project vehicle and presents these to certain departments to be discussed during a meeting. The participants involved in these meetings consist of the Design Group as the presenters, the managerial aspects of the company, the Before Sales department, the Marketing department and the After Sales department.

The decisions formed during the meeting and the selected design is integrated to form a candidate for further work. The Design Group continues working on the selected design by choosing the materials, the colors and other necessities to be used for the candidate vehicle. During this phase, the Design Group opens a dialogue with the Purchasing department to discuss the selected items to be used in the candidate vehicle. These discussions lead to the phase where the Design Group begins creating scale models of the proposed design. If the scale models are found to be satisfactory by the Design Group, the process moves to the next phase.

In the last phase the Design Group begins with the full scale prototype creation of the proposed design. This step is conducted with discussions between the Design Group and the Production department. The feedback received from the Production Department, if required, is integrated into the full scale prototype before the prototype data is sent off to the Testing Department.

The Testing Department runs the necessary test with the prototype vehicle and sends the data to the Production Department. If the data is satisfactory, the Production Department initiates production. If problems arise, the Production Department discusses the necessary changes with the Design Group for implementation and afterwards re-testing of the prototype begins before production.

The in-house automotive designers and the automotive design manager of the company made some important comments about the process during the interviews that are given below.

One automotive designer stated '[...] we usually do not learn the final demands. We learn part of the demands, as much as we can hear, and begin with that, but as the process progresses, we get demands that state this is needed and that is needed, and these demands that are added later on causes the design process to falter' (19). The automotive designer added that the company viewed the conceptual sketching phase as a loss of time because the steps between the sketching phase and the CAD modeling phase stays with the design team and is not shared with the company. Another automotive designer stated that they had no say in the design of any electrical or mechanical parts of the vehicles and that they were forced by the company to use OEM parts from third-party manufacturers and that this effects their design decisions in a negative way. One other automotive designer stated that the company views their role as unimportant in the design process and tells them to stop reinventing the wheel, tells them that foreign brands are already leading the way and it is best to follow what the market already likes. The automotive designer also added that the education that they received in design school lead them to believe that they should be the ones talking to customers and receiving feedback about design decisions and that this is not the case at all in the field.

The automotive design manager stated '[...] This used to come later on, I mean, the dimensions and other things of the vehicle were determined and now let us mate a face to it' (20). But, the automotive design manager added that they are trying to change this view and are trying to move industrial design to the beginning of the process. The automotive design manager also stated 'All the approvals for the styling of the car come from the top; I mean, presented to the General Manager of the company for approval and brought to life with its approval' (21).



#### 4.2.3.2. Automotive Design Process in Company B

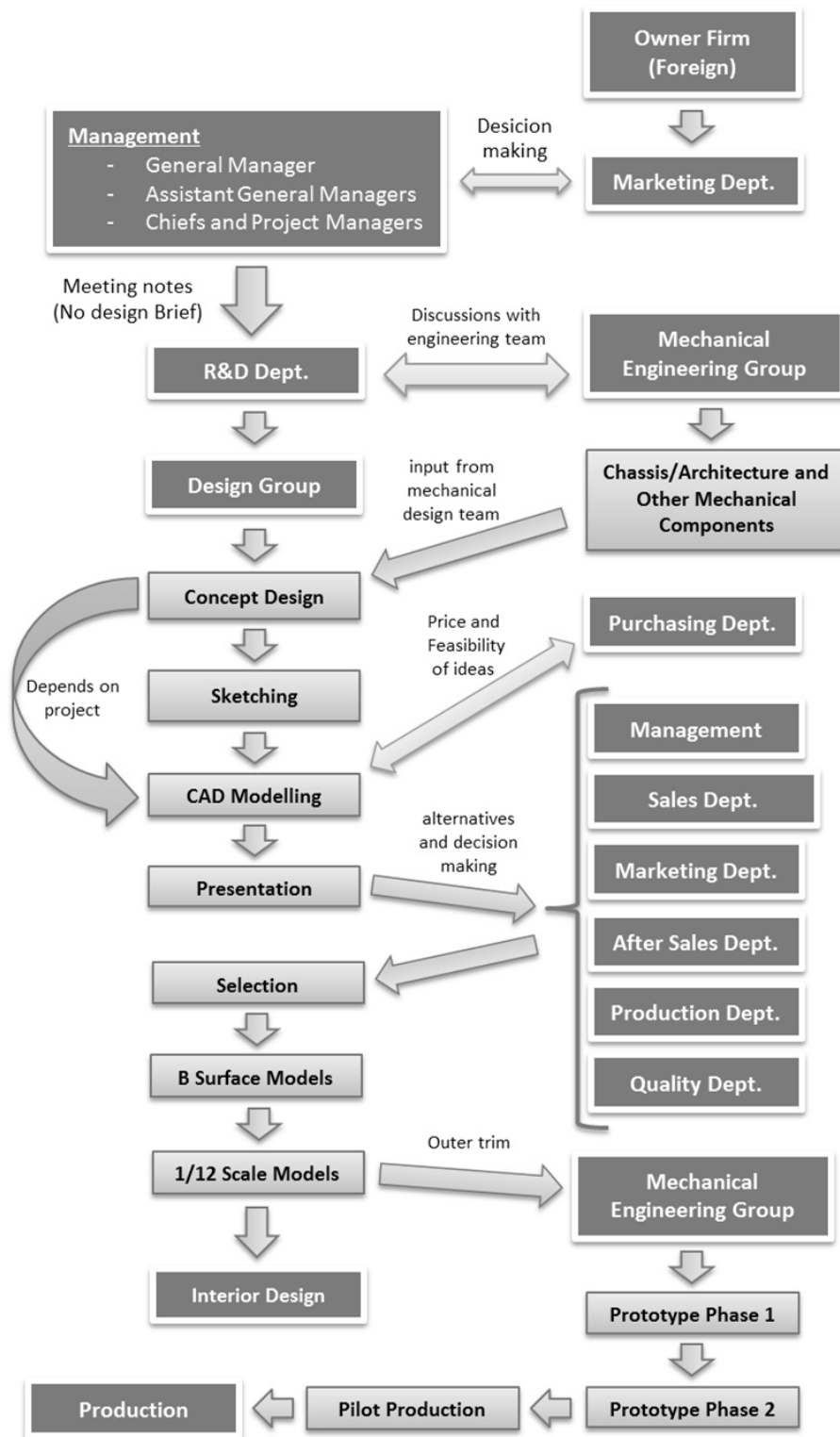


Figure 33 Automotive design process in company B as described by the in-house automotive designers and the automotive design manager

The automotive design process in company B, as described by the in-house automotive designers and the automotive design manager, begins with certain decisions and directions from the owner firm. These decisions and directions are forwarded to the Marketing Department of the child company. The child company then has internal discussions between the Management of the company and the Marketing Department on how to implement and follow these decisions and directions. These two participants define the project and then the Management passes the meeting notes to the R&D department.

This data passed on to the R&D department is not a design brief but notes from the meeting between the Management and the Marketing department. These notes are shared by the R&D department with the Mechanical Engineering Group in a meeting and certain tasks are shared and deadlines are set. The project flows in these two departments in their own systematic process.

The R&D department conducts a meeting with the Design Group of the company and explains the necessary points from the meeting notes and shares the deadlines. The Design Group begins the process with concept design phase. In this phase, the automotive designers discuss certain aspect of the vehicle until the defined deadline.

While the automotive designers are in the concept design phase of the process, the Mechanical Engineering Group has worked in this timeframe to develop, or use ready-made, a chassis and have put together other mechanical components to form the body of the vehicle. This data is passed on to the Design Group to be used in their concept design phase and then the CAD modeling phase as a foundation.

According to the project type, re-design project or a new project, the flow of the process changes. If the project is a new project, the process continues from the concept design phase to the sketching phase where the automotive designers begin working on alternative designs. If the process is a re-design project, company does not allow the Design Group to conduct the sketching phase and the project moves from the concept phase to the CAD Modeling phase.

In the beginning of the CAD modeling phase, the automotive designers have meeting with the Purchasing Department about the products to be used in the vehicles, including certain price and feasibility aspects. Then, the automotive designers begin digitally modeling their ideas using Computer Aided Design (CAD) tools on top of data sent by the Mechanical Engineering Group.

With the data obtained from the Mechanical Engineering Group, the Design Group creates alternative designs of the project vehicle and presents these to certain departments to be discussed during a meeting. The participants involved in these meetings consist of the Design Group as the presenters, the Management of the company, the Sales Department, the Marketing Department, the After Sales Department, the Production Department, and the Quality Department.

The decisions are formed during the meeting and the selected design is integrated to form a candidate for further work. The Design Group continues working on the selected design by continuing the CAD modeling in a more specific manner to form vehicle surface data called B Surface Models. These B Surface Models are used to form a final version of the vehicle surfaces before the realization step.

In the next phase, the data from the B Surface Models are used to make 1/12 Scale Models. During this phase, the Design Group sends the B Surface Model data to the Mechanical Engineering Group for further work on the candidate vehicle.

As the last phase of the Design Group, the Interior Design phase begins after the scale models are completed. During this phase, the Design Group works on the interior decisions of the vehicle but, the integration of this phase to the rest of process flowchart is not clearly defined in the company.

The Mechanical Engineering Group follows the process with two Prototype phases that involves the creation of full-scale prototypes and certain tests. These steps are concluded with the pilot production phase of the vehicle where certain in-the-field tests are conducted. If successful, the vehicle moves on to the production phase to be produced.

The in-house automotive designers and the automotive design manager of the company made some important comments about the process during the interviews that are given below.

One automotive designer stated 'My idea is to put a team of people that are formed by academic positions, even with futurologist, in the beginning of this process' (22). The automotive designer added that the whole process belonged to the engineers and that they are in somewhat of a support group status. Another automotive designer stated that there was confusion in the process, that some group of people were modeling vehicles before some even finished the sketching phase, and some people were beginning production before others finished the modeling phase. One other automotive designer stated that the responsibility of the automotive designer in the company is to give form and nothing else. Another automotive designer stated that the process is exactly like they were taught in school.

The automotive design manager stated that '[...] naturally, the evaluation of these by a consortium, if you will, or a management, is needed everywhere because you cannot be a judge and an attorney at the same time, a feedback is necessary on top of the industrial designer' (23).

#### 4.2.3.3. Automotive Design Process in Company C

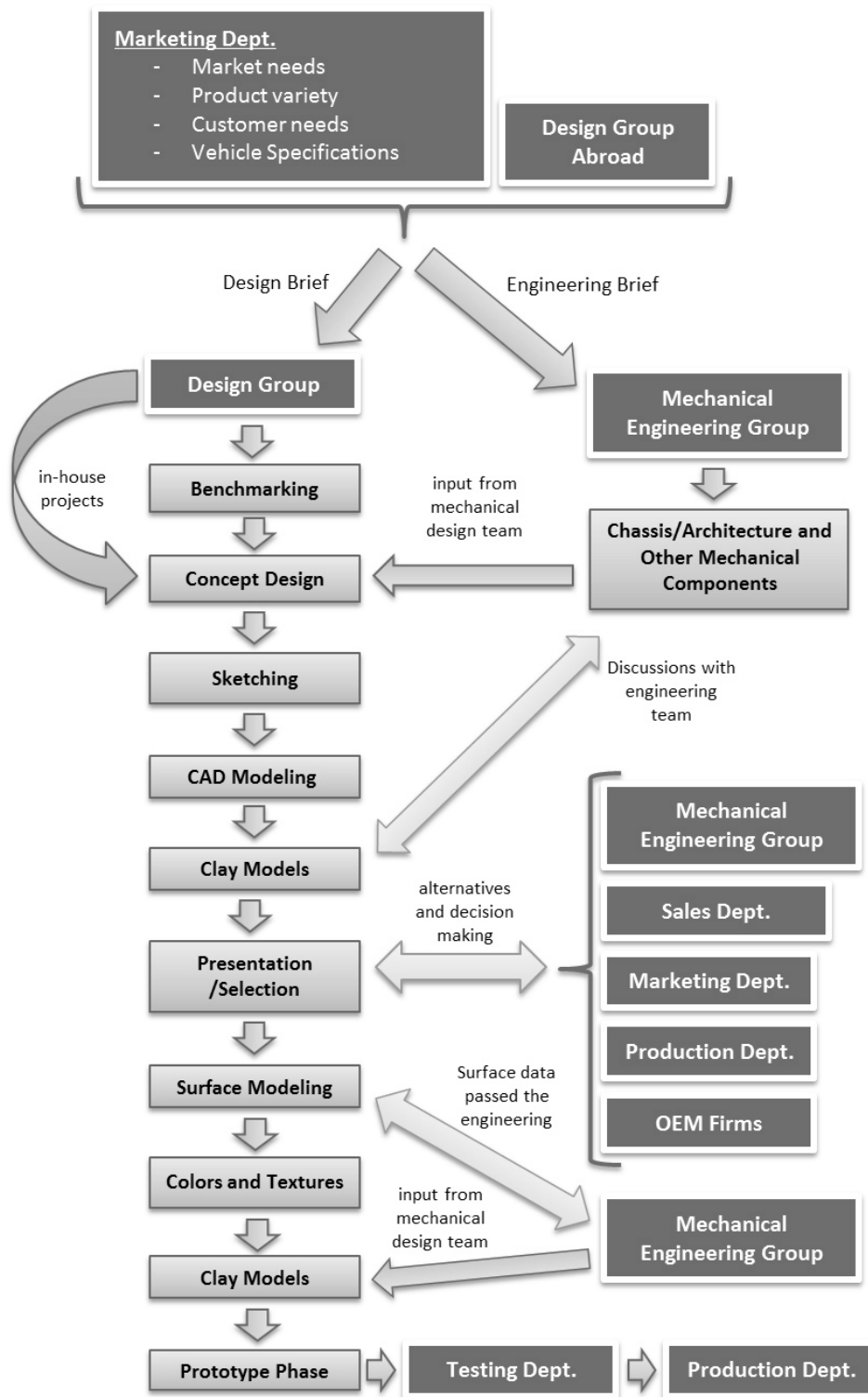


Figure 34 Automotive design process in company C as described by the in-house automotive designers and the automotive design manager

The automotive design process in company C, as described by the in-house automotive designers and the automotive design manager, begins differently depending on the place of origin of the project. If the project is an in-house project, the two briefs, the design brief and engineering brief, are prepared by the Marketing Department of the company in Turkey. If the project is originated abroad, at the owner firm, the Marketing Department of the company in Turkey and the Design Group of the owner firm abroad prepare the design brief and the engineering brief together.

The design brief is passed on to the Design Group and the engineering brief is passed on to the Mechanical Engineering Group. The project flows in these two groups in their own systematic process.

The Design Group begins with the benchmarking phase if the project originated abroad. In this phase, the Design Group gathers data on existing competitors' products currently on the market that are considered direct competitors to the project at hand. If the project is an in-house project, then the Design Group begins the project with the concept design phase.

While the automotive designers are in the concept design phase of the process, the Mechanical Engineering Group, which had begun and completed initial tasks according to their engineering brief, gives the Design Group a semi-developed, or ready-made, chassis and other mechanical components to form a skeleton that the Design Group can work on.

With the data obtained from the Mechanical Engineering Group, the Design Group completes the concept design phase to move on to the sketching phase to form alternative designs of the project vehicle. During this phase, the Design Group creates alternative designs to be used for the vehicle or parts of the vehicle.

The next phase, the CAD modeling phase, begins with the computer modeling of the chosen sketches in the prior phase. Some of the chosen alternatives are discarded while others are turned into digital models to be used in the next phase.

At the beginning of the clay models phase, the Design Group and the Mechanical Engineering Group discuss the progress and implementation of certain aspect that modify the design of the vehicle. These changes are implemented into the clay models. The clay models range from scale models to partial full-scale models and to full scale models.

In the following phase, the presentation/selection phase, the obtained progress is presented to certain departments to be discussed during a meeting. The participants involved in these meetings consist of the Design Group as the presenters, the Mechanical Engineering Group, the Sales Department, the Marketing Department, the Production Department, and sometimes the OEM firms, which are responsible for producing some of the vehicle parts.

The decisions are formed during the meeting and the selected design is integrated to form a candidate for further work. The Design Group continues working on the selected design in the surface modeling phase while sharing surface modeling data with the Mechanical Engineering Group. During this phase, the Design Group continues its dialogue with the Mechanical Engineering Group to discuss changes on the candidate vehicle.

With the necessary changes implemented to the surface data, the digital surface modeling files generated during the surface modeling phase are transferred over to the Mechanical Engineering Group, and the Design Group moves to the selection of colors and textures phase.

In the colors and textures phase, the Design Group chooses colors for the vehicle, parts of the vehicle and certain textures and fabrics. These choices are sometimes guided by or shared with third-party manufacturers.

After the Mechanical Engineering Group concludes their work with the surface data given to them by the Design Group, the data comes back to the Design Group for adjustments to the clay models or to make new clay models.

The last phase that involves the Design Group, the Prototype phase, begins with the full scale prototype creation of the proposed design, with the data taken from the clay models and the surface data from the Mechanical Engineering Group.

In the last two phases of the process, The Testing department runs the necessary test with the prototype vehicle and sends the data to the Production Department. If the data is satisfactory, the Production Department initiates production.

The in-house automotive designers and the automotive design manager of the company made some important comments about the process during the interviews that are given below.

One automotive designer stated 'In the product meetings; a meeting that consist of all the top managers, the specifications are determined in general terms. This could be perceived as a brief, but it is just meeting notes in terms of what is written' (24). The automotive designer also stated that the majority of the personnel in the R&D department were of engineering backgrounds and that the automotive design manager was also an engineer. Another automotive designer stated that the deadlines of the vehicles are sometimes prepared for the tourism season and that this makes the deadline very tight for satisfactory work. The automotive designer added that these deadlines are usually adjusted to minimize the time spent on design and maximize time spent other aspects.

The automotive design manager stated that the required time schedules for tasks are generated by the departments in the company and are used to form the deadlines for the vehicles. The automotive design manager also stated that 'Of course, we, especially I, put pressure on the industrial designers, I say "friends, the bus that you have designed is being done, you have all the right to pressure [the engineers]"' (25).

#### 4.2.3.4. Automotive Design Process in Company D

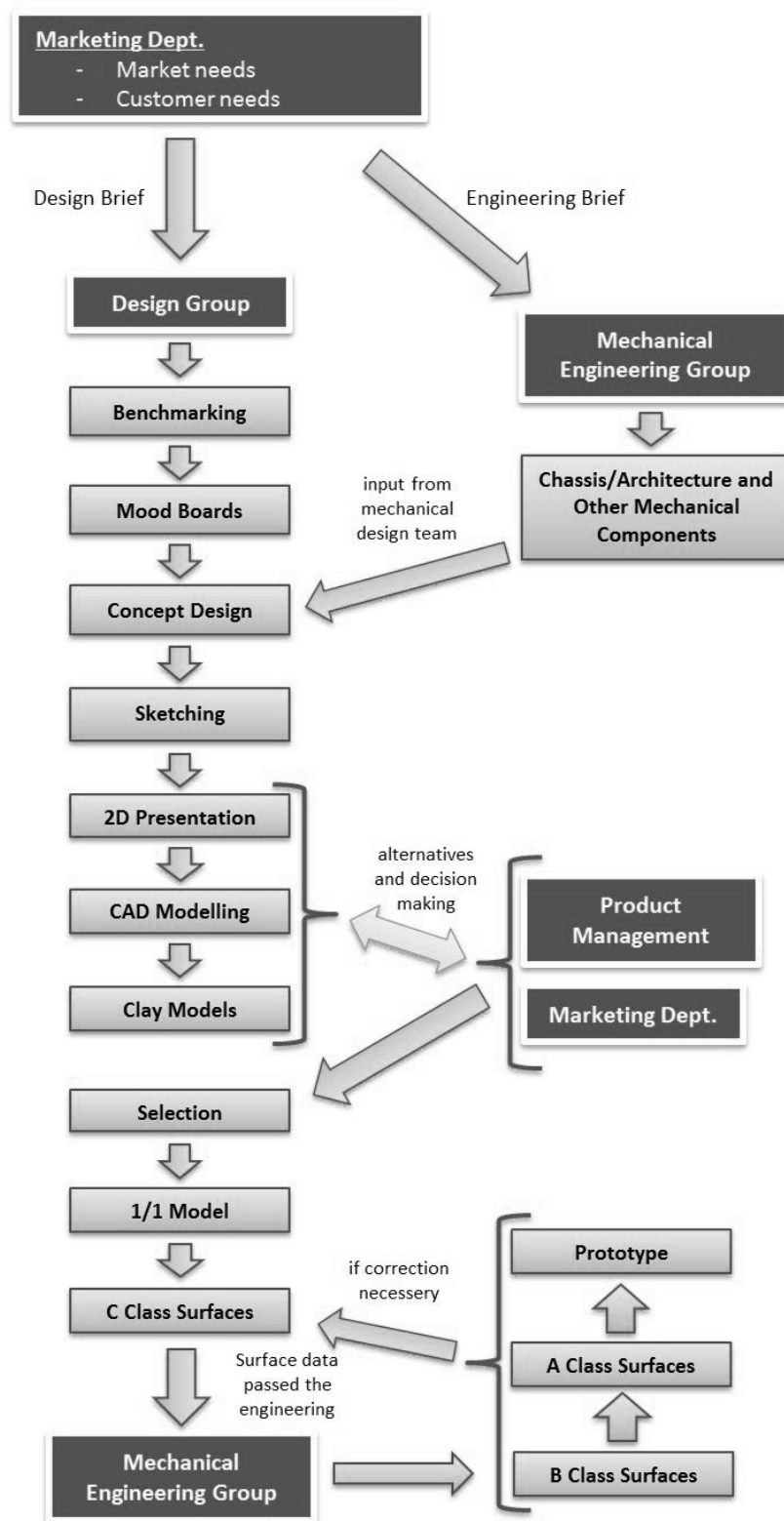


Figure 35 Automotive design process in company D as described by the in-house automotive designers

The automotive design process in company D, as described by the in-house automotive designers, begins with the two briefs prepared by the Marketing Department; the design brief and the engineering brief. The Marketing Department prepares these briefs according to the data gathered from its own research of market needs and of customer needs.

The design brief is passed on to the Design Group and the engineering brief is passed on to the Mechanical Engineering Group. The project flows in these two groups in their own systematic process.

The Design Group begins with the benchmarking phase, where data on existing competitors' products currently on the market that are considered direct competitors to the project at hand is collected and studied. Then the Design Group begins the project with the mood boards phase.

In the mood boards phase, the Design Group creates large paper boards that carry visual or tactile examples of images, colors, textiles etc. to form a guiding and enlightening path to follow for the project at hand. The information and motivation gathered from these boards are used in the concept design phase.

While the automotive designers are beginning the concept design phase of the process, the Mechanical Engineering Group, which had begun and completed initial tasks according to their Engineering Brief, give the Design Group a semi-developed, or ready-made, chassis and other mechanical components to form a skeleton that the Design Group can work on.

With the data obtained from the Mechanical Engineering Group, the Design Group completes the concept design phase to move on to the sketching phase to form alternative designs of the project vehicle. During this phase, the Design Group creates alternative designs to be used for the vehicle.

In the following three phases, the 2D presentation phase, the CAD modeling phase, and the clay models phase, the Design Group works in constant dialogue with the Product Management and Marketing departments; discussing on alternatives and making decisions.

In the 2D presentation phase, the sketches formed in the sketching phase are presented to certain departments to be discussed during the aforementioned meeting. The meeting concludes with a reduction of alternative two-dimensional designs and the chosen sketches are moved to the CAD modeling phase.

In the CAD modeling phase, the chosen sketches are computer modeled using Computer Aided Design tools to form surface data. This data is used in the next phase.

With the clay models phase, a range from scale models to partial full-scale models to full scale models are made to finalize the decision making process on the candidate design. The selection phase concludes the decision making progress between departments that began with the 2D presentation phase.

The Design Group continues working on the selected design in the 1/1 model phase. During this phase, the Design Group builds a full scale clay model and then uses this data to form the necessary surface in the next phase.

The last phase that involves the Design Group, the C class surface phase, begins with the data from the full scale clay models and data from the Mechanical Engineering Group, if it is ready. In this phase, the Design Group adds the latest additions to the CAD model and sends the data to the Mechanical Engineering Group.



The Mechanical Engineering Group uses the data from the C class surface phase of the Design Group to establish the B class surface data and then the A class surface data and finally a prototype vehicle. If problems arise during any of the surface modeling phases, the Mechanical Engineering Group may send the data to the Design Group to be corrected.

The in-house automotive designers of the company made some important comments about the process during the interviews that are given below.

One automotive designer stated that most of the marketing department consisted of people with industrial engineering background that this was a handicap to the design process. The automotive designer also stated that the amount of information that needed to be discussed with the engineers during a project was overwhelming and unnecessary. Another automotive designer stated that the marketing department and the engineers became the clients of the design team and that you had to create work that they must like or that it did not get accepted. One other automotive designer stated '[...] we do not speak the same language, for example, we have to translate it somewhat' (26). The automotive designer also stated that the briefs that are passed down from the marketing department always dictate them to form skins around structures built by engineers rather than conducting original design work for the vehicles. The same automotive designer added by saying that even though communication is very hard with the engineers, the automotive designer still has to sign off on everything that the engineers try to change what the automotive designers designed, and if the automotive designers do not sign off, the engineers cannot change the design but, the automotive designer added, that it did not really work in practice as such.

#### **4.2.3.5. Views of Automotive Industry Experts on In-house Automotive Design Process in the Automotive Industry in Turkey**

##### **Automotive industry expert 1**

Automotive industry expert 1 began with a generalized explanation of the automotive design process. The automotive industry expert stated that a new project takes about 5 years in the industry while a facelift takes 1-2 years. The automotive industry expert stated that new projects are seldom seen, if any, in the automotive industry in Turkey.

The automotive industry expert stated 'The systematic process, devised in the last 10 years, is an inclusive and sharing system. The designer is limited, in terms of budget and timing, in relation with the proposals and requirements given to them by marketing' (27).

The automotive industry expert believed that a conceptual phase should be allowed to form in the design team. The design team should carry the project from the concept phase to the surface CAD modeling phase.

The automotive industry expert stated that at the end of the surface CAD modeling phase, the project should be turned over to the engineering team. At this stage, all the teams should start working in a collaborative manner. The project should become more than just an art object of the automotive designer; it should be removed from the "compulsory reflex" of the automotive designer, and should be turned into a project that satisfies many different groups of people, such as financing, engineering, marketing and even inputs from OEM firms.

##### **Automotive industry expert 2**

Automotive industry expert 2 did not give an explanation of the automotive design process. The automotive industry expert stated that a working flow of information to the design teams were unavailable in the automotive industry in Turkey and the whole process consisted of technical and engineering achievements without the automotive designers playing a crucial role in the process.

### **Automotive industry expert 3**

Automotive industry expert 3 expressed that the automotive design process is a very involving and tough process that should begin with the research and analyses of the strategic marketing department.

The automotive industry expert stated that this data should be passed on to the design team as a brief, describing every detail, as much as possible. The design team then should begin with a pilot concept stage, where they are working on preliminary ideas. These preliminary ideas should be discussed in-between departments, involving executive managers, project platform managers, the design team, engineers and marketing.

The project then should move to the engineering team where the engineers should decide on the architectural aspects of the design, such as motor placement, seat placement, ergonomic features, and present them as packages to the design team.

The design team then should incorporate these packages into a finalized concept and begin working on scale models, while adapting the changes given by the engineering team. These scale models and the finalized concepts should be eliminated with inputs from all departments.

The automotive industry expert stated that the elimination process should leave a single concept that should be turned into a full scale prototype that is agreed on by every department. Feasibility work should be conducted afterwards to prepare the prototype into a production setting, integrating the necessary changes as they arise.

### **Automotive industry expert 4**

Automotive industry expert 4 stated that new automotive product development process is not experienced in the automotive industry in Turkey. The automotive industry expert stated that only project that are currently on the market are turned into facelift projects or half-finished design projects, conducted abroad, are taken as engineering projects to the firms.

The automotive industry expert stated that the automotive design process does not begin with the design team but, rather it begins with the engineering team working on the architecture of the vehicle and deciding on my factors. The automotive industry expert stated that by the time the engineering team turns over the project to the design team, most factors are decided on.

The design teams want to conduct their own analyses and research on the subject. They want to change some aspects of the product to make it ergonomic and incorporate their own findings from their own trend analysis. The automotive industry expert stated that how much of this the design team can accomplish is trivial but, in the end, the data is passed back to the engineering team for adaptation into a production environment. These steps consist of prototyping the designs, several times, and trying these in different testing environments.

The automotive industry expert expressed that the selected prototype, before it is given to the production department, has to pass the testing and standardization processes. Only after the completion of these the prototype is validated and given to the production department to be produced.

### **Automotive industry expert 5**

Automotive industry expert 5 stated that the automotive design process is a very complex process that begins with market research, client input and project design. This phase is conducted by parties other than the design team and that it is given to the design team as a design brief.

The automotive industry expert states that the design team begins working with the inputs from this design brief. Although the design brief has statements about the project that must be clearly defined, the concept phase that the design team initially conducts has to be free from any outside manipulation. The automotive designers should be able to incorporate their ideas in the concept phase and create several, a minimum of five, alternatives using methods such as sketching and CAD modeling.

The automotive industry expert expresses that the alternatives created by the design team should be shared with the potential clients of the project. The various forms of inputs, surveys, focus groups and suggestions from the clients should be taken into account as the project moves forward.

The inputs from the clients and the in-firm discussions should take the alternatives to the realistic CAD modeling stage, with the adaptations of necessary changes. These adaptations also include data from the engineering team such as chassis engineering, motor choices, OEM parts from other firms and other architectural inputs.

The automotive industry expert stated that the realistic CAD modeling process leads to the prototyping phase, where a realistic and functioning prototype is tested in various aspects and is shown to the clients for feedback on style and performance. If expectations are met, the prototype should move to the conceptual phase of color, materials and texture. This phase should include inputs from both the design team and the market research data from the marketing department.

The last phase, as the automotive industry expert stated, should be the production stage. All the data from the design team and the engineering teams are combined with the feedback from the prototype and are given to the production team to prepare the vehicle for production.

### **Discussions on Automotive Design as a Process**

The process of automotive design in the automotive industry in Turkey was examined by looking at the automotive design processes of four companies and the views of the automotive industry experts about the automotive design process in the automotive industry in Turkey.

There are some similarities in these four processes that are interesting to note. All the processes that were examined begin without the involvement of the design group or the automotive design manager. This signifies that the automotive designers or the automotive design manager has no input in the formation of the design brief. The formation of the design brief; the vehicle specifications, the customer base, the market research, or other points are conducted and decided by other parties such as the marketing department and the management of the company. The respondents stated that the people working in these departments are all either industrial engineers or people with marketing backgrounds and that this creates a language and vision problem in the company. Two of the in-house automotive designers, three automotive industry experts and two automotive design managers stated the importance of a successful design for the automotive design process and believe that the involvement of the design group or the automotive design manager in the beginning of the process is crucial.

There are, also, some differences between the companies in terms of how the automotive design process is conducted. The main differences are caused by the approach of the company towards

automotive design and the expectations from it, the interest of the automotive design manager in automotive design, the influence of the automotive design manager in the managerial divisions of the company, and the physical and mental status of the automotive designers working in the company.

The companies that are more interested in automotive design or that expect more from it are easily observable by the amount of attention and budget the design teams receive from the companies. Although this might not change the phases of the automotive process, it does change the effectiveness of the phase or the amount of time spent in it. The companies that are more interested design allow their automotive designers to spend more quality time in the phases of the automotive design process. This interest also influences the expectation from the automotive designers in the design process phases. The company that is interested in automotive design tends to expect a more methodically thought out and more correct outcomes from the phases that the automotive designers conduct.

The difference of interest from the automotive design managers influences the success of the automotive design process in the companies. The automotive design managers that are more interested in automotive design spend time in trying to learn about the profession by researching and spending time with the automotive designers throughout the projects. The uninterested automotive design managers hinder the design process by not giving the required critiques or not spending the required time with the automotive design team. There are even instances, as stated by two automotive designers, one automotive industry expert and one automotive design manager, where the automotive design manager also supports the understanding of “engineering over design” in dialogues between the design team and the engineering department.

The influence of the automotive design manager in the managerial divisions of the company has a great influence on the success of the automotive design process. Although none of the companies in Turkey have automotive designer managers that have great influence in the top of the company, some of the automotive design managers have some input, or suggestive power, in the management meetings. This suggestive power, when used, has great influence in pushing automotive design in the company and is also very motivating for the automotive designers.

The physical and mental states of the in-house automotive designers are also very important for a successful automotive design process. In three of the companies, the automotive designers do not have their own office spaces and are forced to share with the department that they are located in. This lack of space creates a burden for the automotive designer in terms of creativity and decreases the level of motivation the automotive designer has to design. A similar issue arises during the frequent departmental meetings between the automotive designers and other departments. The support received from the automotive design manager during these meetings is crucial for the automotive designers in keeping their motivations and self-confidence high.

The small numbers of in-house automotive designers employed by the companies creates problems in the flow of the process. In the automotive industry in Turkey, there are no teams of automotive designers that are focused on subjects, instead, tasks are given to people for completion. This creates too much work for the in-house automotive designers and causes them to request longer deadlines, which the companies do not afford. On the other hand, the companies in the global automotive industry, as described by the respondent automotive designers and the literature (Section 2.4), have teams of people working on certain subjects. The subjects can be sketching, modeling or rendering, there are teams working on different aspects of the design process. The larger number of automotive designers allows the automotive design manager to distribute the work to teams and expect the work to be completed before the deadline.

The automotive design process is limited by the data expected from the mechanical engineering team. This data consists of the main structure of the vehicle and the “packets” that contain the engine placements, seat placements and other such information. Without this data, the design team cannot accurately design or sketch a vehicle in a realistic fashion. Therefore, in some of the companies, the phases that are conducted before this data is presented to the design team are mostly conceptual and can change depending on the data from engineering. However, in some of the companies, the conceptual and the sketching phases are seen as a loss of valuable time or are considered phases that can be shortened depending on the amount of time required by other departments. This view is opposed by the automotive designers and is put forth as a misunderstanding of design and automotive design in the company.

Some of the companies have confusing expectations from their automotive designers. The automotive designers are expected to design products for the companies, but they are expected to refrain “from reinventing the wheel”, to create “things” that the “management and engineering will like”, and to “support the engineers” in their tasks. The majority of the automotive designers, an automotive industry expert and an automotive design manager states that the main reason for these requests is caused by the large number of people with engineering backgrounds that are present in the companies. The automotive designers state that the engineers see design as their own process and they see the work of the automotive designers as unnecessary and time consuming “fantasies”. This understanding creates problems in the creation of original and innovative designs by the automotive designers during the automotive design process.

Another issue of interest is the discussion and selection of designs. The design group presents their designs for discussion and selection to a committee of departments that does not contain the design group. In all of the companies, this selection group consists of people with a diverse group of backgrounds from engineering, management and marketing. However, during these presentations, the automotive designers are put in a position that has no say in the discussions and selections of the ideas. The selection committee expects the design group to accept the changes proposed. As one automotive design manager states, the automotive designers cannot be a judge and an attorney at the same time. This point of view has a damaging impact on the automotive design process as it prevents the automotive designer from arguing the necessary points for successful ideas and products.

As two of the automotive industry experts stated, the automotive design process, in terms of automotive designers, is very problematic when compared to the companies in the global automotive industry. The process heavily consists of technical and engineering achievements and that the creative process is almost non-existent.

#### **4.2.4. Automotive Design as an Outsourced or Partially Outsourced Process in the Automotive Industry in Turkey**

As it was in the previous heading, this heading will also concentrate on the view of and stance of the companies but, will include the comments from the participants about their company’s practices in terms of outsourcing design. The views of the automotive industry experts will be given after the company procedures are explained.

From the analyses of the field study, two kinds of design outsourcing practices are examined in the automotive industry in Turkey. These practices change according to the project type or other factors such as deadlines and economics.

- Outsourcing the whole design process
- Outsourcing component design

These practices are conducted in different methods. These methods depend on the company's approach to the design process and on its relations with the owner firm. These methods are listed below.

- **Outsourcing design to other firms:** Outsourcing of the whole design or component design to other companies such as design firms or third-party manufacturers. This is used by many companies in the automotive industry in Turkey.
- **Outsourcing design to owner firm:** Outsourcing of design related issues (whole design or component design) to the owner firm's design team while conducting engineering work internally. This method is used by companies that are the child company in Turkey and that have owner firms abroad.
- **Outsourced design from owner firm:** Design related issues (whole design or component design) that are outsourced to the child company in Turkey by the owner company abroad. This method is used by companies that need local design input to specific situations that are usually geographically, culturally, and/or socially defined.

#### **4.2.4.1. Outsourcing the Whole Design Process**

In some of the companies, the whole design process is outsourced to other companies. These companies can be the child company of the brand owner firm, they can be the owner firm of the child company or they can be design firms.

If this path is chosen, all the design briefs and engineering briefs formed by the company that is outsourcing the design are passed on to the outsourced company with certain deadlines. These deadlines are usually met with presentations from the outsourced company to the outsourcing company. During these presentations and meetings, decisions are formed and are given to the outsourced company for review and integration until the next deadline.

A design process, similar to the ones conducted by the in-house design teams, is conducted by the outsourced design team. This process may include phases such as benchmarking, concept design, sketching, CAD modeling, clay modeling, prototyping and even engineering, if the company is capable of it.

The findings show that companies that choose this method are usually companies that have child or owner firms, or companies with no in-house design teams.

#### **4.2.4.2. Outsourcing Component Design**

In some firms, parts of the design process, which are sometimes unrelated components of the same vehicle, are given as outsourced projects to companies. The outsourced companies are either design firms or third-party manufacturers.

The findings show that if this path is chosen, specifically design briefs and engineering briefs about the component(s) are formed by the company that is outsourcing the design are passed on to the outsourced company with certain deadlines. These deadlines are usually met with presentations from the outsourced company to the outsourcing company. During these presentations and meetings, decisions are formed and are given to the outsourced company for review and integration until the next deadline.

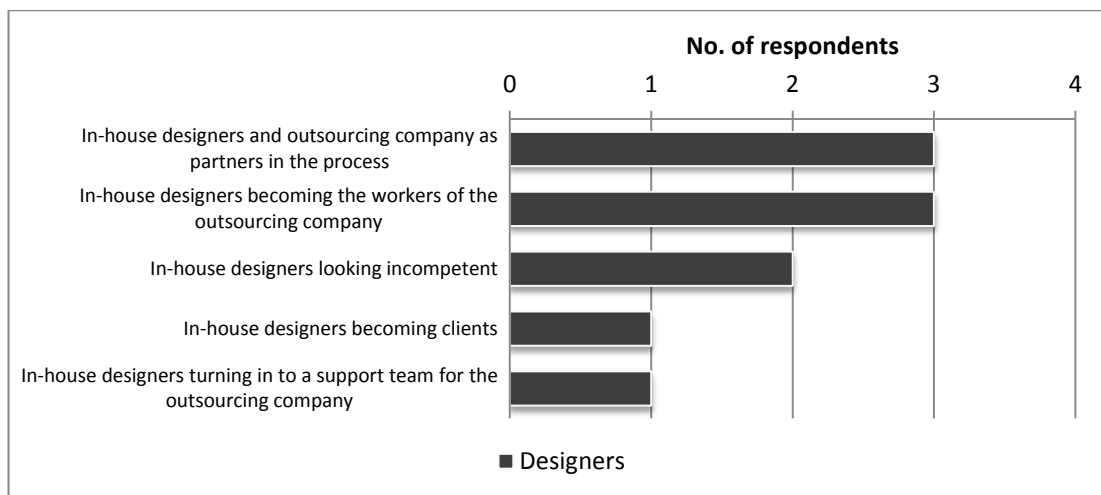
A design process might or might not take place depending on the component(s) that are being outsourced. These components are either designed from scratch, or modifications are made to some other products of the outsourced company, or are used ready-made without modifications. The findings show that even though a design process might not take place in the outsourced company, the outsourcing companies still prefer to outsource their components to companies with design facilities.

The findings show that this method is used by companies that either have tight schedules with no time for internal development, or that choose to buy ready-made components from third-party manufacturers with internal design facilities.

#### 4.2.4.3. Assessments of In-house Automotive designers during the Outsourcing of Design in the Automotive Industry in Turkey

The participant in-house automotive designers were asked about their roles during the outsourcing of projects to other companies. They were expected to comment on the process and the relations the in-house automotive designers have with the outsourcing company.

The graph (Figure 36) shows the assessments of the in-house automotive designers during the outsourcing phase of projects of their companies.



**Figure 36 Assessments of the in-house automotive designers during the outsourcing phase of projects of their companies**

As the graph shows, three of the automotive designers believe that the in-house automotive designers of the outsourcing company and the outsourced company become partners during the outsourcing phase of the design process. They work together as a team to complete the task at hand. Three of the other automotive designers believe and feel that they become workers of the outsourced company. This is mostly true, the automotive designers state, for working with the owner firm as the outsourced design company. They feel that they are used as technicians in projects when this is the case. Two of the remaining participant automotive designers feel that they look incompetent when design is outsourced from their company to other firms. This, they state, is humiliating and unnecessary but, they believe, the company sees them as being incompetent for the task. One other automotive designer believes that a client-designer relationship gets formed with the outsourced company, where the in-house automotive designer becomes the client. The other

automotive designer stated that the in-house automotive designers turn into a support team, only acting as they are needed or are told to, when working as the outsourcing company and when the owner firm is the outsourced company.

#### **4.2.4.4. Outsourcing of Design in Company A**

Outsourcing is used in some divisions of the company, used to be used in the design team but, was abandoned after the formation of a larger design team.

Vehicles which are nine meters and longer are designed by the design team. Vehicles that are shorter than nine meters are managed by the product engineering department, which outsources all the design work.

The in-house automotive designers begin working with the outsourcing automotive designers during the outsourced projects by giving the outsourcing automotive designers a design brief. This design brief is given sometimes by digital means or it is given in person. The design brief includes the needs of the R&D department and the expectations with the deadlines for certain milestones. The design brief is also followed by a written agreement that defines payment, tasks expected and deadlines to complete the tasks defined.

The outsourcing automotive designers are sometimes used because the company managers, project managers or automotive design manager see the in-house automotive designers as being incompetent to achieve the required tasks.

The outsourcing automotive designers deliver initial sketches, consisting of alternative designs. These are discussed between in-house automotive designers and the outsourcing automotive designers. The process continues with several more meetings for every step task required in the agreement.

The relationship is an earnest relationship rather than an employer-employee relationship. It is important for the company to see that the outsourcing automotive designers are involved in the process; taking an interest in the products to see it through to the end. The company does not want a relationship where the outsourcing automotive designers are only concentrated on the work that is given to them and nothing more or less.

#### **4.2.4.5. Outsourcing of Design in Company B**

Some of the vehicle groups are designed abroad, by the design team of the owner brand in other countries.

One automotive designer states that there are no automotive designers in Turkey that are capable of modeling A Class Surfaces. The automotive designer states that the people who are capable of doing so are brought, for a fee, to Turkey, from the owner firm, for years at a time, to model these surfaces before they return to their countries.

The automotive design manager of the company states '[...] as a principle, you should not outsource things that influence the brand image' (28). The automotive design manager also states that those companies, which cannot find the courage or achieve the financial feasibility, are choosing the method of outsourcing to complete tasks.



The outsourced design aspects of the work are mostly the concept and design phases of the products. Almost all the products are conceptualized and designed abroad. The outsourced design team is also a part of the mother company, but a bigger design studio in another country. They send the finished designs for adaptation and engineering for manufacture.

As the automotive designer stated above, some of the CAD modeling phases are conducted with automotive designers who are hired from the mother company to come and work here, staying for large periods of time. These persons usually tell the in-house automotive designers what needs done. Sometimes this relationship becomes a teacher-student relationship or sometimes the in-house automotive designers become the workers of these outsourcing automotive designers.

The outsourcing automotive designers are mostly used because the company managers, project managers or automotive design manager see the in-house automotive designers as being incompetent to achieve the required tasks.

The company sees investment on in-house automotive designers as a risk not worth taking. Especially because of the potential job offers that an automotive designer begins receiving when he begins to get known for achievements. The company does not want to invest in automotive designers that have the potential to leave the company for offers from other companies.

#### **4.2.4.6. Outsourcing of Design in Company C**

After the design team was established in the company, the outsourcing of design was put on hold, but designed components are still bought from third-party firms that have their internal design teams.

#### **4.2.4.7. Views of Automotive Industry Experts on Outsourcing Design in the Automotive Industry in Turkey**

Automotive industry experts are divided on the issue of outsourcing of design to outside companies. The views of the automotive industry experts are given below.

Automotive industry expert 1 believes that design should not be outsourced to design companies. The automotive industry expert states that a thought like this is unacceptable, that the brand identity is not something that can be trusted upon outsiders and that outside firms cannot have the insight into seeing the needs of the automotive company as it is viewed from the inside.

Automotive industry expert 2 and automotive industry expert 4 believe that outsourcing can be used sometimes and depends on the situation at hand. Automotive industry expert 2 states that idea injections such as these can be helpful and that different ideas are always needed around the table. Automotive industry expert 4 states that this is a positive thing and that the real know-how should always be collected inside the company, but, the automotive industry expert adds, it is useful to get support at times.

Automotive industry expert 3 believes that outsourcing should always be used. The automotive industry expert states that new ideas, innovations and different points of view are not obtainable from people who are always in the same atmosphere. The automotive industry expert adds that it is very helpful to go outside and obtain new and fresh ideas.

## **Discussions on Automotive Design as an Outsourced or Partially Outsourced Process in the Automotive Industry in Turkey**

Outsourcing is used by companies in the automotive industry in Turkey for different reasons. The findings show that of the four companies only two are outsourcing their design projects while the other two are not. However, one of the companies that do not outsource design projects buys ready-made components from OEM manufacturers that have their own internal design teams.

One interesting discussion is about the way design outsourcing is used in the companies. The companies do not use design outsourcing to gather new, original and/or innovative design ideas from automotive designers outside the companies, but they use it to distribute the work of the internal design groups. This approach is not welcomed by the in-house automotive designers as a majority of them believe that they are not given enough different projects to work on. The briefs that are given to outsourcing companies are not prepared by the in-house automotive design groups or the automotive design managers, but are prepared by the managements or the marketing departments. However, the in-house automotive designers are expected to work with the outsourced company in the presentations and to follow the deadlines.

There are different practices in working with outsourced companies and that these change according to the position of the companies. If the company is owned by a foreign company that conducts most of the automotive design work abroad, then the company in Turkey sometimes hires automotive designers from the owner firm to come and live in Turkey for a certain amount of time and act as an outsourced automotive designer, or outsourced automotive design manager, inside the company. On the other hand, sometimes the owner firm requests the child firm to perform certain tasks requested of them for a period of times, using them as the outsourced partner, or even request that some members from the design group to be relocated to one of the offices in another part of the world to work on a different project. This type of in-brand outsourcing is seen in two of the biggest companies in Turkey and in the companies of the global automotive industry that have multiple offices around the world. However, this type of outsourcing disrupts the in-house automotive design process of the company or even suggests that the in-house design team is not competent enough, or not large enough, to conduct their own design processes. Some automotive designers stated that they are not seen competent enough by the company at certain stages of the design process, and that bringing automotive designers from abroad to conduct work agrees with this view.

Most of the automotive companies in Turkey that are looking to outsource projects are investigating design firms that are abroad. This is mainly caused by, as the automotive designers also state, the lack of design companies in Turkey that focus on automotive design. This shortage of design firms, and some other reasons, pushes the automotive companies in Turkey to look for design firms that have creditable reputations in the global market, which are also very expensive. One automotive designer stated '[...] an offer was received, from Belgium, but that was going to bring great costs, and it was abandoned because of these costs' (29). Nevertheless, the need for design firms that are competent in automotive design is showing its need for more than one company in the automotive industry in Turkey.

On the other hand, the automotive industry experts, the four that responded, are divided on the issue of outsourcing. One automotive industry expert stated 'A thought like this cannot exist [...] There is a thing called brand identity' (30). Another automotive industry expert emphasized 'Of course they definitely have to do it, this newness will bring different points of view, people become dull as they stay in the same environment, they cannot see, they keep repeating themselves, cannot be innovative, that is why it is a great benefit to go outside and bring stuff from there' (31). One other automotive industry expert expressed 'In-house design has to exist, the accumulation of knowledge has to be gathered inside, but support from outside should be taken' (32). Although the automotive industry experts make valid points, the main reason for design outsourcing is not to

receive fresh new ideas from outside companies. Outsourcing is very much used in the automotive industry in Turkey for engineering and components. The majority of the automotive industry in Turkey does not manufacture its own engines, or drive-trains, but buys them ready-made from abroad and local markets. However, the same kind of outsourcing is happening in terms of design. The companies buy designed and ready-made products such as seating, lights, gauges and many other parts of the vehicles that the in-house automotive designers should very well be capable of designing. These, the automotive designers stated, are cheaper to buy than to design, engineer and manufacture. This understanding of automotive design signifies the present situation of the automotive industry in Turkey as a manufacturing or assembling industry, instead of a developing and designing industry.

### 4.3. Understanding of the “Automotive Designer”

The heading examines the term “automotive designer”, analyses and discusses its definition, formation, education, its acceptance in the industry, its position in the companies, and expectations of and from them.

#### 4.3.1. The Definition of the Automotive Designer

The following graph represents the participants’ view on the knowledge and/or abilities that are expected of automotive designers and therefore defines who automotive designers are.

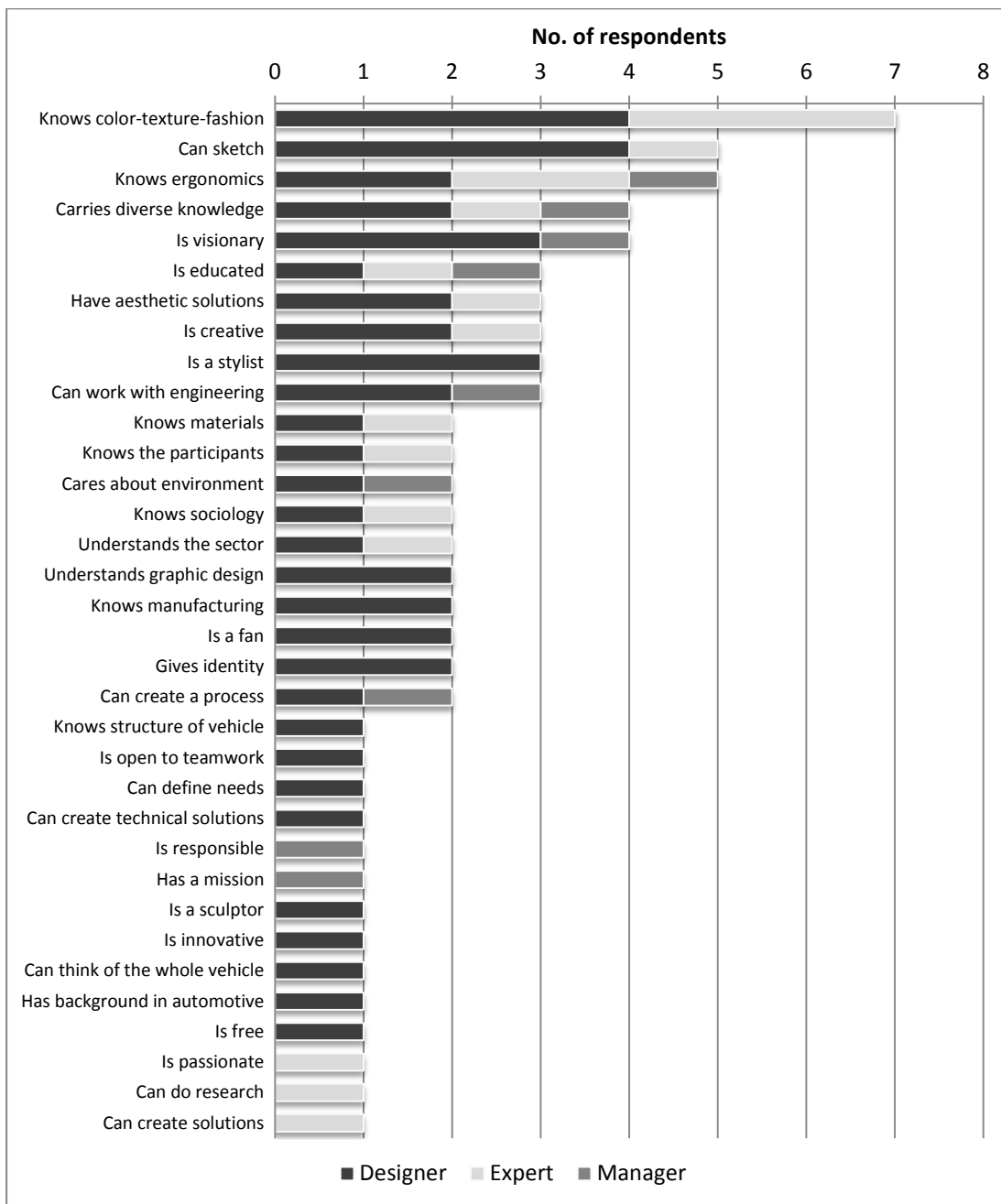


Figure 37 Participants’ view on the knowledge, qualities, and/or abilities that make an automotive designer

The short explanations below are given, in order of appearance in the graph (Figure 37), beginning from the topics that received the most mentions to the ones that received the least.

- **Knows color-texture-fashion:** The topic that was given the most mentions by the participants (4 automotive designers, 3 automotive industry experts) is the about the knowledge of color, texture and fashion that an automotive designer is expected to have and that defines the automotive designer. This knowledge is expected especially from automotive designers who are working in interior of the vehicle.
- **Can sketch:** Sharing the second place for the most received mentions from the participants (4 automotive designers, 1 automotive industry expert) is the expectation of the automotive designer to be able to sketch ideas and concepts effortlessly.
- **Knows ergonomics:** Sharing the second place for the most received mentions from the participants (2 automotive designers, 2 automotive industry experts, and 1 automotive design manager) is the knowledge of ergonomics that defines the automotive designer. This is the top most answer mentioned by all the participant groups.
- **Carries diverse knowledge:** Two automotive designers, one automotive industry expert and one automotive design manager stated that automotive designers should have diverse knowledge of issues. One automotive designer stated that an 'Automotive designer should be a person that follows everything, has some knowledge about everything, because automotive design includes fashion, materials, engineering, I mean, if a vehicle is going to go fast, there is the knowledge of aerodynamics, and not extensive knowledge, but has some knowledge on all of these issues and has been interested in this subject since a young age' (33).
- **Is visionary:** Four respondents (3 automotive designers and 1 automotive design manager) expected the automotive designer to have a vision for the company and its products and to express this vision through the design of its products. One automotive designer expressed '[...] [Is a person] with a very different vision, a vision that is a little bit different than those of other designers' (34).
- **Is educated:** One automotive designer, one automotive industry expert and one automotive design manager expected the automotive designer to have an education at least at a university level, or even a master's degree in automotive design or mechanical engineering.
- **Have aesthetic solutions:** Two automotive designers and one automotive industry expert expected the automotive designer to have aesthetic solutions for the products of the company. This sometimes reaches even to graphical elements that the companies apply to their products after production (advertisements and branding). The automotive industry expert that commented as 'Automotive designer [is a person], if concentrating on the style side of the profession, that understand things like volume, the artistic and visual trends that the world follows, and sees, understands, and interprets the things that people like' (35).
- **Is creative:** Two automotive designers and one automotive industry expert expected the automotive designer to be creative at every stage of the automotive design process. This creativity is expected to be applied to the design of the components and to the whole vehicle styling. The automotive designer who commented on this topic stated that the automotive designer is the person who can create the model difference, the person that actually fools the customer.

- **Is a stylist:** Three automotive designers expected the automotive designer to be a stylist. The terms stylist is could be considered a separate research subject, but in its simplest for, it stands for “form giver”.
- **Can work with engineering:** Two automotive designers and one automotive design manager expected the automotive designer to be able to work with the engineers in the engineering department in a cooperative manner. An automotive design manager that commented stated that the automotive designers, who can think parallel to the engineers, are the right automotive designers.
- **Knows materials:** One automotive designer and one automotive industry expert anticipated the automotive designer to know materials and their specification and uses. These materials include plastics, metals, woods, fabrics and glass.
- **Knows the participants:** One automotive designer and one automotive industry expert expected the automotive designer to have an understanding and respect for the other participants in the automotive design process.
- **Cares about environment:** One automotive designer and one automotive design manager anticipated the automotive designer to have respect and care for the environment; to be knowledgeable about environmental aspects of design and manufacturing.
- **Knows sociology:** One automotive designer and one automotive industry expert expected the automotive designer to have a certain amount of knowledge in the field of sociology to design successful products that are used by different people in different cultures with different social backgrounds. An automotive designer stated that ‘Primarily, an automotive designer needs to be social person; you need have a social personality’ (36).
- **Understands the sector:** One automotive designer and one automotive industry expert anticipated the automotive designer to have an understanding and to have knowledge about the automotive industry in Turkey and relatively enough information about the global automotive industry.
- **Understands graphic design:** Two automotive designers expected the automotive designer to have relatively enough information and capability to design graphical elements.
- **Knows manufacturing:** Two automotive designers anticipated the automotive designer to have knowledge of manufacturing of the whole vehicle, or parts of a vehicle, and what techniques are used during the manufacturing phases.
- **Is a fan:** Two automotive designers expected the automotive designer to be a fan of the automotive design profession. The automotive designer is anticipated to be a person that never thought of any other profession other than automotive designer. An automotive designer stated that if a person graduates from industrial design and wants to be an automotive industry expert in automotive design, that person will never be an automotive designer. An automotive industry expert stated that most of the automotive designers in world were not educated in the fields of design when they began designing automotive products.
- **Gives identity:** Two automotive designers anticipated the automotive designer to be the person that gives identity to the products, to the company and to the brand using the

designs infused into the products that are produced. An automotive designer stated design as 'It is impregnating the product with the corporate identity' (37).

- **Can create a process:** One automotive designer and one automotive design manager expected the automotive designer to create the automotive design process, initiate it and as some participants stated, lead it. An automotive designer stated 'When design is mentioned, it is the whole that includes the ability to see the whole process from the beginning to the end when it is recycled, the ability to design the vehicle, the ability to include the customer and the see the advantage gained by that customer from that vehicle, the ability to see the total cost of that vehicle, and the ability to include the issues surrounding the environment' (38).
- **Knows structure of vehicle:** One automotive designer anticipated the automotive designer to be knowledgeable about the underlying technical elements of a vehicle, what functions the parts carry, how they come together, and how these parts change the performance of the vehicle.
- **Is open to teamwork:** One automotive designer expected the automotive designer to be able to open to teamwork, to be able to work with other automotive designers as well as professions from other departments that are involved in the automotive development process. An automotive designer stated that automotive designers in the automotive industry in Turkey are expected to do all kinds of different tasks that are divided between groups of automotive designers in foreign countries. The automotive designer adds that these tasks prevent the formation of teams and creates chaotic job definitions.
- **Can define needs:** One automotive designer anticipated the automotive designer to be able to define the needs that are to be researched, to be examined, to be analyzed and to be studied, for implementation into present and future designs.
- **Can create technical solutions:** One automotive designer expected the automotive designer to be able to create basic technical solutions for the products that they design. These, as commented by participants, also have positive effects in dialogues with engineers.
- **Is responsible:** One automotive design manager anticipated the automotive designer to be responsible both in terms of the tasks and roles that they play and both towards their goals.
- **Has a mission:** One automotive design manager expected the automotive designer to have a mission in approaching the designs that are created and in approaching the profession that is conducted in the company.
- **Is a sculptor:** One automotive designer anticipated the automotive designer to have the skills and dedication of a sculptor when approaching the design of a vehicle, or parts of a vehicle. This is also important, as stated by the participants, in physical and digital modeling of vehicles and parts of vehicles.
- **Is innovative:** One automotive designer expected the automotive designer to be innovating, in terms of approach, in terms of ideas and in terms of products that it brings to the company.
- **Can think of the whole vehicle:** One automotive designer anticipated the automotive designer to be able to imagine the whole vehicle before and during the design phase, instead of being too focused on details and forgetting the big picture.

- **Has background in automotive:** One automotive designer expected the automotive designer to have a background in the automotive industry or to have had automotive designer education as a university student.
- **Is free:** One automotive designer anticipated the automotive designer to be free, both in terms of mindset and in terms of responsibilities to other participants, as much as possible.
- **Is passionate:** One automotive industry expert expected the automotive designer to be passionate about his/her profession, the industry and the designs that are created. This passion is expected to show in all the phases of the automotive design process.
- **Can do research:** One automotive industry expert anticipated the automotive designer to be able to conduct research about the project that is assigned to the design team. The automotive designer should know where to look, know how to gather data, know how to analyze and to be able present this research to others.
- **Can create solutions:** One automotive industry expert expected the automotive designer to create solutions for problems that arise during the design process. An automotive designer states that an automotive designer is the person that creates artistic solutions to existing problems.

There was another important comment about the definition of the automotive designer that was not given under the above topics because of its generalizing approach. This is given below.

One of the automotive designers stated that the automotive designer is just another specialized version of a designer and that it is not any different than being just a designer.

### **Discussions on the Definition of the Automotive Designer**

The definition heading received 34 different mentions from the respondents for defining the automotive designer. If we use the most mentioned three topics, for each of the respondent groups, to construct a basic sentence to define the automotive designer, we obtain the following definition.

An automotive designer is a person, who knows color-texture-fashion, can sketch, knows ergonomics, carries diverse knowledge, and who is a visionary.

Compared to all the mentioned topics, and the literature review (Sections 2.5, 2.8), this definition lacks depth and does not really define what an automotive designer is or does in the global automotive industry. On the other hand, it is practically descriptive of the in-house automotive designers' definition in the automotive industry in Turkey.

The graph shows (Figure 37) that the only topics that the three groups agree on are ergonomics knowledge, diverse knowledge, and the need for education.

There are 19 other topics mentioned for the definition of the automotive designer. Two of these are stated by the automotive design managers; the automotive designer has to be responsible and has to have a mission. Three of these are stated by the automotive industry experts; the automotive designer has to be passionate, should be able to conduct research, and should be able to create solutions. An interesting point is that the automotive design managers do not state a topic that has relations to the creative process or to stylistic side of automotive design. All the topics that define



the creative side of the automotive designers are stated by the in-house automotive designers and/or the automotive industry experts. The automotive design managers put less value on the creative side and more on the side of technical knowledge, managerial skills, and leadership skills. This is probably influenced by the automotive design managers' backgrounds in engineering.

#### 4.3.2. The Titles of the Automotive Designer Used in the Automotive Industry in Turkey

Although this thesis uses the title "automotive designer" for the profession it is examining, the participants stated that there are various titles that the people in the industry use to refer to the profession. These titles are given in the graph (Figure 38) in reference to the number of participants that have mentioned them in answer to the question relating to the titles used for automotive designers in the automotive industry in Turkey.

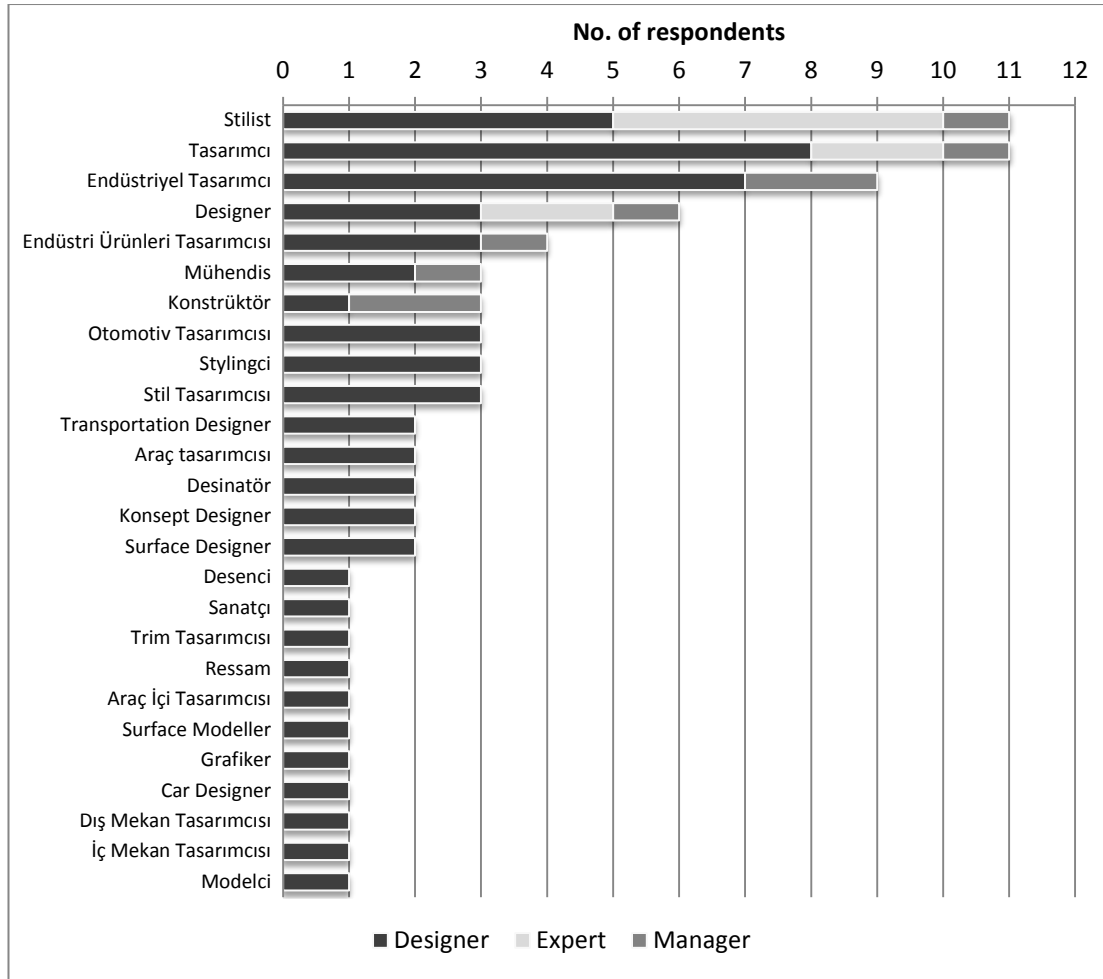


Figure 38 Titles of the automotive designer used in the industry

The titles that need translation into English are given below for reference. These titles are either in the literature and are already referenced or are translated for this thesis to explain the meanings of the words from Turkish.

- **Stilist:** Stylist
- **Tasarımcı:** Designer

- **Endüstriyel Tasarımcı:** Industrial Designer
- **Endüstri Ürünleri Tasarımcısı:** Industrial Products Designer
- **Mühendis:** Engineer
- **Konstrüktör:** Constructor
- **Otomotiv Tasarımcısı:** Automotive Designer
- **Stylingci:** Stylist
- **Stil Tasarımcısı:** Style Designer
- **Araç tasarımcısı:** Vehicle Designer
- **Desinatör:** Designer
- **Konsept Designer:** Concept Designer
- **Desenci:** Sketcher
- **Sanatçı:** Artist
- **Trim Tasarımcısı:** Trim Designer
- **Ressam:** Painter
- **Araç İçi Tasarımcısı:** Vehicle Interior Designer
- **Grafiker:** Graphic Artist
- **Dış Mekan Tasarımcısı:** External Space Designer
- **İç Mekan Tasarımcısı:** Internal Space Designer
- **Modelci:** Modeler

Most of these titles are given in Turkish and some of them are given in English. The reason for this comes from the mixed use of these titles in the automotive industry in Turkey. Although, for example, the automotive designer may be titled as “Designer” in the industry by some people, this title is not used as the translated meaning of the word “Tasarımcı”, but rather as a separate memorized word. This is, as the respondents described, is related to the recitation of the word “Designer”, as heard and used by the persons, who take them from various sources, rather than knowing that the translation is also available for usage.

There are other factors that cause this usage in the industry as described by the respondents. One of the important reasons that separates itself is the use of the word “designer” and titles that are prepositional phrase with the word “designer” in them are used for automotive designers and the word “Tasarımcı” is used for engineers.

Other factors include the specific job that the automotive designer conducts in the company such as sketching, helping engineering, or even the name of the department that the automotive designers are working in.

One automotive designer stated that although the engineers are conducting part designs in their departments, the naming scheme and their right to use the word “designer” for themselves arises from the fact that the 99.5% of the company are engineers by background. The automotive designer adds that the name left for them to use is usually either “stylist” or “style designer”.

An automotive industry expert stated that ‘[...] the replacement of ‘engineering’ with the word ‘design’, we are trying to break this tradition, but that was a big mistake’ (39). Another automotive industry expert stated that the engineers are not happy about sharing the title of “designer” with the automotive designers.

### **Discussions on the Titles of the Automotive Designer in the Automotive Industry in Turkey**

There are 26 different titles mentioned by the respondents that are used to refer to the in-house automotive designer in the automotive industry in Turkey. Most of these titles are not used by the

respondents, but have been witnessed or heard by the respondents as being used to describe the in-house automotive designers.

An interesting point raised by the respondents, and also witnessed by the researcher, is the usage of the word “designer” in dialogues. This point is related to the habit of using English words while speaking Turkish. Although the translation of the English word “designer” into Turkish is “tasarımcı”, some people do not see them as the same word from two different languages. A similar problem was also seen in the English word “design” and its Turkish translation “tasarım”. This causes the same word, from two different languages, to be used to define different subjects. This was tested, in two of the companies, on different people that were met during the researcher’s visits. When the word “designer” was used in two of the companies, the people working at the company understood that the people who work in the design group were the subject. When the word “tasarımcı” is used, some people thought that the mechanical engineers were the subject. The problem of the ownership of the word “tasarımcı” and/or “tasarım”, and the habit of using English words without understanding or accepting their translations in Turkish creates a complicated problem, a problem that is also sociocultural, in the definition of the automotive designer, as well as many other design fields, in Turkey. However, this problem is outside the context of this thesis, but requires further investigation.

The table (Table 16) displays the comparison of titles used in the global brands and the automotive industry in Turkey.

**Table 16 Comparison of titles used in the global brands and the automotive industry in Turkey**

<b>Titles observed in the literature review</b>	<b>Titles used for the Automotive Industry in Turkey</b>
<b>Artist</b>	Araç İçi Tasarımcısı
<b>Automobile Designer</b>	Araç tasarımcısı
<b>Automotive Designer</b>	Car Designer
<b>Car Designer</b>	Desenci
<b>Designer</b>	Designer
<b>Industrial Designer</b>	Desinatör
<b>Stylist</b>	Dış Mekan Tasarımcısı
	Endüstri Ürünleri Tasarımcısı
	Endüstriyel Tasarımcı
	Grafiker
	İç Mekan Tasarımcısı
	Konsept Designer
	Konstrüktör
	Modelci
	Mühendis
	Otomotiv Tasarımcısı
	Ressam
	Sanatçı
	Stil Tasarımcısı
	Stilist
	Stylingci
	Surface Designer
	Surface Modeler
	Tasarımcı
	Transportation Designer
	Trim Tasarımcısı

The difference in the number of titles and the definition of the titles signify that there is an understanding difference between global automotive industry and the automotive industry in Turkey. The amount of titles in the automotive industry in Turkey signifies a misunderstanding of the definition of the automotive designer.

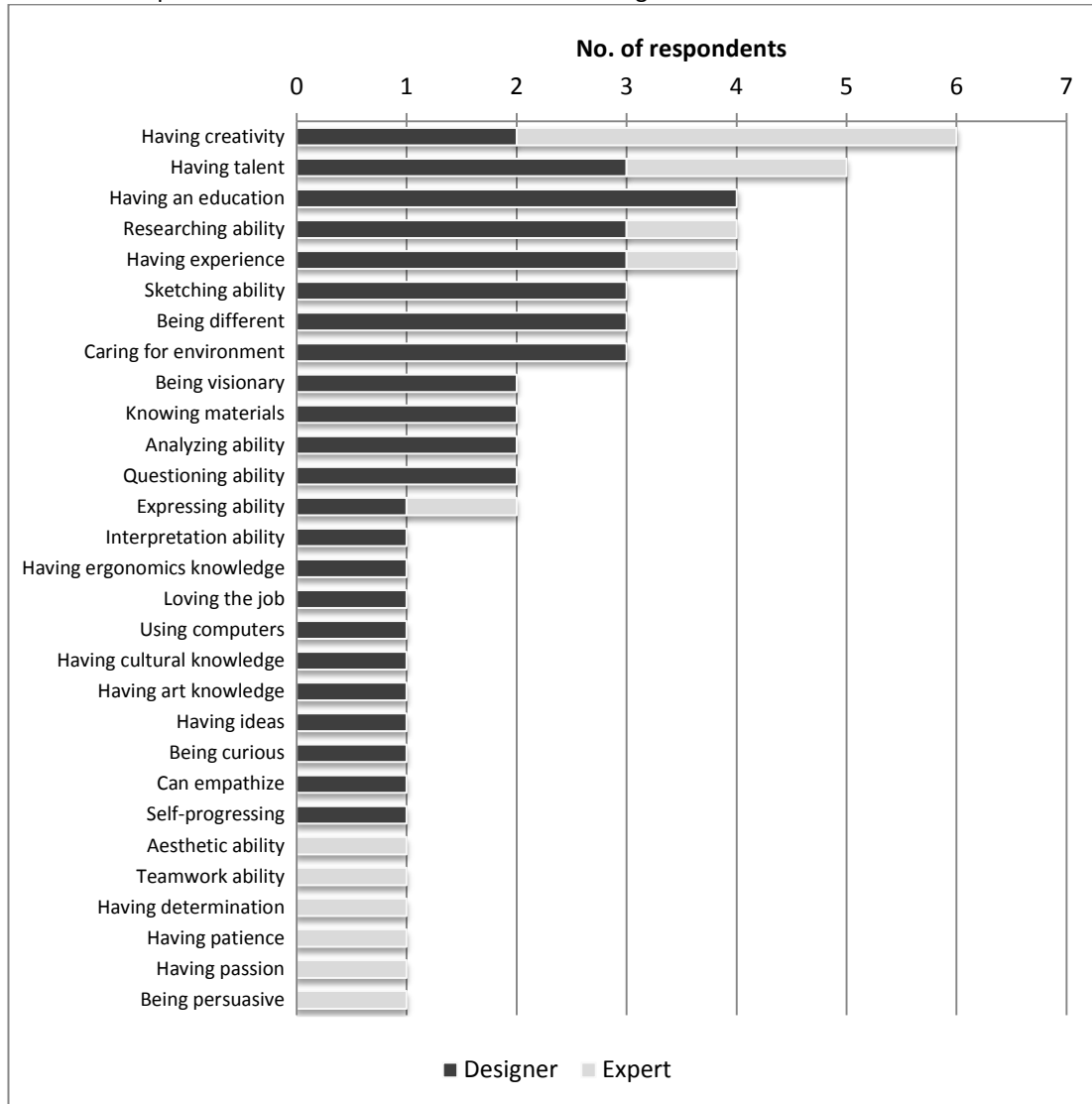
There are many titles attributed to the automotive designers that do not define their profession. Some of these titles are not even from tasks that the in-house automotive designers participate in. Titles such as “Engineer”, “Constructor”, “Painter”, “Artist”, and “Graphic Artist” are the titles of other professions and should not be used to as the title for an automotive designer. On the other hand, there are some of the titles mentioned by the respondents that do not fit the automotive designer as a title, but are attributed to them. This is caused by the impressions of people on observations, or by the expectations of managerial people, on what an automotive designer does.

The designers are observed while coloring renderings, examining mechanical features, drawing, sketching, designing icons or other tasks that are related to the automotive design process of the company. But, this causes the occasional observers to misunderstand the situation and attribute such titles to the designers.

The expectations of the automotive design managers or the company’s management also create these unfitting titles in Turkey. In all the companies, automotive designers are expected to conduct other tasks, which are sometimes unrelated to their profession, that are influenced by their position in the companies. Some of these actions signify that the automotive design managers, and sometimes the company’s management, do not understand the title, or the definition, of the automotive designer. Hence, these actions influence the rest of the companies and in turn cause some people to label the automotive designers with unsuitable titles.

### 4.3.3. The Factors that Influence the Formation of an Automotive Designer

The following graph represents the participants' view on the necessary knowledge, capabilities and talents that a person needs to become an automotive designer.



**Figure 39 Factors that influence the formation of an automotive designer**

The short explanations below are given in order of appearance in the graph (Figure 39), beginning from the topics that received the most mentions to the ones that received the least. Although the question was also asked to the automotive design managers, none of them gave an answer.

- **Having creativity:** The topic that received the most mentions is the automotive designers ability to be creative (2 automotive designers, 4 automotive industry experts). This was answered as a general creativity and not specific to a certain task.
- **Having talent:** The topic that gained the second most mentions (3 automotive designers, 2 automotive industry experts) is the necessity of the automotive designer to be talented towards the profession of automotive design.

- **Having an education:** Sharing the third space for total mentions (4 automotive designers), but the most mentioned topic by the automotive designers, is the importance of design education in the formation of the automotive designer. These mentions were not specific to an automotive design education, but varied, most stating that a design education of some form is important.
- **Researching ability:** Sharing the third space for total mentions (3 automotive designers, 1 automotive industry expert) is the importance of the automotive designers' ability to conduct research. This includes the ability knowing where to look, knowing how to gather data, knowing how to analyze and to being able present this research to others.
- **Having experience:** Sharing the third space for total mentions (3 automotive designers, 1 automotive industry expert) is having and gaining experience in terms of designing. This includes the ability to convey the gained experience into products of the automotive company.
- **Sketching ability:** Three automotive designers expressed that the automotive designer should have the personal ability to sketch ideas and to be able to carry this ability enough to make them understandable to other people.
- **Being different:** Three automotive designers stated that the automotive designer is influenced by how different thinking the person is and how this comes across in the designs of the person.
- **Caring for environment:** Three automotive designers expressed that an automotive designer should be a person who cares for the environment and the subjects in it. This should have an effect, as stated by the participants, on their designs.
- **Being visionary:** Two automotive designers anticipated the automotive designer to have the ability to have a vision for the person's designs and for the company as a whole.
- **Knowing materials:** Two automotive designers stated that the automotive designer should carry the knowledge of the materials that the automotive designer works with and the materials that are used by other industries.
- **Analyzing ability:** Two automotive designers expressed that the automotive designer should have the ability to analyze situations, designs and products.
- **Questioning ability:** Two automotive designers pointed out that the automotive designer should always be able to raise questions and not settle for stereotypes or the status quo.
- **Expressing ability:** One automotive designer and one automotive industry expert stated that the automotive designer should have the ability to express one's self and one's designs. The ability to express is important in communicating with, and to present to, other people.
- **Interpretation ability:** One automotive designer expressed that the automotive designer should be able to interpret situation, ideas and products. The interpretation ability is important, as stated by the participants, for understanding what an automotive designer sees and what other people see.

- **Having ergonomics knowledge:** One automotive designer stated that the formation of the automotive designer should include ergonomics knowledge. This knowledge is important in designing products that have human-machine interface.
- **Loving the job:** One automotive designer stated that the automotive designer should love the profession of automotive design.
- **Using computers:** One automotive designer signified the importance of extensive knowledge of computers and be able to use them to carry across ideas and to be able to communicate with engineers.
- **Having cultural knowledge:** One automotive designer stated the importance of local cultural knowledge of the person as well as the cultural knowledge of the countries that one designs for.
- **Having art knowledge:** One automotive designer expressed the necessity of the automotive designer having a relatively good understanding of art and art history.
- **Having ideas:** One automotive designer stated that the automotive designer should be a source of ideas.
- **Being curious:** One automotive designer expressed the importance of the curiosity that an automotive designer carries. As stated by an automotive designer, it is seen as the force that keeps the automotive designer learning and progressing.
- **Can empathize:** One automotive designer mentioned the ability of the automotive designer to empathize with other automotive designers, with other participants of the design process, and with the customer.
- **Self-progressing:** One automotive designer stated the automotive designer's need to research and study new ideas and knowledge to enable the person to achieve self-progression.
- **Aesthetic ability:** One automotive industry expert stated the importance of aesthetic ability of the automotive designer to design automotive products.
- **Teamwork ability:** One automotive industry expert expressed the necessity of the ability and capability to work with a team of people, be it other automotive designers or other professions.
- **Having determination:** One automotive industry expert mentioned the importance of determination to succeed, to achieve, and to keep trying.
- **Having patience:** One automotive industry expert stated the requirement to have patience as an automotive designer. An automotive designer stated that this patience is especially important during the explanation of ideas to other people.
- **Having passion:** One automotive industry expert expressed that the formation of the automotive designer should include a passion that comes from childhood.
- **Being persuasive:** One automotive industry expert mentioned the importance of the ability to persuade other people into his/her ideas. An automotive design manager stated that the

design team will succeed when the design team has the ability to persuade the engineering team into their ideas.

### **Discussions on the Factors that Influence the Formation of the Automotive Designer**

There are 29 topics mentioned by the respondents that state the necessary knowledge, capabilities and talents that become the formation of the person to become an automotive designer. These factors, which are the topics of discussion, are the influences that form the formation of the automotive designer.

Observing the topics that received the most mentions signified a very descriptive in-house automotive designer for the automotive industry in Turkey. The most mentioned two topics, the automotive designer “having creativity” and “having talent”, are factors that are expected from the automotive designers, but their ability to apply creativity and show talent are debatable. The findings from the “Automotive Design as an In-house Process” heading implied a very narrow field where the automotive designer has the chance to apply creativity and show their talent in automotive design.

On the other hand, another important topic is related to design education. But, the reason for the lack of mentions on the topic of “Having an education” is related to, as mentioned by the two respondents, is the disbelief in the current education of industrial design in the universities in Turkey. Nine automotive designers and one automotive design manager stated that they do believe in self-taught people, without education, and some stated that they had to learn many concepts in design from the beginning. Two automotive designers even stated that the education they received was unnecessary to conduct the required work at the company.

The examination of this issue raises two critical issues. One of the issues is the effect of the role and responsibilities of the in-house automotive designer on their ideas about the education they have received. This issue requires further research, but the findings show that the in-house automotive designers, compared to their peers abroad, are in a different position in the automotive design process. The second issue is related to another factor, also stated by several respondents, that there is no education of automotive design in Turkey. Some automotive designers and automotive industry experts believe that automotive design should be taught as a separate profession, and that there are educational facilities that have this program in foreign countries. This belief can lead the respondents to have negative thoughts about the current educational system, especially the education of industrial design, in Turkey. A more detailed review on the topic of education is under the following heading.

The other two most mentioned topics, the “researching ability” (3 automotive designers and 1 automotive industry expert) of the automotive designer and the automotive designer “having experience” (3 automotive designers and 1 automotive industry expert), are mentioned by respondents throughout the findings. In three of the companies, the automotive designers are expected to conduct the benchmarking phase of the automotive design process. This phase requires the automotive designers to conduct research on competitor vehicles and product, sometimes even the OEM manufacturers for those products. This phase necessitates the automotive designer to have the knowledge and ability to conduct research. However, the ability is hindered by the companies and is limited to the benchmarking phase. The establishing of deadlines without the consent of the design group and the under-appreciation of the automotive design process leads the automotive designers to conduct the research just at the beginning of the process; the benchmarking phase. The automotive designer should be able to conduct research during the whole process if it is needed. This creates a problem in the design process and suggests that designs are moving away from innovation and originality without the required research.



A similar problem exists in the need for automotive designers with experience. Three automotive designers and one automotive industry expert mentioned the topic under this heading, but the automotive design managers have also stated in other parts of the findings that experience is important. There are companies that bring automotive designers from abroad for their experience. On the other hand, there are companies that send their in-house automotive designers, few months at a time, in small numbers or individually, to the owner firms' design departments for training. However, considering that a new automotive takes around 36-48 months to design, the experience gained at these locations stays minimal. The attention to automotive design process in the global brands seems to shock the automotive designers who go to these trainings abroad, sometimes even demoralizing them. But, for the in-house automotive designers to accumulate experience, they have to be able to experience the automotive design process as a whole, for a longer period of time. If the automotive designers do not experience the automotive design process as it is experienced in the major global brands, then the in-house automotive designers will not be able to gain the experience that is expected of them.

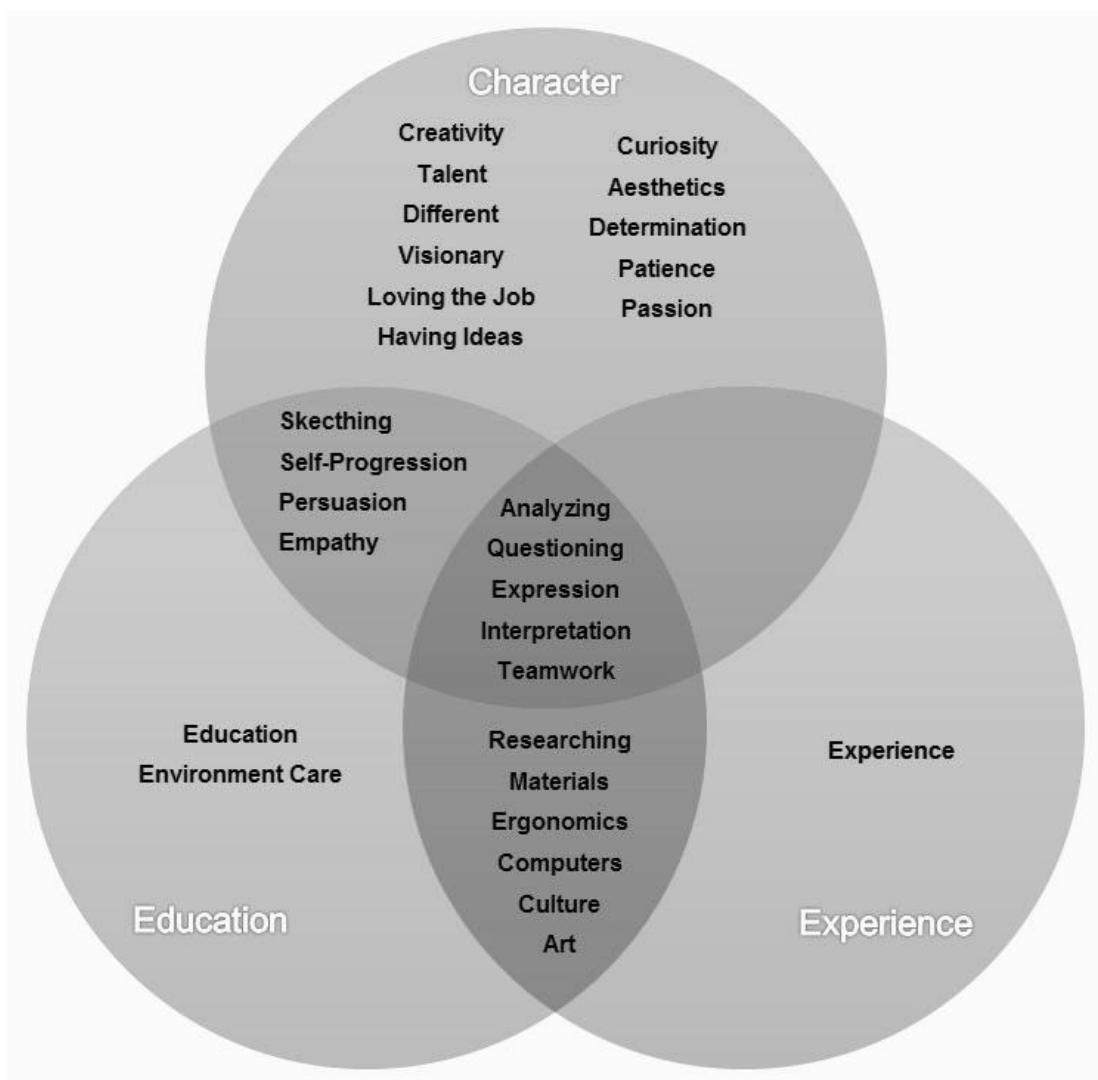


Figure 40 Factors that influence the formation of the automotive designer divided into groups

The graph (Figure 40) displays the mentioned topics that influence the formation of an automotive designer and the groups that they belong to. The diagram has three group titles; character, education and experience. The character title encircles the topics that are influenced by the person's character; the factors that come from within a person; that are not taught to them or that are not dependent on experience. The education title encircles the topics that a person gains with education; that are not a part of the character of the person and that do not depend on experience. The experience title encircles the topics that a person gains over time and/or work; that are not a part of the persons character and not that are not taught to them. There are also areas that overlap between these topics. The area between the education and character may be named as skills, and the area between education and experience may be named as knowledge.

When the topics that are mentioned are observed in a more general stance, it is possible to observe that the formation of the automotive designer, as described by the respondents, is influenced greatly by the character traits of a person, measured by the number of topics mentioned under them. This is followed by education and then the experience. The character of the person, with the overlapping area from education, constitutes the majority of the topics. One the other hand, there seems to be no overlap between just the character and experience groups. This diagram expresses the importance of character traits in becoming an automotive designer, and the number of mentions received for the topics in the character group supports this claim. However, most of these traits in the character group are not assessed by the automotive industry in Turkey or by the educational system in Turkey.

There are also topics that have received single mentions by the respondents. These topics are important, but what is interesting is that the same type of approach difference observed between the automotive designers and the automotive industry experts/automotive design managers in defining the automotive designer is also visible under this heading between the automotive designers and the automotive industry experts. The topics mentioned by the respondent groups show that the automotive designers are more focused on mentioning the topics about the professional aspects (relating to the profession of industrial design) about the formation while the automotive industry experts are more focused on topics that relate to the characteristic aspects (characteristic traits of a person) about the automotive designer's formation. These differences signify the different views of the automotive designers and automotive industry experts on the formation of the automotive designer.

#### 4.3.4. The Educational Background of an Automotive Designer

The following graph represents the data from the answers of the participants to the ideal educational background of automotive designers. These topics express the needed educational topics to become a successful automotive designer.

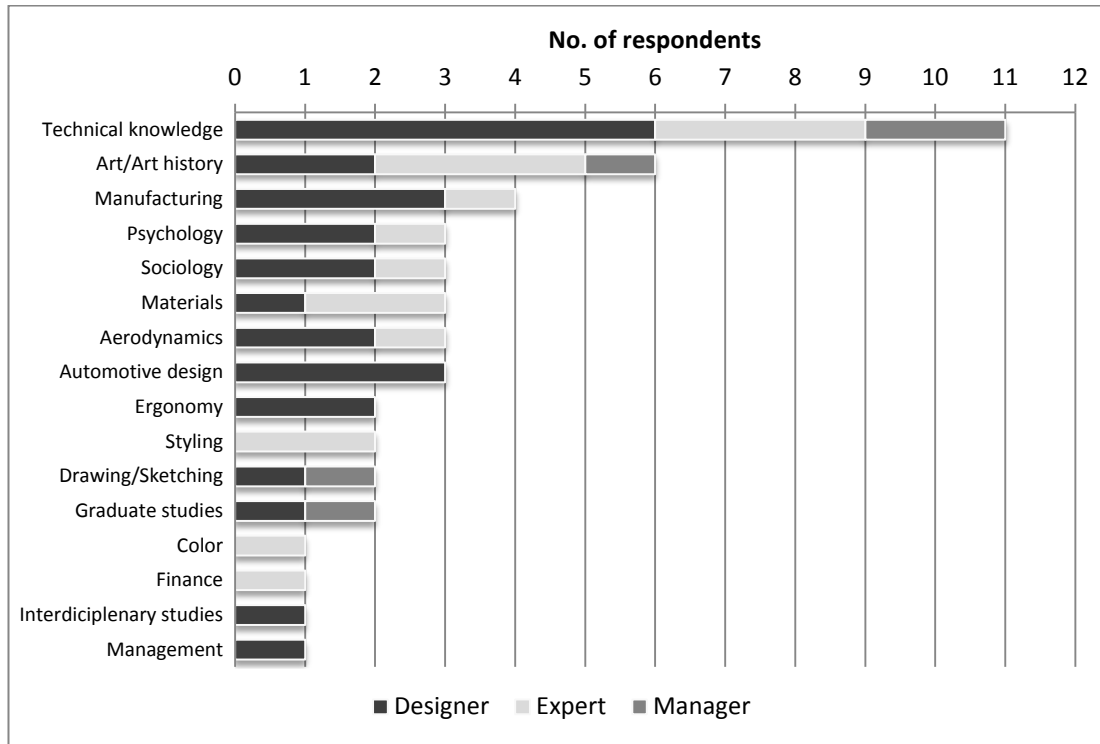


Figure 41 Educational background of an automotive designer.

The short explanations below are given in order of appearance in the graph (Figure 41), beginning from the topics that received the most mentions to the ones that received the least.

- Technical knowledge:** The most mentioned topic by the participants (6 automotive designers, 3 automotive industry experts, and 2 automotive design managers) is the need for the automotive designers' education to carry technical knowledge. An automotive designer stated that the automotive designer should carry basic engineering notions as well as a little bit of static forces. Another automotive designer stated that the automotive designer should be able to have the knowledge to stand behind the lines it draws. An automotive design manager stated that the current education system falls short in giving the automotive designers the technical knowledge they need in the industry.
- Art/Art history:** The second most mentioned topic (2 automotive designers, 3 automotive industry experts, and 1 automotive design manager) for the education of automotive designers is the need for study of art and art history.
- Manufacturing:** The third most mentioned topic (3 automotive designers, 1 automotive industry expert) by the participants was the need of the automotive designer to be educated about manufacturing.

- **Psychology:** Two automotive designers and one automotive industry expert stated the importance of psychology to understand the human mindset aspect of design.
- **Sociology:** Two automotive designers and one automotive industry expert stated the significance of sociology to understand the way that people behave and to design products relating to these behaviors.
- **Materials:** One automotive designer and two automotive industry experts mentioned the importance of the education in the knowledge of materials.
- **Aerodynamics:** Two automotive designers and one automotive industry expert stated the necessity of aerodynamics knowledge for the automotive designer. One automotive industry expert stated that the amount of knowledge does not have to be immense, just enough to able the automotive designer to communicate efficiently with the engineers.
- **Automotive design:** Three automotive designers expressed the importance of a formal education in the field of automotive design. One automotive designer stated that getting an education abroad in automotive design enables the person to get the correct information and learn more about automotive design. The automotive designer added that undergraduate, graduate and certification courses are available abroad and that these are the correct way for the education of automotive design. Another automotive designer stated that beginning as an industrial designer may be enough, but to be a true automotive designer, one has to have studied automotive designs. Another automotive designer stated that education in automotive design is a must for this profession.
- **Ergonomics:** Two automotive designers mentioned the importance of ergonomics, to achieve better designs in man-machine interface.
- **Styling:** Two automotive industry experts stated the importance of the knowledge of styling. An automotive industry expert stated that the automotive designers who are interested in the surface of automotive design should receive education in styling.
- **Drawing/Sketching:** One automotive designer and one automotive design manager mentioned the significance of education in drawing and/or sketching to convey ones' ideas in a more successful way.
- **Graduate studies:** One automotive designer and one automotive design manager stated that the automotive designer should continue their education in automotive design or other fields relating to automotive design. An automotive designer stated that it would be a positive aspect if the automotive designer studied mechanical design in graduate studies or vice versa. Another automotive designer stated that the automotive designer should continue his/her studies in the field of design.
- **Color:** One automotive industry expert expressed the importance of the knowledge of color and its uses, especially in design.
- **Finance:** One automotive industry expert stated the necessity of finance education or the knowledge of finance for the automotive designer.
- **Interdisciplinary studies:** One automotive designer expressed the importance of including knowledge from other disciplines and the integration of this knowledge into the curriculum

of design education. An automotive designer stated that the automotive designer should be equipped from different disciplines.

- **Management:** One automotive designer mentioned the education of an automotive designer in basic managerial skills. This becomes more important, an automotive designer stated, in the event of managing a team of people. Another automotive designer stated that it is important for the automotive designer to know how a company functions, how different departments function in terms of management and how these influence the design team.

There were other important comments that were not given under the above topics because of their generalized approaches. These are given below.

An automotive designer commented that 'The evolution [of industrial design] under engineering, rather than architecture, although they are different disciplines, makes more sense to me as the language spoken seems to be more alike' (40). Another automotive designer stated '[...] unfortunately, in Turkey, it is something that you learn after you begin working in the industry' (41).

An automotive industry expert stated '[...] Four years of education is not enough. It is impossible, and that is why designers are not raised in Turkey' (42). The automotive industry expert added that the educational system in Turkey is still too dependent on memorization and lacking creative notions. Another automotive industry expert stated '[...] I see it from the student I come across; there is too much emphasis on trying to do what engineers do' (43). One other automotive industry expert stated that the educational facilities in Turkey are raising engineers in schools and not giving enough art education.

An automotive design manager stated 'There is still a lack of university-industry relations in industrial design; I am speaking about automotive of course' (44).

### **Discussions on the Educational Background of the Automotive Designer**

The responses received for the education of the automotive designer express two groups of expected education for the automotive designer. The first group consists of subjects that an automotive designer should concentrate on during education, but that are already in the curriculum of industrial design education in Turkey. The second group of topics are outside the curriculum of industrial design education in Turkey; topics that are related to subjects from other professions. However, some of the topics from the second group are taught in the industrial design programs abroad.

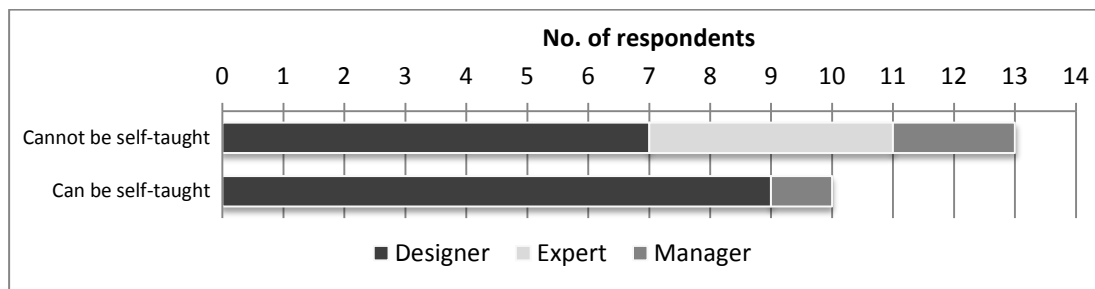
An interesting outcome from the findings is the importance of technical knowledge, manufacturing, and aerodynamics for the automotive industry in Turkey. These topics are usually accepted as the subjects of other professions; such as mechanical engineering. The responses received on these topics indicate an expectation from the automotive designers to become a more technical group of people. This also shows the expectations of the automotive industry in Turkey in terms of automotive design.

On the other hand, topics such as art, art history, psychology, and sociology received important amount of mentions from the respondents. According to the published curriculums of some of the top industrial design schools in Turkey (METU, ITU, Mimar Sinan Uni.), these topics are not always visible in these curriculums, but are very important for designing products in any area of design as these topics are directly related with the concept of person.

Most of the topics that were mentioned by the respondents are taught in the design education in Turkey. However, as the participants stated, the division of attention that the topics receive is the subject of the argument. The researcher believes that the attention paid to some of the topics, such as sociology, psychology, art history, and ergonomics needs to increase, the automotive design courses need to be integrated, and a more artistic-oriented education needs to be implemented for a successful automotive design education.

#### 4.3.5. Assessment of Self-taught Automotive Designer

The graph (Figure 42) represents the respondents view on the possibility of an automotive designer being self-taught rather than having a formal education in automotive design or industrial design. This issue was raised during the interviews about the educational background of the automotive designer.



**Figure 42 Assessment of self-taught automotive designer**

There are two opinions on this matter of being a self-taught automotive designer in the automotive industry in Turkey. The participants who believe that it is not possible to be self-taught gave the following comments.

One group of participants, who form the majority (7 automotive designers, 4 automotive industry experts, and 2 automotive design managers), believe that automotive design cannot be a self-taught profession and that it has to have a systematic educational background. One automotive designer stated that it is not even enough for an automotive designer to be educated in design. Another automotive designer stated that the automotive designer must have a university degree either from design or engineering. One other automotive designer stated that being self-taught is very difficult, and stated, even being an industrial designer is becoming requiring, and the person needs to be an automotive designer.

An automotive industry expert stated that it is not possible to be self-taught in this business. The automotive industry expert added that it is important to be able to sketch, but it is much more important to be able to solve a problem with sketching analytically.

One the other hand, the participants that believe self-taught automotive designer is possible, gave the following comments:

One automotive designer stated that it is possible to be self-taught, because what they are taught in school are the teachings of the experiences of self-taught people of their time. Another automotive designer stated that the important aspect is the ability to imagine, to feel the excitement and to be able to organize thoughts, the automotive designer added that as long as you can do these, it is not important if you are a tea server. One other automotive designer stated that it is possible to be a self-taught automotive designer because the education that is given at the university is of zero value.

Another automotive designer stated that an automotive designer could be from different backgrounds and even be a self-taught automotive designer; the thing that matters is the work that a person does and what the person has to show for it. One other automotive designer stated that self-taught automotive designer is possible because the amount of knowledge the person gained in the last four years as an automotive designer is more than the knowledge gained at school.

### Discussions on the Assessment of Self-taught Automotive Designer

The responses received on the possibility of an automotive designer being self-taught, instead of educated in the field of design, express a relatively close separation between positive and negative views.

These statements are observable as signs of an unsatisfying educational background of the respondents. However, the lack of automotive design education in Turkey and the arguable expectations of the industry in Turkey may cause such thoughts.

One interesting note, two automotive industry experts stated that they saw industrial designers working in the field of automotive design as self-taught people as well. The respondents stated that the education of automotive design differs from the education of industrial design in Turkey in important aspects and cannot be accepted as the equivalent of automotive design education. However, this view is not supported by the literature (Section 2.8.2) and there are many examples of automotive designers with industrial design backgrounds. On the other hand, the industrial design education abroad and industrial design education in Turkey is different in important aspects, but this is beyond the scope of this thesis.

#### 4.3.6. The Approach of the Companies to the In-house Automotive Designer in Turkey

The graph (Figure 43) represents the respondents view on the approaches of the companies towards the in-house automotive designers.

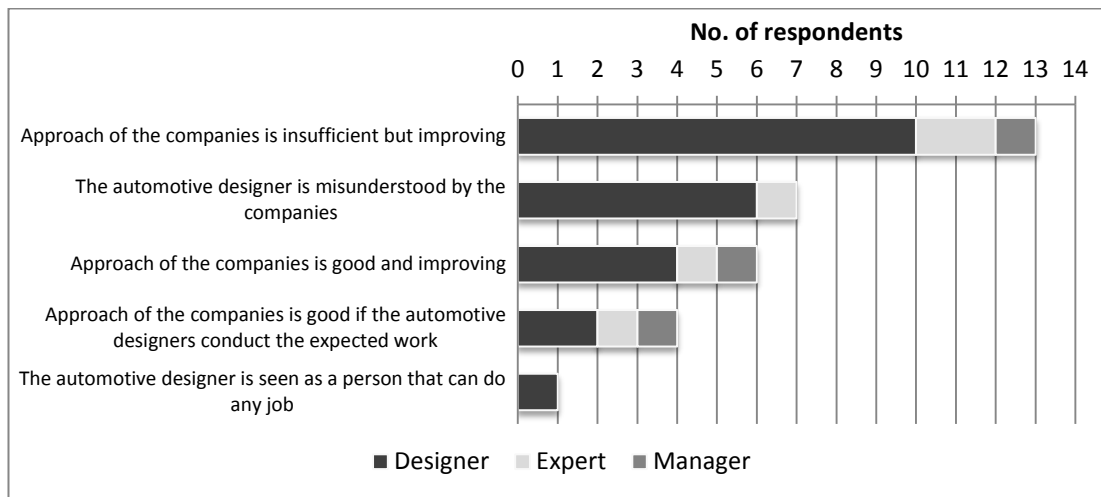


Figure 43 Approach of the companies to the in-house automotive designer in Turkey.

The graph (Figure 43) shows the approaches of companies to the in-house automotive designers in Turkey. These topics and the comments made about them are given below.

- **Approach of the companies is insufficient but improving:** The most mentioned topic by the participants (10 automotive designers, 2 automotive industry experts, and 1 automotive design manager) is the insufficient, but improving, status of automotive designers in the companies. An automotive designer stated 'It used to be viewed as a person that could draw, but could not get it produced, that does nice things, neat things, and that is if it is a good designer, but needs great amount of engineering support, uncut for the job [...] Now they have realized and started to slowly understand that the automotive designer is not a person who only does forms, but a person who can innovate, bring new materials and production methods, a person who can discover' (45). Another automotive designer added that the rising profession in Turkey is viewed as engineering, by the company, and that design needs to prove itself more. One other automotive designer added that the company views them as very talented, young and everything they do needs to be re-evaluated by someone else. One automotive industry expert commented that the companies are not aware of the importance of the automotive designer as they have the luxury of manufacturing designs from abroad.
- **The automotive designer is misunderstood by the companies:** The second most mentioned (6 automotive designers, 1 automotive industry expert) topic states that the automotive designers are misunderstood by the company. One automotive designer stated '[...] In this systematic, I believe they still have questions in their minds about how this place functions' (46). An automotive industry expert states 'They are viewed as creatures that exist as parasites in some way' (47).
- **Approach of the companies is good and improving:** The third topic that gets the most mentions (4 automotive designers, 1 automotive industry expert, and 1 automotive design manager) states that the approach of the companies towards the automotive designers is good and improving for the better. One automotive designer states that the company knows and understands what the automotive designer does. One automotive industry expert states that 'They are extremely respectful, extremely protective; I can say that proudly' (48). One automotive design manager states that the automotive designer is gaining importance and that it is a division that the company is investing more and more.
- **Approach of the companies is good if the automotive designers conduct the expected work:** Two automotive designers, one automotive industry expert and one automotive design manager stated that the companies evaluate the automotive designer with the amount of work the automotive designers do rather than their position in the company. One automotive designer states '[...] if you work and show effort, if they see this effort, they give the required support' (49). One automotive design manager states 'The placement of the industrial designer depending on its talent into a group depends a little bit on the performance of the person' (50).
- **The automotive designer is seen as a person that can do any job:** One automotive designer commented on the companies' view and stated that '[...] in truth, they see it as a worker that can do anything' (51).

### **Discussions of the Approach of the Companies to the In-house Automotive Designer in Turkey**

The approach of the companies towards the in-house automotive designers in the automotive industry in Turkey influences the automotive designers' positions and careers in the company. It also signifies the thoughts of the companies about their automotive designer employees. These thoughts are generally relayed through the managerial divisions of the company to the automotive design managers.



The majority of the respondents state that the approach of the companies towards their automotive designers is insufficient, but it is improving, albeit slowly. This majority also includes the majority of the automotive designer respondents, which shows the optimistic stance of the automotive designers in the companies. The insufficiency occurs mainly from the mistaken or misunderstood position of the automotive designer in the automotive design process. As stated by the respondents, the automotive designers are expected to conduct tasks and carry responsibilities that are only partial to their profession. However, the necessary steps for the expected improvement were not really visible in the companies. The optimistic view of the in-house automotive designers seems to rely mostly on the news items from the media; statements made by governmental officials about the future of the automotive industry and the need to create brands. The statements may have influenced the in-house automotive designers more than the managerial divisions, but there are no physical plans or procedures implemented to turn these statements into facts.

There were six respondents who stated that the current situation is good and improvements are taking place in the automotive industry in Turkey. The respondents, especially the automotive designers, stated that the companies understood the automotive designers, their importance, and their roles in the automotive design process. However, when the literature is examined (Sections 2.5, 2.7), the position of the automotive designer in the company, the responsibilities of the automotive designer, and the role given to the automotive designers seems to contradict this statement. The global brands are positioning their design teams as the “image makers” of the companies and are viewing them as the lead role players in the automotive design process. This was not observed in the automotive industry in Turkey according to the findings and the observations of the companies.

An important number of respondents, seven in total, stated that the automotive designers are misunderstood in the automotive industry in Turkey. This topic also influences the topic above, but it is a deeper problem in itself. The difference is that some automotive designers still believe that any improvement that can take shape will be superficial until the companies understand the definition of the automotive designer. The improvements will carry meaning only after the companies understand the role of the automotive designer and reconsider their approaches towards automotive designers. The automotive companies may need to reconsider their expectations from the in-house automotive designers and weigh their decisions about them to achieve an approach that is competitive with the global brands.

#### **4.3.7. The Positioning of the In-house Automotive Designer in the Companies in Turkey**

This heading examines how the companies position the automotive designers in the company. This includes the departmental positioning and the hierarchy of the automotive designer in the company.

The in-house automotive designers in this thesis are participating from four different companies and in these four companies all the design groups are contained under the R&D department. None of the design groups have their own departments and some are sharing their names with the engineering departments. The names of the groups are as follows.

- Industrial Design and Trim Group
- Design Studio
- Style and Perceived Quality
- Trim Group (Engineering Department)

The positioning issue was examined with comments from the participants and with the analysis of the topics that were raised, to give a better explanation of the situation in the industry.

- **Situation of the automotive designers are variable:** The situation put forward by some of the participants (3 automotive designers and 1 automotive industry expert) stated that the positioning of the automotive designer varies, although not clearly defined is why it varies. One automotive designer states that sometimes they are the people that are in direct dialogue with the general manager of the company and that sometimes they are left out of the loop.
- **Automotive designers are similar to or under the engineers:** The situation presented by some participants (8 automotive designers, 1 automotive industry expert and 1 automotive design manager) stated that the automotive engineer is always considered similar to the engineer or one step under. One automotive designer stated that in general engineers are the leading group. Another automotive designer stated that the engineering department is at the forefront and the automotive designer is dependent on too many other factors to be free to design. One other automotive designer stated that the automotive designer is considered too similar to engineers and do not have the opportunity to separate themselves. Another automotive designer commented that the automotive designer is considered in the same group with the engineers in the company hierarchy. One other automotive designer commented that the automotive designers are considered like the engineers, but that everything changes during performance evaluation when the automotive designer becomes second grade. An automotive industry expert stated 'In the firms that I know, automotive designers are usually under the engineering or R&D departments, at most, they become a chief office' (52). An automotive design manager stated that '[...] Naturally, they are a part of engineering and R&D, they are inside engineering' (53). Another automotive design manager stated that the automotive designers are still not seeing the attention that they deserve.
- **Situation of the automotive designers are improving:** A participant (1 automotive designer) suggested that the position of the automotive designer was improving. An automotive designer stated that '[...] we began with the lowest ranking engineer, and as people understood what we did, we progresses and achieved a status' (54).
- **Automotive designers are unimportant:** Some of the participants (1 automotive designer, 2 automotive industry experts and 1 automotive design manager) mentioned that the automotive designers are unimportant and are employed because of the peer pressure in the industry. An automotive industry expert stated that the automotive designers are sometimes treated like they do not even exist because the company gives them no ability to design anything. Another automotive industry expert stated that the automotive designer team was not valuable as much as a single engineer in the company.

### **Discussions on the Positioning of In-house Automotive Designers in the Companies in Turkey**

The position of the in-house automotive designer in Turkey is greatly influenced by the approach of the companies towards automotive design. The respondents stated different aspects of this positioning, some relating the physical conditions and some that are related to their professional position in the company.

The respondents from the four companies stated that none of the companies had a department for design inside the company. In one of the companies, the design team has their own office, but the team is still connected to the engineering department. In three of the companies, the design teams are physically positioned with the engineers and share the same type of office structure with them.

On the other hand, three of the companies have owner brands abroad, which have large design facilities, housing hundreds of automotive designers. One of the companies has design offices in multiple parts of the world, each employing more than a hundred automotive designers. This is interesting because it signifies the effects of the aforementioned licensing deals as well as the importance of being a global brand. These effects also signify the aims and goals of the owner brands in terms of their approach to automotive design in Turkey, which consequently influences the positions of the in-house automotive designers in Turkey.

The observed professional positions and the findings show that there are four categories that the respondents state for the in-house automotive designers in Turkey.

- Situation of the automotive designers are variable
- Automotive designers are similar to or under the engineers
- Situation of the automotive designers are improving
- Automotive designers are unimportant

Three of these categories; the first, second and fourth categories, can be considered as the result of the approach towards the automotive designers. On the other hand, the third category is optimistic, which was also observed in the previous heading.

The statements made by the respondents from the three categories indicate that the professional and hierarchy positioning of the in-house automotive designers are not appraised by the automotive designers or the automotive industry experts, and even one automotive design manager. These statements signify the existence of a problem, or problems, in the positioning of the in-house automotive designers. This problem is also in correlation with the approach of the companies towards the in-house automotive designers.

The lack of design departments in the companies in Turkey and the problem of correctly positioning the in-house automotive designers in the company are two issues that prevent the automotive designers to function correctly during the automotive design process. If the automotive designers have variable positions, are treated as or below engineers, or are seen as an unimportant profession group, the automotive designers' function in the company becomes questionable and the automotive designer process becomes stagnant.

#### 4.3.8. The Career Path of the In-house Automotive Designer in Turkey

The following graph shows the respondents view on the career development opportunity of an automotive designer in the companies in Turkey.

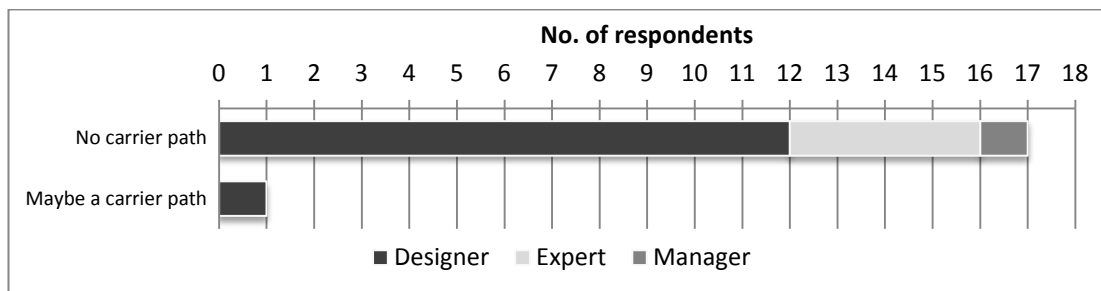


Figure 44 Career path of the in-house automotive designer in Turkey

- **No career path:** The majority of the respondents (12 automotive designers, 4 automotive industry experts, and 1 automotive design manager) stated that there is no career development offered or proposed by the companies for automotive designers. One automotive designer stated 'There is no such thing as a career progress, but rather a career change' (55). Another automotive designer stated 'The location [of the company] discourages people coming to this town' (56). An automotive industry expert stated that the companies are thinking about what to do with their employed automotive designer let alone thinking about a career path for them. The automotive industry expert added that this situation is caused by the strong ties to the company that owns the license.
- **Maybe a career path:** An automotive designer stated 'An industrial designer in this firm, for example, can become an R&D manager; it can even go higher' (57).

#### **Discussions on the Career Path of the In-house Automotive Designer in Turkey**

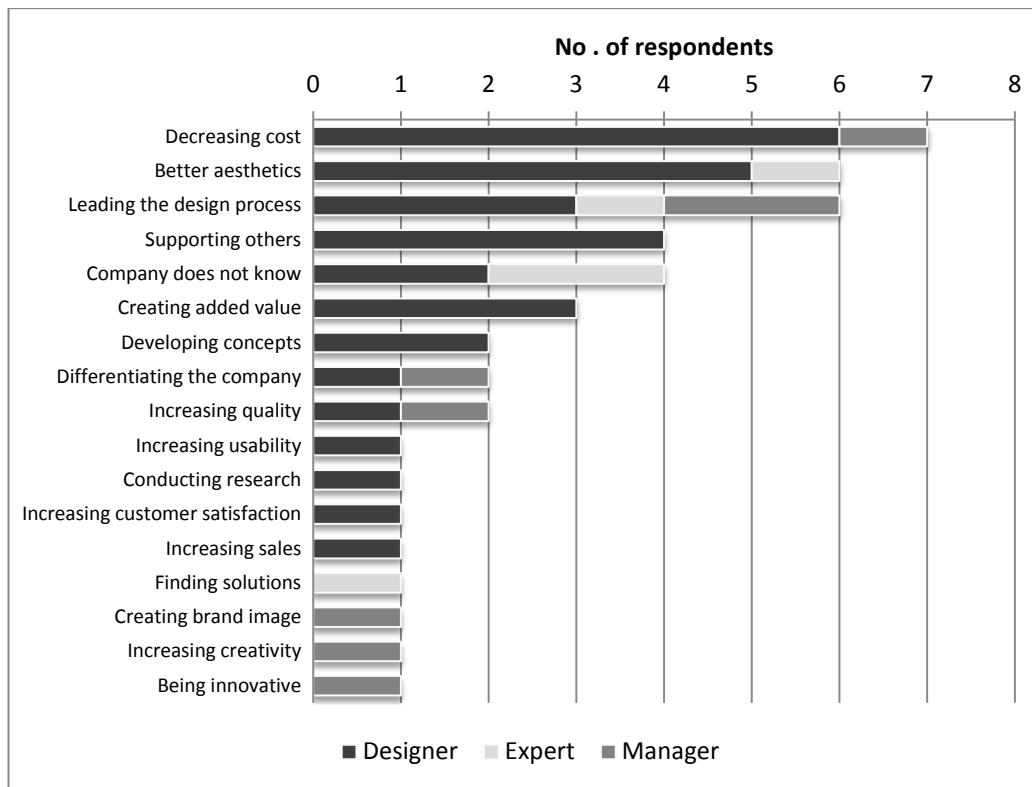
According to the respondents' views, none of the four companies have planned career paths for the in-house automotive designers working in them. All the respondents, except one, have stated that a career path does not exist in the company. Some of the respondents have stated that it is not even possible for an in-house automotive designer to become an automotive design manager. This is interesting because all the current automotive design managers are mechanical engineers and even some of them have stated that an automotive design manager with an automotive design background would be a positive step towards achieving a better automotive design process.

The career of an automotive designer depends greatly on the thought of the company's managerial division; the approach of the company. The results from the findings for the career path signify that the companies have no plans for the future of their automotive designers, which contradicts the optimistic views of the respondents in the approach of the company.

One interesting note from the observations made during the company visits is the choice of department change, rather than a career path, that some automotive designers are electing. In one of the firms, the lack of a designated career path has forced some of the automotive designers in the company to change departments and relocate to the marketing department. This move, as observed in the automotive design process of companies, not only enabled these people to have a career path, but has also enabled them to have input in the preparation of the design brief as marketing personnel; a novelty that the in-house automotive designers do not have.

#### **4.3.9. The Expectations of Companies from the In-house Automotive Designers in Turkey**

The following graph represents the topics mentioned by the participants of expectations of the companies from automotive designers to achieve or execute.



**Figure 45 Expectations of companies from the in-house automotive designers in Turkey**

The short explanations below are given in order of appearance in the graph (Figure 45), beginning from the topics that received the most mentions to the ones that received the least.

- **Decreasing cost:** The majority of the mentions received (6 automotive designers, 1 automotive design manager) stated that the companies expect the automotive designers to decrease the cost of manufacturing their products through design. One automotive designer stated ‘It should be cheap, but still look neat. I mean, the main aim is for the customer to feel like it is expensive’ (58).
- **Better aesthetics:** Sharing the second most mentioned (5 automotive designers, 1 automotive industry expert) topic is the expectation of the company to achieve better aesthetics through the use of automotive designers. One automotive designer stated ‘[...] there is something wrong; they want the car that they would like’ (59).
- **Leading the design process:** Sharing the second most mentioned (3 automotive designers, 1 automotive industry expert, and 2 automotive design managers) topic is the expectation of the company from the automotive designer to lead the automotive design process. One automotive design manager stated that the automotive designer is expected to provide strategies and experience in maximum fashion to lead the process of design. Another automotive design manager stated that the automotive designers are expected to have self-confidence and to make them known through the leadership of the design process.
- **Supporting others:** Sharing the third place for the most mentioned (4 automotive designers) topic is the expectation of the company of automotive designers to support the efforts of other departments. One automotive designer stated ‘Naturally, they want us to

design a vehicle that has low cost; as much as possible, has high profits, is easy to maintain, has high technical features, and of course, includes the right materials' (60).

- **Company does not know:** Sharing the third place for the most mentioned (2 automotive designers, 2 automotive industry experts) topic is the lack of expectation from the company of automotive designers. One automotive designer stated that 'Because our company does not understand what an automotive designer exactly is, it does not really have an expectation right now; whatever we can give them' (61). An automotive industry expert stated that the company does not expect anything because there is no real design conducted in the company.
- **Creating added value:** Three automotive designers mentioned the importance of creating added value in products through automotive design.
- **Developing concepts:** Two automotive designers stated the importance of creating and developing concepts for the company through automotive design.
- **Differentiating the company:** One automotive designer and one automotive design manager expressed the expectation of differentiating the company from its competitors through the use of automotive design.
- **Increasing quality:** One automotive designer and one automotive design manager stated the significance of increasing the quality of the company's products through the use of automotive design.
- **Increasing usability:** One automotive designer mentioned the importance of increasing the usability of its products through the use of automotive design.
- **Conducting research:** One automotive designer stated the expectation from the automotive designer to conduct the necessary research for creating better products.
- **Increasing customer satisfaction:** One automotive designer stated the importance of increasing the satisfaction of the customer by designing better products through the use of automotive design.
- **Increasing sales:** One automotive designer expressed the expectation of the company from automotive designers to increase the sales numbers of its products.
- **Finding solutions:** One automotive industry expert mentioned the necessity of finding better solutions for design problems by automotive designers.
- **Creating brand image:** One automotive design manager stated the importance of creating a brand image for the company through its products. The automotive design manager stated that a good design makes a price difference. The automotive design manager added that Turkey is not at that point in making that difference, but automotive designer helps in increasing the brand image, the market respect, and customer interest in products.
- **Increasing creativity:** One automotive design manager expressed the expectation of increased creative process and the implementation of creative ideas to the products of the company.

- **Being innovative:** One automotive design manager stated the need for '[...] them (designers) to be completely innovative, to bring me projects, [...] for them to constantly be looking for new avenues' (62).

### **Discussions on the Expectation of Companies from the In-house Automotive Designers in Turkey**

The expectations of the companies define the prominent views of the companies about the automotive designers while stating the roles of the automotive designers in the companies. The topics mentioned by the respondents outline the approach of the company as well as the positioning of the automotive designers and their career paths.

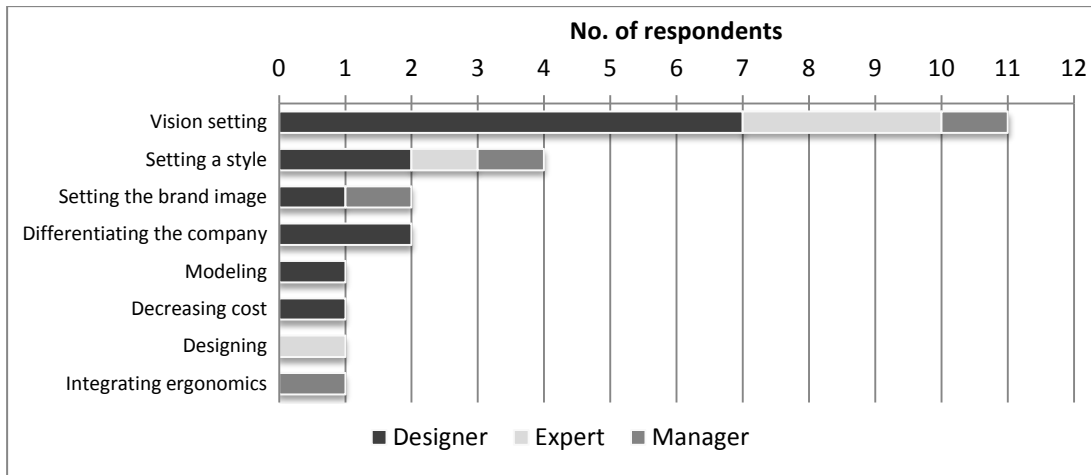
Examining the highest mentioned three topics by the respondents, it can be said that the companies are expecting a person that can design aesthetic products, leading the design process, decreasing the costs of products while giving support to other departments in need. On the other hand, there are respondents that have stated that the companies do not know what to expect of the automotive designers.

However, the highest mentioned topic, the expectation of decreasing product costs, has no place in the described automotive design processes, for the four companies, by the respondents. It is not clear when the automotive designers are expected to complete the mission of decreasing costs. The same is true for "leading the design process"; the automotive designers are not given the responsibility of such process, let alone lead it. On the other hand, there is an expectation of supporting other departments, as it was mentioned by the respondents. The in-house automotive designers are expected to act as support for the design departments of owner firms, for the engineers, or the marketing departments.

There are various other topics mentioned by the respondents, some of them in correlation with the expectations of global brands. Topics such as creating added value, differentiating the company, creating brand image, and being innovative are shared by the global brands as missions of the in-house automotive designers (Sections 2.5, 2.7). However, the last two topics mentioned above, were only stated by the automotive design managers. The in-house automotive designers and the automotive industry experts do not seem to see the in-house automotive designers in these roles in the automotive industry in Turkey. It is possible to debate that the automotive designers are not accepting these roles or are capable of conducting them, but the findings represent that such expectations that can test the interest or capabilities of the automotive designers does not exist. On the contrary, the phases of the automotive design process that the in-house automotive designers participate in are rushed, allowing a greater amount of time for diverse engineering processes. This signifies that the expectation from the automotive designer is, as stated by an automotive designer, "to make it pretty" or "to put a pretty cover over what the engineers did". There seems to be very little to no time for creating added value, differentiating the company, increasing usability, conducting research, increasing customer satisfaction, finding solutions, creating a brand image, increasing creativity or being innovative.

#### **4.3.10. The Responsibilities of the In-house Automotive Designer in the Automotive Design Process in Turkey**

The following graph represents the topics mentioned by the participants in defining the responsibilities that the in-house automotive designers have in the automotive industry in the automotive design process in Turkey.



**Figure 46 Responsibilities of the in-house automotive designer in the automotive design process in Turkey**

The short explanations below are given in order of appearance in the graph (Figure 46), beginning from the topics that received the most mentions to the ones that received the least.

- Vision setting:** The majority of the participants mentioned (7 automotive designers, 3 automotive industry experts, and 1 automotive design manager) that the responsibility of the automotive designer is to set a vision for the company and the products.
- Setting a style:** The second most mentioned (2 automotive designers, 1 automotive industry expert, and 1 automotive design manager) topic is the responsibility of the automotive designer to set a style for the products of the company. One of the automotive industry experts stated '[...] the most important role for the designer is to give it that character [...] it has to be really good in following ratios, proportions, balance and trends' (63).
- Setting the brand image:** Sharing the third place for the most mentioned (1 automotive designer, 1 automotive design manager) topic is the responsibility of the automotive designer to set the brand image for the company.
- Differentiating the company:** Sharing the third place for the most mentioned (2 automotive designers) topic is the responsibility of the automotive designer to differentiate the company with creating different products from its competitors.
- Modeling:** One automotive designer stated the responsibility of the automotive designer for physically or digitally modeling of the products of the company.
- Decreasing cost:** One automotive designer expressed that the automotive designer is responsible for decreasing the manufacturing cost of the products.
- Designing:** One automotive industry expert mentioned the importance of designing the products of the company. The automotive industry expert expressed that the designer has to think '[...] I will present the consumer a feeling, an experience. I have to design that [...]' (64).
- Integrating ergonomics:** One automotive design manager stated the responsibility of the automotive designer for integrating ergonomics into the products of the company.



There were other important comments that were not given under the above topics because of their generalized approaches. These are given below.

One automotive designer stated that the responsibility of the automotive designer does not yet have a correlation with the role of the automotive designer in the company. Another automotive designer stated that the automotive designer should be designing products that have a fan base, but that the company seem to be doing the opposite.

One automotive industry expert stated that the automotive designer should be the person who is in charge of the automotive design process and be responsible for communicating with the CEO. Another automotive industry expert stated that the automotive designer is a very valuable asset, but that the companies have yet to realize this and give the appropriate responsibilities.

#### **Discussions on the Responsibilities of the In-house Automotive Designer in the Automotive Design Process in Turkey**

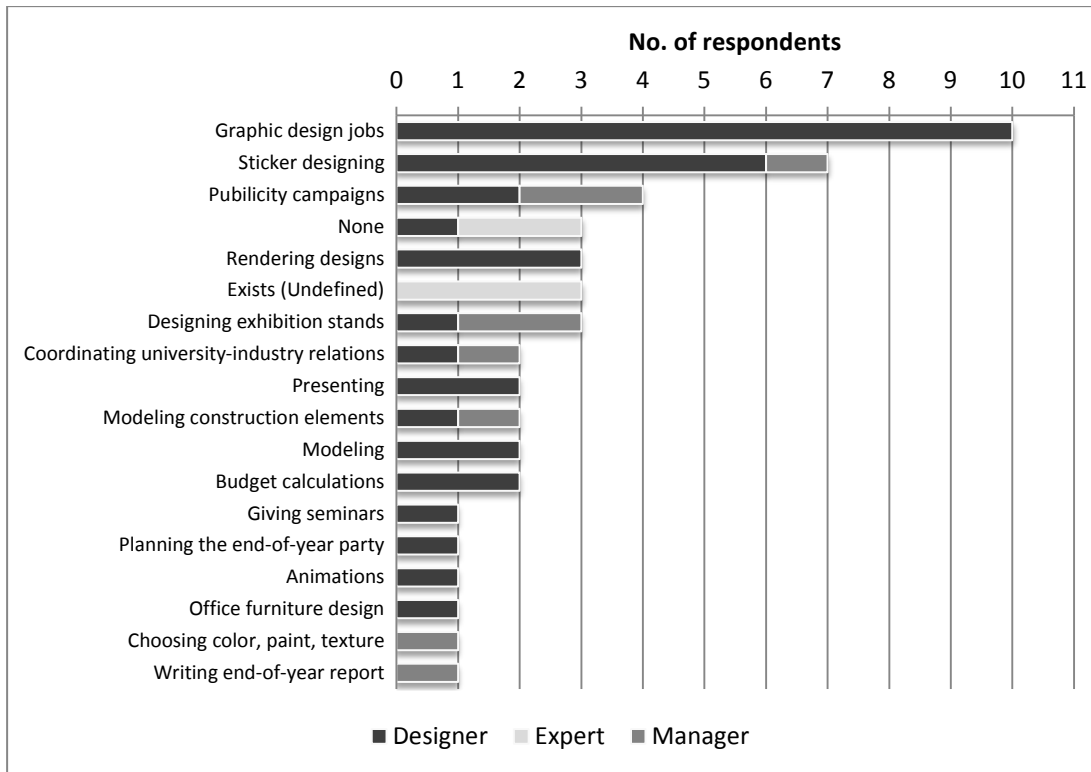
The in-house automotive designers are given responsibilities by the companies' managerial divisions, or the automotive design managers, and are expected to fulfill these responsibilities.

The majority of the respondents believe that the companies expect the in-house automotive designers to be responsible of setting the companies' visions. However, as stated by the respondents, the automotive designers are not given the necessary time, the required positions, and the authority to achieve this role.

An interesting observation from the findings shows that only one automotive industry expert stated "designing" as the responsibility of the in-house automotive designer. As mentioned in the previous headings, there are many expectations from the automotive designers working in the companies and are positioned to conduct different tasks, such as support. This signifies that the responsibilities of the in-house automotive designers differ from the global brands.

#### **4.3.11. Other Responsibilities of the In-house Automotive Designer in Turkey**

The following graph represents the topics mentioned by the participants in defining the other responsibilities that the in-house automotive designers have, outside the automotive design process, in the automotive industry in Turkey.



**Figure 47 Other responsibilities of the in-house automotive designer in Turkey**

The short explanations below are given in order of appearance in the graph (Figure 47), beginning from the topics that received the most mentions to the ones that received the least.

- **Graphic design jobs:** The majority of the respondents (10 automotive designers) mentioned that they are given graphic design jobs, some which that are in no direct relation to their professions, in the company.
- **Sticker designing:** The second most received response (6 automotive designers, 1 automotive design manager) from the participants is the mention of sticker design. The automotive designers are expected to design stickers for various situations, including branding requests from customers on vehicles.
- **Publicity campaigns:** The third most received mention (2 automotive designers, 2 automotive design managers) is the tasks given by companies to automotive designers to work on publicity campaigns that the companies hold.
- **None:** One automotive designer and two automotive industry experts stated that the companies do not expect anything from them that is not defined as a capability of their profession
- **Rendering designs:** Three automotive designers mentioned the expectation of the in-house automotive designers of the company to provide different rendering views of their products in different situations for use in advertising products, such as presentations, brochures and commercials.

- **Designing exhibition stands:** One automotive designer and two automotive design managers expressed the expectation from the automotive designers on providing stand designs for the exhibitions that the companies attend.
- **Coordinating university-industry relations:** One automotive designer and one automotive design manager mentioned the task of establishing and maintaining university-industry relations of automotive designers.
- **Presenting:** Two automotive designers stated the expectation from them to present the products of the company to third-parties.
- **Modeling construction elements:** One automotive designer and one automotive design manager mentioned the importance of modeling and constructing engineering elements to help the engineering department at certain times.
- **Modeling:** Two automotive designers stated the task of physically and/or digitally modeling the products that are designed by the design team.
- **Budget calculations:** Two automotive designers expressed the task of helping with the budget calculations of the R&D department.
- **Giving seminars:** One automotive designer stated the task of giving seminars, in different contexts, about the products or other functions of the company.
- **Planning the end-of-year party:** One automotive designer mentioned the expectation of handling the tasks of planning the end-of-year party of the company.
- **Animations:** One automotive designer expressed the necessity of creating animations for the products of the company to be used in presentations or commercials.
- **Office furniture design:** One automotive designer mentioned the expectation from them to design the furniture that the company uses at its different locations.
- **Choosing color, paint, and texture:** One automotive design manager stated the importance of handling the task of choosing the color, the type of paint and the various textures for plastics/textiles that the company uses in its products.
- **Writing end-of-year report:** One automotive design manager expressed the expectation from the automotive designers to help with the writing of the end-of-year report of the R&D department.

There were other important comments that were not given under the above topics because of their generalized approaches. These are given below.

One automotive designer stated that everything that nobody understands passes through here. An automotive industry expert stated that the automotive designer should not have responsibilities other than automotive design and if it does that person stops being an automotive designer and becomes something else. An automotive design manager stated that the automotive designers are given unrelated work to keep them as a part of the product development team.

### Discussions on the Other Responsibilities of the In-house Automotive Designers in Turkey

There are various other responsibilities of the in-house automotive designer outside the automotive design process. These responsibilities are not mentioned in the automotive design processes of the companies because they are expected from the automotive designers that are either not part of the design team conducting the automotive design process or are expected outside the automotive design process.

The majority of the respondents have stated that the automotive designers are responsible for the graphic design and sticker design of the vehicles. Some of these involve re-designing iconography for adaptation to Turkish standards or translating language of labels that are prepared by the graphic design team of the owner firm. There are also arrangements between the companies and the customers for commercial vehicles with already applied graphics; like branding of cars or buses. Although the in-house automotive designers are given these responsibilities, some of the automotive designer respondents find these tasks alienating them from the automotive design process.

On the other hand, there are various other responsibilities, defined by the respondents, which are either given to automotive designers because the companies do not understand the function of the automotive designer or the companies see them as “can do anything” type of employees. There is also one automotive design manager that stated that the automotive designers are given such tasks to keep them from receding from the R&D team.

There are various reasons for the other responsibilities, but the outcome is that these responsibilities, which are under the definitions of other professions, are another factor that keeps the automotive designers from conducting their designated tasks; the phases of the automotive design process.

#### 4.3.12. The Ideal Responsibilities of the In-house Automotive Designer

The following graph represents the topics mentioned by the participants in defining the ideal responsibilities that the in-house automotive designers should have in the companies in the automotive industry.

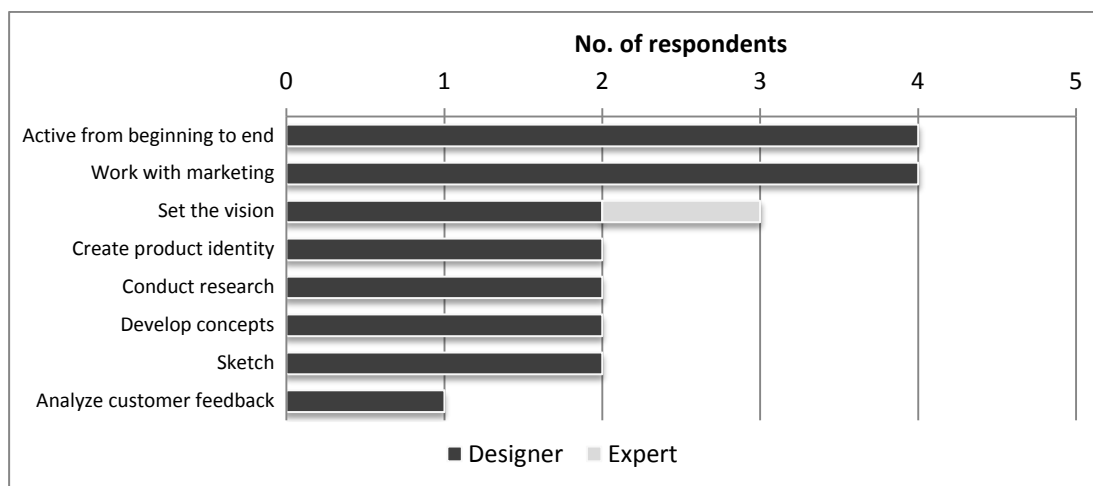


Figure 48 Ideal responsibilities of the in-house automotive designer

The short explanations below are given in order of appearance in the graph (Figure 48), beginning from the topics that received the most mentions to the ones that received the least.

- **Active from beginning to end:** Sharing the first place for the most received mention (4 automotive designers) is the ideal responsibility of the automotive designer to be in the automotive design process from beginning to the end. An automotive designer stated that '[...] it is important for the automotive designer to have a hand in all of these processes, for the wholeness and correct design of the out coming product' (65).
- **Work with marketing:** Sharing the first place for the most mentioned (4 automotive designers) topic is the necessity of the equal collaboration of the marketing department and the automotive designer in the company during the automotive design process.
- **Set the vision:** Two automotive designers and one automotive industry expert mentioned the ideal that the automotive designers should have the ability to set the vision for the company and its products. The automotive industry expert stated that the automotive designer in the company should be put in a position to have a direct input in the vision of the company.
- **Create product identity:** Two automotive designers stated the importance of being able to create the product identity of the products that the company produces.
- **Conduct research:** Two automotive designers mentioned the significance of being allowed to conduct their own research before beginning to design a vehicle rather than depending on the data received from the marketing departments.
- **Develop concepts:** Two automotive designers expressed the ideal to freely develop concepts for future vehicles.
- **Sketch:** Two automotive designers mentioned the necessity of having time to sketch before conducting modeling on digital domains.
- **Analyze customer feedback:** One automotive designer stated the ideal of being involved in the process of collecting and analyzing feedback that is received from the customers about the products of the company.

There were other important comments that were not given under the above topics because of their generalized approaches. These are given below.

An automotive designer stated the engineering formation in the company puts pressure on the company and that keeps the design team from achieving the required designs in a vehicle. Another automotive designer stated that the automotive designer should not be concerned with the surface modeling of vehicles, but should be the one who controls the process.

An automotive industry expert stated that the ideal situation for the automotive designers could begin with the creation of sub-departments in design that specialize on certain aspects of the design process. The automotive industry expert added that to create such an environment would require the automotive designers to carry that specialized knowledge and may be even to train them in that manner.

An automotive design manager stated that 'The ideal designer for us is the designer that has the knowledge and experience to design products in line with the corporate identity and that includes

creativity, in accordance with the expectations from clients, to find the most economical way and being compatible with all of the standards put forth by engineering' (66).

### **Discussions on the Ideal Responsibilities of the In-house Automotive Designer**

The participant automotive designers and one automotive industry expert stated their views of the ideal responsibilities of in-house automotive designers in the companies.

The responses of the participants mainly state the automotive designers' desire to be active during the whole product development cycle. The second most mentioned topic is related with the first one; the desire to work with marketing.

In most of the companies from the findings, the automotive design process begins with design brief from the management and marketing departments. These are the departments that decide on the main issues for the upcoming projects. The ideal of the automotive designer to be a part of this group is related to being active from the beginning of the process to the end. The same can be stated for setting the vision of the product and the company. If the design group is an active group in the product development process, they will have the chance to influence the products, hence influence the vision.

All of the responses received signify that the in-house automotive designers believe that the ideals for their profession depend on the companies' expectations from them, and approach towards them. Consequently, the ideals that are stated are very comparable with the current state of the automotive designers by the global brands abroad.

However, some of these ideals require a change in the companies in Turkey, a change of mentality, a change of expectations, and change of approach towards the in-house automotive designers. These changes, with the aspiration to create brands, open the possibility of these ideals becoming reality.

#### 4.4. Understanding the Automotive Design Managers in Turkey

The heading examines the automotive design managers, analyses and discusses their responsibilities, their expectations, expectations from them, their place in the company, and their educational backgrounds.

##### 4.4.1. The Responsibilities of Automotive Design Managers in Turkey

The following graph represents the topics mentioned by the participants in defining the responsibilities of the automotive design managers in Turkey as viewed by the participants.

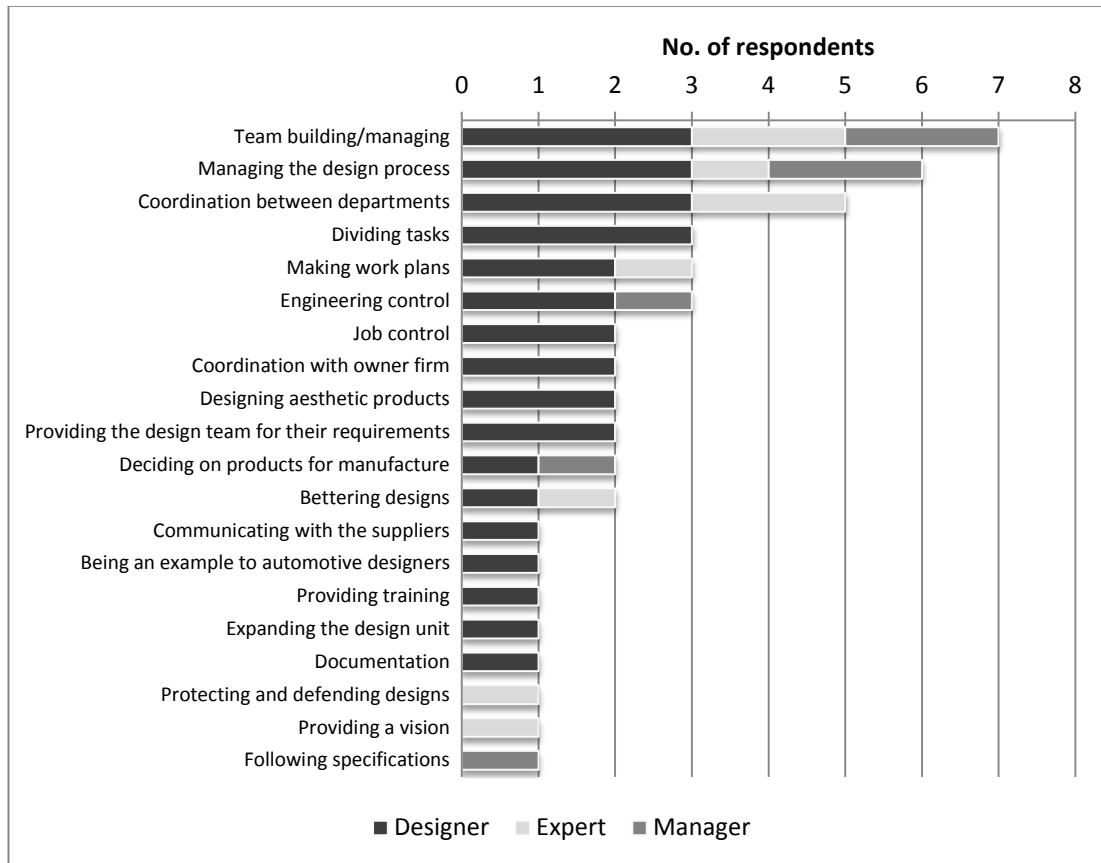


Figure 49 Responsibilities of automotive design managers in Turkey

The short explanations below are given in order of appearance in the graph (Figure 49), beginning from the topics that received the most mentions to the ones that received the least.

- Team building/managing:** The topic that received the most mentions (3 automotive designers, 2 automotive industry experts, and 2 automotive design managers) is the responsibility of the automotive design manager to put together teams and manage them. This includes design teams as well as any other department that the automotive design manager is managing.
- Managing the design process:** The topic that received the second most mentions (3 automotive designers, 1 automotive industry expert, and 2 automotive design managers) is

the responsibility of the automotive design manager to lead and manage the design process in the company.

- **Coordination between departments:** The topic that received the third most mentions (3 automotive designers, 2 automotive industry experts) is the responsibility of the automotive design manager to coordinate tasks and work divisions between different departments. One automotive industry expert stated that '[...] it has to be person that can coordinate the communication between different disciplines with a very serious accumulation of knowledge and maybe even be in a position to be able to determine the future of the company' (67).
- **Dividing tasks:** Three automotive designers stated that the automotive design manager is responsible for the division of certain tasks amongst the members of the design team.
- **Making work plans:** Two automotive designers and one automotive industry expert mentioned that the automotive design manager is responsible for the preparation of work plans for the design team.
- **Engineering control:** Two automotive designers and one automotive design manager stated the responsibility of controlling and managing the engineering department.
- **Job control:** Two automotive designers expressed that the task of controlling personnel and checking if they are conducting the tasks they are given.
- **Coordination with owner firm:** Two automotive designers mentioned the importance of communicating with the responsible parties of the owner firm and then briefing the personnel.
- **Designing aesthetic products:** Two automotive designers expressed the significance of the responsibility for the design of aesthetic products in the company.
- **Providing the design team for their requirements:** Two automotive designers mentioned the importance of providing the design team with the optimal requirements the design team needs to conduct their jobs. These include working space, design tools, and other necessities for the automotive designers.
- **Deciding on products for manufacture:** One automotive designer and one automotive design manager stated the responsibility of the automotive design manager in deciding and selecting the products that have the potential to be manufactured.
- **Bettering designs:** One automotive designer and one automotive industry expert mentioned the importance of bettering the designs that the design team works on.
- **Communicating with the suppliers:** One automotive designer stated that the automotive design manager is responsible for communicating with the OEM suppliers of the company.
- **Being an example to automotive designers:** One automotive designer expressed the importance of the task of setting an example for the members of the design team by being the top automotive designer.



- **Providing training:** One automotive designer stated the responsibility of the automotive design manager in providing the training that the members of the design team need for certain tasks.
- **Expanding the design unit:** One automotive designer expressed the significance of expanding the design team to have more members and more room to work in.
- **Documentation:** One automotive designer mentioned the task of the automotive design manager in controlling the documentation of the work that the departments, which the automotive design manager manages, produce.
- **Protecting and defending designs:** One automotive industry expert stated the responsibility of the automotive design manager is to protect and defend the designs and decisions of the design department. This is against other departments in the company.
- **Providing a vision:** One automotive industry expert mentioned the importance of the responsibility for providing a vision for the products as well as the company.
- **Following specifications:** One automotive design manager stated the task of the automotive design manager to follow and implement globally or regionally accepted specifications into the products of the company.

There were other important comments that were not given under the above topics because of their generalized approaches. These are given below.

One automotive designer stated that the automotive design manager's knowledge of automotive design is lacking, but that the automotive design manager is willing to learn about the subject. Another automotive designer stated that it would have been better to have a real automotive design manager that was in direct relations with the CEO and not to the marketing and engineering departments. One other automotive designer stated that 'We receive the critiques related to our work from the owner firm, the manager here only conducts managerial tasks' (69).

An automotive industry expert stated that the automotive design manager has to be an automotive designer; otherwise that design department cannot produce anything worth talking about. Another automotive industry expert stated that the automotive design manager being an automotive designer has many positive aspects that are important.

An automotive design manager stated that 'In a product like the automotive, where thousands of parts come together, with different expectations, it is necessary to make the lives of everybody a little harder' (70). Another automotive design manager stated 'According to the expectations of the clients and the company, determining the necessary products and the agreements relating to them, including visuals and the studio, taking the necessary preventative measures, organizations, and establish teams, and to manage all of these' (71).

### **Discussions on the Responsibilities of the Automotive Design Manager in Turkey**

According to the findings, the automotive design managers in Turkey are mainly responsible for team building and managing, managing the design process and the coordination between departments. There are also other topics that were mentioned by the respondents, but these seem to change from company to company in the automotive industry in Turkey.

In the global automotive industry, the automotive design manager, or chief designer, is responsible for creating a vision for the company through design, leading the automotive design process, conducting the dialogues between departments, and for reporting to the General Manager or CEO of the company (Section 2.6).

The difference between these responsibilities signifies the difference of the approach of the company towards automotive design, similar to the discussions in the understanding of automotive designer heading. The automotive design managers in Turkey are not only responsible for the design groups, but are also responsible for the R&D departments or the engineering departments. The design group is only one of their responsibilities amongst many other groups or departments that they are responsible for. On the other hand, the automotive design managers in the global brands are only responsible for the design departments.

An important discussion is the difference observable in the main responsibility of the automotive design manager, which also relates to the title “automotive design manager” and “chief designer”. The automotive design manager in Turkey is not expected to design, or style, the vehicle. Although the automotive design managers are expected to lead the process, and the findings support this, they are not the professional actors that set the vision of the products. The reasons for this, similar to the discussions in the automotive designer heading, are related to the missions of the companies in Turkey. On the other hand, the automotive design managers in the global brands have the main responsibility of setting the design language as well as the vision for the products. The language that they use in their designs becomes the signature of the brand as long as that automotive design manager stays in the company at that position (Section 2.6). This is partially the reason that they are called “chief designer” in the company.

This discussion signifies an important outcome; the importance of automotive design in the companies’ vision is different to the visions carried by the global brands. The differences between the responsibilities of the automotive design managers are influenced by the company visions that create different sets of missions. The achievement of these missions are seen by the companies as less related to automotive design and more related to the R&D, engineering, manufacturing and costs. Hence, the in-house automotive designers are led by professionals that are also in charge of R&D departments, engineering departments, who do not have design education, and who do not have the responsibilities of their counterparts that work in the global brands.

#### 4.4.2. The Expectations of the Companies from the Automotive Design Managers in Turkey

The following graph represents the topics mentioned by the participants, who were automotive industry expert and automotive design managers for this question, in defining the expectations of the companies from the automotive design managers in Turkey as viewed by the participants.



Figure 50 Expectations of the companies from the automotive design managers in Turkey

The short explanations below are given in order of appearance in the graph (Figure 50), beginning from the topics that received the most mentions to the ones that received the least.

- Design of successful products:** The topic that received the most mentions (2 automotive industry experts, 2 automotive design managers) is the expectation of the companies', from the automotive design manager, to design or lead the design of successful products for the company.
- Team building/managing:** Sharing the second place for the most mentioned (3 automotive industry experts) is the companies', from the automotive design manager, to build and manage teams in the departments that the automotive design manager controls.
- Creating profitability:** Sharing the second place for the most mentioned (1 automotive industry expert, 2 automotive design managers) is the expectation of the companies', from the automotive design manager, to create profitable products for the company.
- Managing the design process:** The third place for the most mentioned (1 automotive industry expert, 1 automotive design manager) is the expectation of the companies', from the automotive design manager, is to manage the automotive design process.
- None:** One automotive industry expert stated that there are no outstanding expectations from the automotive design managers by the companies' management departments other than to conduct managerial tasks.

- **Creativity:** One automotive industry expert mentioned the expectation from the automotive design manager to sustain creativity in the departments.
- **Design of aesthetic products:** One automotive industry expert expressed the ability to foresee the design of aesthetic products in the company.
- **Managing deadlines:** One automotive industry expert mentioned the importance of creating and managing the deadlines of projects.
- **Project management:** One automotive industry expert stated the significance of the automotive design manager being able to manage the projects in the company.
- **Protecting values:** One automotive industry expert stated the expectation from the automotive design manager to protect the values that the brand stands for.
- **Motivation of personnel:** One automotive industry expert mentioned the importance of infusing and maintaining the motivation of the personnel.
- **Providing discipline:** One automotive industry expert stated the expectation from the automotive design manager to establish and maintain the discipline needed for a successful management.
- **Coordination between departments:** One automotive industry expert mentioned the importance of creating and preserving the dialogue between the departments of the company that he/she is responsible for.

#### **Discussions on the Expectations of the Companies from the Automotive Design Managers in Turkey**

The observations of the findings show that the companies expect the automotive design managers to oversee the design of successful products, build and manage teams, and create profitability.

The findings also show the existence of a disagreement between the automotive industry experts and the automotive design managers. The most mentioned topic by the automotive industry experts was “team building and managing”. On the other hand, the automotive design managers have only mentioned three topics; design of successful products, creating profitability, and managing the design process. Compared to the number of topics mentioned by the automotive industry experts, the automotive design managers have not stated any other expectations of the companies from them.

The difference of expectations, as mentioned in the previous heading, is influenced greatly by the missions of the company and the importance of the design group in the company. Although the big companies seem to have lesser expectations from the persons that carry the title of automotive design managers, the expectations change as soon as the same persons put on different titles, such as Engineering Manager, R&D Manager, or Project Manager. On the other hand, the automotive industry experts have more varied expectations from the automotive design managers in the automotive industry in Turkey that are also visible in the global automotive industry. The number of titles that the automotive design managers in Turkey carry influences their ability to divert the amount of time necessary for managing the automotive design process. In all of the companies in this study, all the automotive design managers had other titles in the company. It can also be argued that the amount of time necessary for the automotive design process in the companies in Turkey is less than the amount of time necessary for R&D and engineering tasks.

These discussions also signify the difference between expectations of the companies from the automotive design managers in the global brands and the expectations of the big companies in Turkey from their automotive design managers. In summary, the global brands expect the automotive design managers to create signature products for their companies while the big companies in Turkey expect the execution of management and profit oriented tasks. This essential difference shows the difference of approach of the industries towards automotive design.

#### 4.4.3. The Expectations of the In-house Automotive Designers from the Automotive Design Managers in Turkey

The following graph represents the topics mentioned by the participants in defining the expectations of the in-house automotive designers from the automotive design managers in Turkey as viewed by the participants.

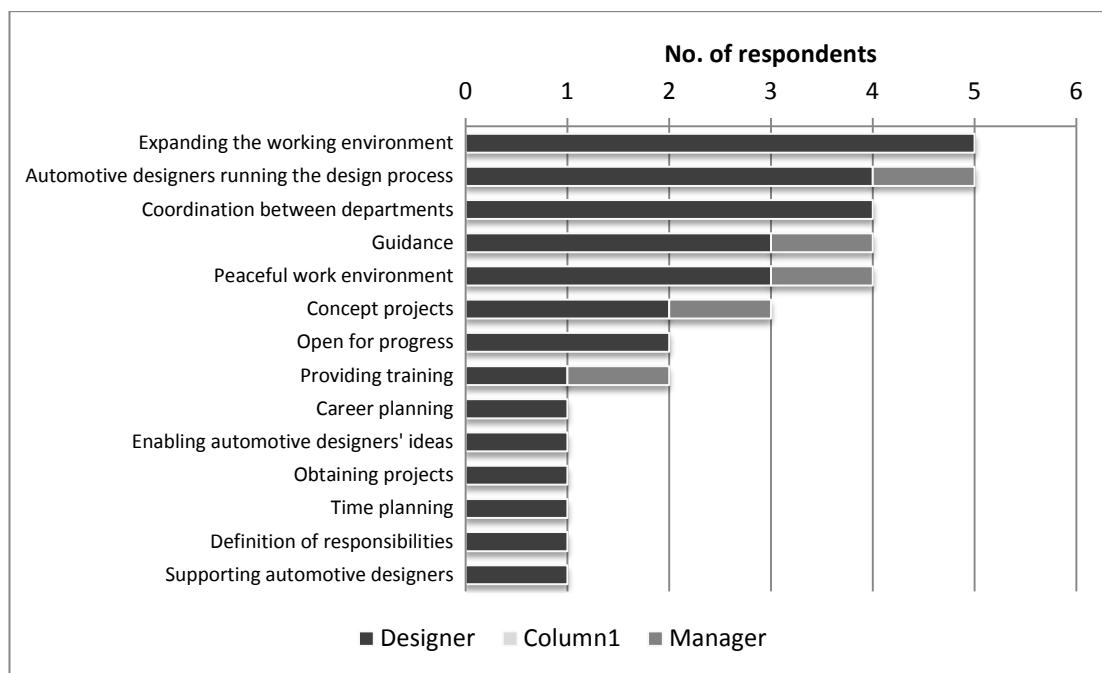


Figure 51 Expectations of the in-house automotive designers from the automotive design managers in Turkey

The short explanations below are given in order of appearance in the graph (Figure 51), beginning from the topics that received the most mentions to the ones that received the least.

- Expanding the working environment:** Sharing the first place for the majority of the mentions (5 designers) are the expectation from the automotive design manager to create a better and bigger working environment for the designers.
- Automotive designers running the design process:** Sharing the first place for the majority of the mentions (4 automotive designers, 1 automotive design manager) is the expectation from the automotive design manager to let a person with an automotive designer background to run and manage the automotive design process.

- **Coordination between departments:** Sharing the second place for the number of mentions (4 automotive designers) is the expectation from the automotive design manager to enable the coordination and dialogue between departments.
- **Guidance:** Sharing the second place for the number of mentions (3 automotive designers, 1 automotive design manager) is the expectation from the automotive design manager to provide guidance for the automotive designers during the design process.
- **Peaceful work environment:** Sharing the second place for the number of mentions (3 automotive designers, 1 automotive design manager) is the expectation from the automotive design manager to provide a peaceful working environment for the design team.
- **Concept projects:** The third most mentioned (2 automotive designers, 1 automotive design manager) is the expectation from the automotive design manager to allow and support the automotive designers to work on concept projects in the company.
- **Open for progress:** Two automotive designers mentioned the expectation from the automotive design manager to be open for progress in terms of learning automotive design as most automotive design managers are engineers.
- **Providing training:** One automotive designer and one automotive design manager stated their expectation from the automotive design manager to provide the necessary training for the personnel, to enable them to progress as automotive designers, providing mutual benefit for the companies and the automotive designers.
- **Career planning:** One automotive designer mentioned the importance of a career plan for the automotive designers who work in the company.
- **Enabling automotive designers' ideas:** One automotive designer stated the expectation of the automotive design manager to support and present their design ideas.
- **Obtaining projects:** One automotive designer expressed that the automotive design manager is expected to bring or give new projects to the design team.
- **Time planning:** One automotive designer mentioned the expectation from the automotive design manager to plan and announce the deadlines for tasks.
- **Definition of responsibilities:** One automotive designer stated the significance of defining the responsibilities of the people who are employed in the design team.
- **Supporting automotive designers:** One automotive designer expressed the expectation of receiving general support for the automotive designers. This includes standing behind the automotive designers and motivating them.

There were other important comments that were not given under the above topics because of their generalized approaches. These are given below.

One automotive designer stated that '[...] for us to conceptualize the vehicle and for the structure to follow accordingly' (72). Another automotive designer stated that '[...] open our way, let us have our signature and our motivation for the products that we create, apply the right decisions on to the design' (73). One other automotive designer stated that the automotive design manager should

support the automotive designers when they want to work in concept projects and to understand that every automotive designer might have a different point of view. Another automotive designer stated that '[...] in technical terms, has to have the capability to be able to criticize my design, has to speak the same language, see the same things' (74).

An automotive design manager stated that 'The designer, of course, expects a definitive and not supporting role for themselves during the product development process, and this is a rightful expectation, they want to put out more of their creativity' (75).

### **Discussions on the Expectations of the In-house Automotive Designers from the Automotive Design Managers in Turkey**

The examination of the findings shows the various expectations of the automotive designers from the automotive design managers and the automotive design managers' statements about the expectations of automotive designers from them. These expectations, if looked at from another perspective, can also be considered problems that need solutions from the automotive design managers.

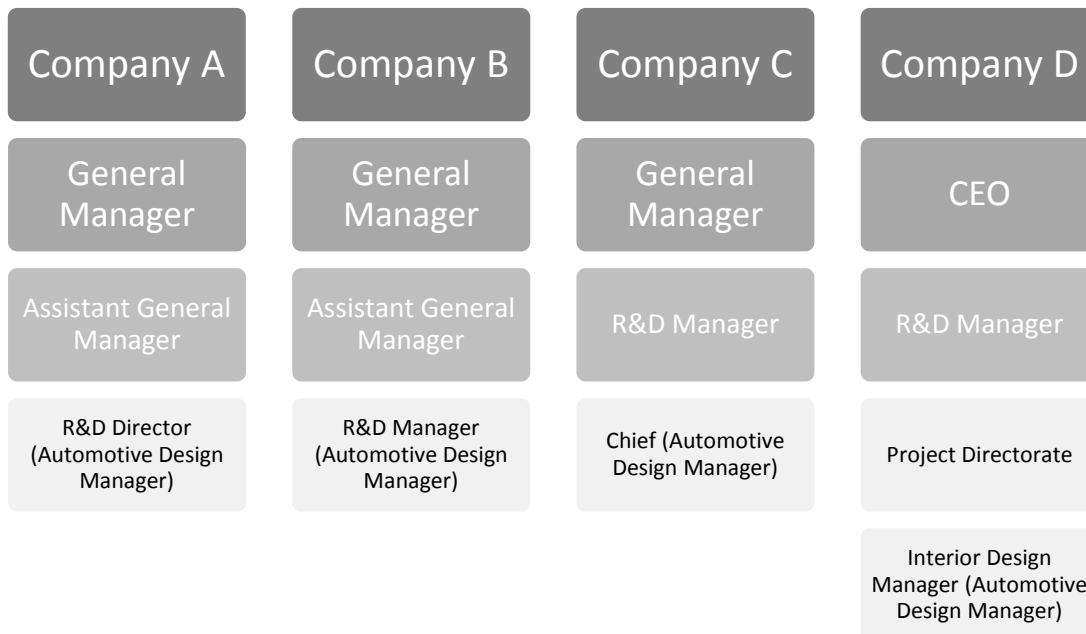
Most of the highest mentioned topics by the automotive designers are also stated by the automotive design managers. The topics on automotive designers running the design process, expectation of guidance from the automotive design managers, peaceful working environment, concept project, and providing training are mentioned both by the automotive designers and the automotive design managers. This signifies an understanding between the automotive designers and the automotive design managers about the requirements of the automotive designers, but the realization of these expectations is another issue.

The examination of the findings, in terms of expectations of automotive designers, shows that the automotive designers in the companies have problems in terms of working conditions and the design process. The automotive designers stated that their working conditions are not ideal and some even stated that they are working in the offices of other departments. This problem is related to the approach of the company and the positioning of the automotive designers in the company. The approach of the companies towards automotive design, as mentioned in previous headings, is not at the level expected by the in-house automotive designers. Hence, the physical positioning of the automotive designers, in terms of working space, is not at the level expected or required to conduct an ideal automotive design process. On the other hand, the automotive designers have stated with agreement from one automotive design manager that the automotive design process needs to be run by automotive designers. In all of the companies that were examined, the automotive design manager was a person with a mechanical engineering background. This, as stated by the automotive designers, was not the ideal profession to lead the design process and the examples from the global brands support the automotive designers' view.

The topics that were not mentioned by the automotive design managers are either not recognized by the automotive design managers, or the automotive design managers are not aware of the problem, or the automotive designers have not expressed their expectations to the automotive design manager. During and after the interviews, the automotive designers expressed that although they had expressed many of these expectations to the automotive design managers, the companies' future plans did not involve these. Most of the automotive designers believe that this is not caused by the automotive design managers and that the automotive design managers relay their expectations to the management, but the management does not consider these expectations important enough to act on them. This situation also signifies the approach of the company towards automotive design.

#### 4.4.4. The Position of the Automotive Design Manager in the Hierarchy of the Companies in Turkey

This heading examines the position of the automotive design managers, with the name of the positions, within the companies' hierarchy. These positions are presented in Figure 52.



**Figure 52 Position of the automotive design manager in the hierarchy of the companies in Turkey**

In Company A, the R&D Director, a mechanical engineer by education, is also the person that manages the design team, as well as the manager of other teams. This person works under the Assistant General Manager, who is in charge of the R&D Process in the company. The Assistant General Manager is tied directly to the General Manager of the company.

In Company B, the R&D Manager, a mechanical engineer by education, is also the automotive design manager of the company, as well as the manager of other teams. This person works under the Assistant General Manager, who is tied directly to the General Manager of the company.

In Company C, the Chief, a mechanical engineer by education, is also the automotive design manager of the company, as well as the manager of other teams. This person works under the R&D Manager, who is tied directly to the General Manager of the company.

In Company D, the Interior Design Manager is partially the automotive design manager of the company. Most of the design management of the company is handled from abroad, by the owner firm. This person works under the Project Director, who is tied to the R&D Manager. The R&D Manager is tied directly to the CEO of the company.

#### **Discussions on the Position of the Automotive Design Managers in the Hierarchy of the Companies in Turkey**

In all of the companies in Turkey, in terms of hierarchy, the automotive design managers were 3-4 levels below the general manager or the CEO of the company. On the other hand, major global brands have automotive design managers, who are in direct contact with the general manager or the

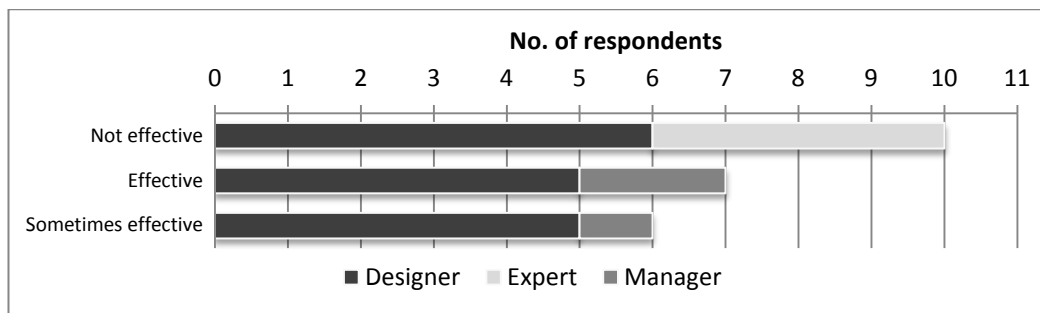


CEO of the company. This direct contact is associated with the approach of the global companies towards automotive design as well as the expectations of these companies from the automotive designers. The automotive design managers in major global companies have positions that are one level below the general manager or the CEO of the company. This enables the automotive design managers to communicate with the management of the company without going through any other executive personnel.

In all of the companies, the automotive design managers were also responsible for other departments of the companies. Because none of the companies had design departments, the design groups were considered as a division of the R&D Department or the R&D Directorate. In the global companies, the automotive designers have their own departments or directorates that are considered as separate entities. This also signifies the approach and positioning of automotive design and automotive designers in the automotive industry in Turkey. The difference of importance attributed to automotive design by the automotive industry in Turkey and by the global brands is observable through the existence of a separate design department and an automotive design manager that has a position close to the general manager or the CEO of the company.

#### 4.4.5. The Effectiveness of the Automotive Design Managers on Managerial Aspects of the Companies in Turkey

The following graph represents the answers received from the participants in defining the effectiveness of the automotive designer managers in the managerial aspects of the companies in Turkey.



**Figure 53 Effectiveness of the automotive design managers on managerial aspects of the companies in Turkey**

Most of the respondents (6 automotive designers, 4 automotive industry experts) stated that the automotive design managers are not effective in the decisions of the management about topics such as vision, product variety and design. One automotive designer stated that the automotive design manager has some say in the decisions, but the outlines of the vehicle to be produced are always coming from the top. Another automotive designer stated that the vehicle is decided by the strategic development department and that the automotive design manager has no real input in that process. One other automotive designer stated that the automotive design manager does have some input on the upper parts of the company, but that input is not strong enough to change most of the decisions. One automotive design manager stated that the automotive design manager does have some input on the decisions taken at the top, but those inputs are discussed after the main decisions for the vehicle are taken.

A less number of respondents (5 automotive designers, 2 automotive design managers) stated that the automotive design manager does have effectiveness in the decisions about the products, but most refrained from explaining this effectiveness. One automotive designer stated that the

automotive design manager plays a major role in effecting the products in terms of design and product development.

A lesser number of respondents (5 automotive designers, 1 automotive design manager) stated that the automotive design manager does have a varying effectiveness in the decisions about the products, but none of them explained the reach of this effectiveness.

### **Discussions on the Effectiveness of the Automotive Design Managers on Managerial Aspects of the Companies in Turkey**

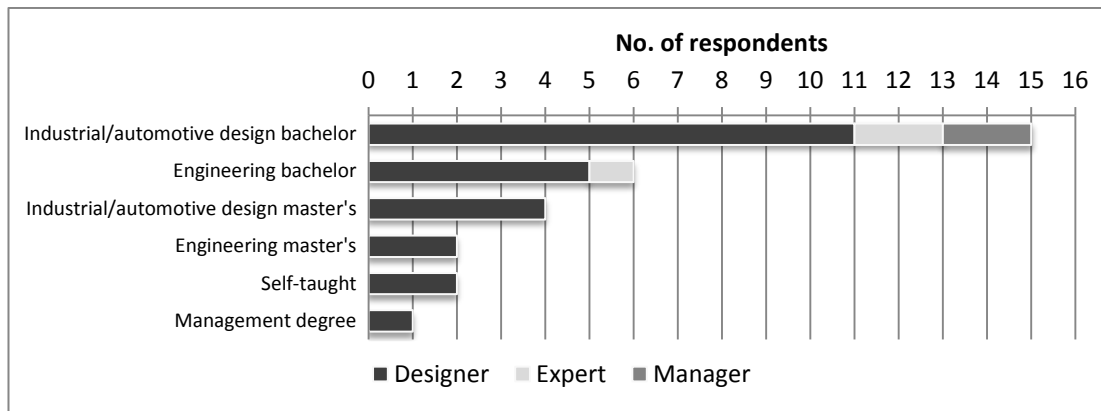
The majority of the respondents, which includes the majority of the automotive designers, state the effectiveness of the automotive design managers in the managerial decisions of the company as ineffective. This majority includes all the automotive industry experts that responded, but does not include any of the automotive design managers. The automotive design managers see themselves as either effective or somewhat effective in the managerial decisions of the company.

The effectiveness of the automotive design managers is closely related to the positions that they hold in the company as well as their position in the hierarchy of the company. The respondents that stated the automotive design manager as being effective were almost equal in number to the respondents that stated a varying degree of effectiveness. However, these respondents did not explain the benefits of this effectiveness in the managerial decisions of the company relating to automotive products.

In comparison, the automotive design managers in major global brands have the ability to communicate directly with the management of the company. This communication enables them to present, explain, and defend their ideas at the meetings conducted with the executive members. On the other hand, none of the automotive design managers in Turkey are high enough in the hierarchy to attend these executive level meetings as an equal level participant. However, the automotive design managers do attend these meetings, as the respondents stated, if they are invited to present a subject or give reports about a subject. The difference of approach, between the automotive industry in Turkey and the global brands, towards the automotive design manager, its position in the hierarchy as well as its ability to present, explain, and defend ideas signifies the importance given to automotive design for both subjects.

#### 4.4.6. The Ideal Educational Background of Automotive Design Managers

The following graph represents the topics mentioned by the participants in defining the ideal educational background of automotive design managers in Turkey.



**Figure 54** Ideal educational background of automotive designer managers in Turkey

The respondents were encouraged to give responses that defined the ideal education in terms of a bachelor's degree, master's degree, or being self-taught. Some respondents chose to give several answers, defining the bachelor's and master's degree of the ideal automotive design manager.

Majority of the respondents (11 automotive designers, 2 automotive industry experts, and 2 automotive design managers) stated that the automotive design manager, ideally, should have a background in industrial or automotive design in terms of a bachelor's degree.

The second most received mention (5 automotive designers, 1 automotive industry expert) was, ideally, for the automotive design manager to have a bachelor's degree in engineering.

The third most received mention (4 automotive designers) was, ideally, for the automotive design manager to have a master's degree in industrial or automotive design.

Some of the other received mentions included the ideal automotive design manager to have a master's degree in engineering, be self-taught, or have a management degree.

One automotive designer stated that '[...] absolutely a design background is needed. It does not correlate with an engineering background, and we are feeling this in our projects, even if we do not receive critiques, we are feeling the lack of that vision' (76). Another automotive designer stated that automotive design manager should be a design graduate.

An automotive industry expert stated that 'The way I see it, a design manager is a manager that comes from a designer background' (77). Another automotive industry expert stated that the automotive design manager should have an education in automotive design then maybe an education in design management.

An automotive design manager stated that '[...] according to the necessities defined by the separation of powers, the person in charge of the team should be an industrial designer' (78).

## **Discussions on the Ideal Educational Background of Automotive Design Managers**

The majority of the respondents, including the majority of the automotive designers, the majority of the automotive industry experts, and all of the automotive design managers, stated that the automotive design manager should have a background in industrial or automotive design in terms of a bachelor degree. This finding was interesting because of the contrast it provides for the current state of the automotive industry in Turkey.

In all of the four companies that were observed for the field study, all the people that held the position of the automotive design manager were of a mechanical engineering background. However, the findings suggest this to be a less desirable case. The second most mentioned topic, by five automotive designers and one automotive industry expert, see the current situation as ideal, but none of the automotive design managers that responded agree with this statement. The two automotive design managers believe that the automotive design manager should have a background in industrial or automotive design.

Some of the respondents stated a master's degree on engineering, if the person is an automotive designer, or a master's degree in design, if the person is an engineer, would be very helpful. This may be a necessity for the automotive design process in Turkey because the product development processes in the companies in the automotive industry in Turkey are mostly technical and engineering oriented. On the other hand, the respondents stated that the automotive design manager needs to have a design background, either as a bachelor's or as a master's, to be able to understand automotive design and to be able to communicate with the automotive designers.

Nevertheless, the automotive design managers being mechanical engineers in Turkey indicates reasons to discuss other topics. All of the design groups are situated inside other departments, such as R&D, and these departments mostly contain engineers. Because the people that hold the title of automotive design manager also hold other titles, mostly relating to R&D and engineering, and because the other titles consume more time and are handled by a larger number of employees, hence a higher degree of responsibility for the automotive design manager, it seems more reasonable for the management of the company to choose a person with an engineering background for the position. This choice enables the automotive design manager to have better communications with the R&D and engineering departments. But, it mitigates the effectiveness of the automotive design group and removes the ability of the in-house automotive designer to have a career path.

#### 4.4.7. The Ideal Formation of Automotive Design Managers

The following graph represents the topics mentioned by the participants that the ideal automotive designer managers should know or have in Turkey. This formation includes topics taught in educational institutes to topics that are self-taught, and topics that are accumulated over time.

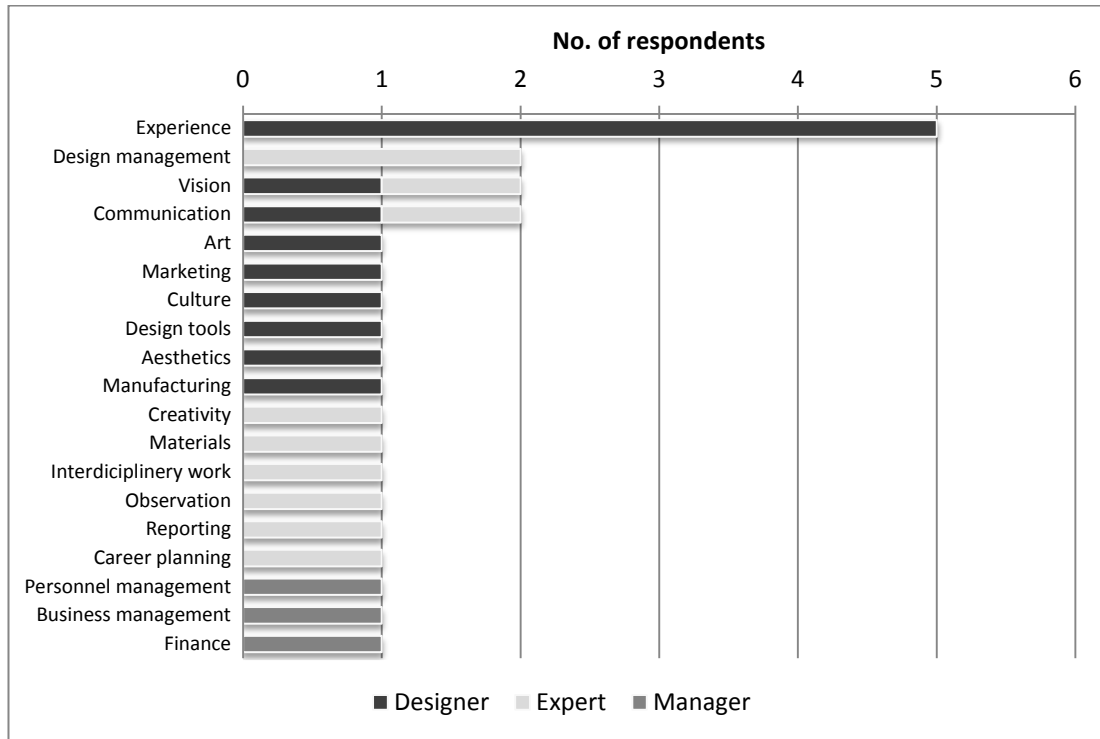


Figure 55 Ideal formation of automotive design managers

The short explanations below are given in order of appearance in the graph (Figure 55), beginning from the topics that received the most mentions to the ones that received the least.

- **Experience:** The majority of the mentions (5 automotive designers) were about the topic of experience. The automotive design manager is, ideally, someone with great amount of experience in automotive design.
- **Design management:** Two automotive industry experts stated that the ideal automotive design manager is the person who knows design management.
- **Vision:** One automotive designer and one automotive industry expert expressed the importance of having a vision for the products and for the company.
- **Communication:** One automotive designer and one automotive industry expert mentioned the ideal automotive design manager as the person who can communicate, with the people in the team, with other departments and with management.
- **Art:** One automotive designer described the ideal automotive design manager as the person who knows about art and art history.

- **Marketing:** One automotive designer expressed the importance of knowledge about marketing.
- **Culture:** One automotive designer mentioned the significance of knowledge about local culture and the culture of the place where the products are sold.
- **Design tools:** One automotive designer stated that the automotive design manager is the person who knows the use of different design tools and that can use them.
- **Aesthetics:** One automotive designer described the ideal automotive design manager as the person who knows about aesthetics and how it is implemented into products.
- **Manufacturing:** One automotive designer mentioned the importance of manufacturing knowledge in being an automotive design manager.
- **Creativity:** One automotive industry expert described the ideal automotive design manager as the person who understands creativity.
- **Materials:** One automotive industry expert stated that the ideal automotive design manager is the person who is knowledgeable about different and new materials.
- **Interdisciplinary work:** One automotive industry expert expressed the importance of understanding different disciplines of thought and the ability to create and manage work with those disciplines.
- **Observation:** One automotive industry expert mentioned the significance of the ability to observe and learn from observation.
- **Reporting:** One automotive industry expert stated the ideal automotive design manager as the person who has the ability to write successful reports.
- **Career planning:** One automotive industry expert mentioned the importance of planning the careers of the people who are working under the automotive design manager.
- **Personnel management:** One automotive design manager stated that ideally an automotive design manager would be the person who can manage the personnel.
- **Business management:** One automotive design manager expressed the importance of being able to manage the business of design.
- **Finance:** One automotive design manager mentioned the ideal automotive design manager as the person who knows about finance and economics and how these change design.

### **Discussions on the Ideal Formation of Automotive Design Managers**

The findings show a lack of correlation between the answers received from the respondent groups. Other than the two topics, vision and communication, none of the respondent groups agreed on an ideal formation of the automotive design manager.

The most mentioned topic, experience, was stated by five automotive designers. The next topic that received the highest mentions was from two respondents, both automotive industry experts. These

results signify that there is either confusion or insufficient knowledge on how and/or what an automotive design manager should be for the automotive industry in Turkey.

An interesting discussion is the difference of opinion that the participant groups have on the ideal formation of an automotive design manager. Other than the two aforementioned topics, the groups were not able to agree on the other 17 topics they mentioned. The automotive design managers, who are the subject of this heading, mentioned three topics that were management and finance related.

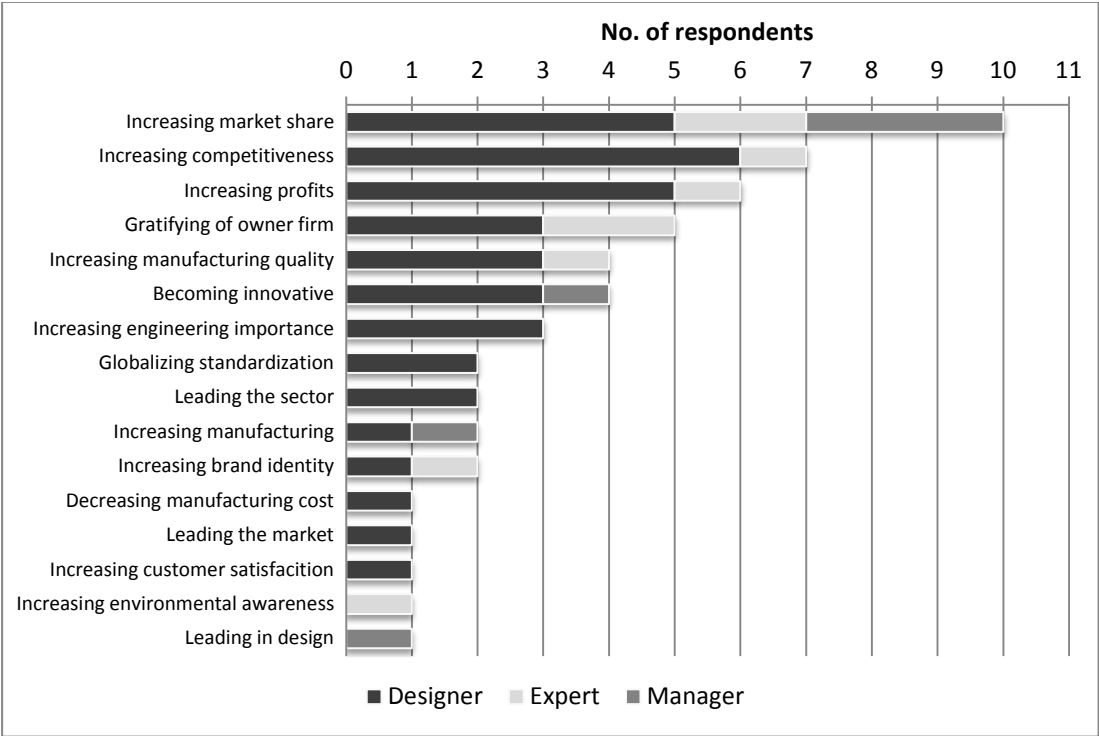
The findings, in general, show that the automotive design managers are put in a different position than their counterparts in the global brands. This position influences their expectations and the expectances from them. It also has an influence on their ideal education and formation. However, the automotive design managers do not seem to see themselves as a part of the design team/group. Although they are in charge of the design group, their backgrounds and their other responsibilities take precedence over their ability to conduct design management in comparison to global brands. It is possible to argue that this situation creates a big disadvantage for the in-house automotive designers as well as the company in the global market competition.

**4.5. Understanding the Automotive Companies that Employ In-house Automotive Designers in Turkey**

This heading focuses on the participant’s views of the company and what the company thinks, and acts, on the issues of automotive design, and in-house automotive designers.

**4.5.1. The Aims and Goals of the Automotive Companies in Turkey**

The following graph shows the topics mentioned by the participants in terms of the aims and goals of the automotive companies in the automotive industry in Turkey.



**Figure 56 Aims and goals of the automotive companies in Turkey**

The short explanations below are given in order of appearance in the graph (Figure 56), beginning from the topics that received the most mentions to the ones that received the least.

- Increasing market share:** The majority of the mentions (5 automotive designers, 2 automotive industry experts, and 3 automotive design managers) were stating the aim/goal of the company is to raise its market share in Turkey.
- Increasing competitiveness:** The second most mentioned (6 automotive designers, 1 automotive industry expert) topic was the companies’ aim/goal is to increase the competitiveness of their products.
- Increasing profits:** The third most mentioned (5 automotive designers, 1 automotive industry expert) topic was the companies’ aim/goal is to increase their profits on their products.



- **Gratifying of owner firm:** Three automotive designers and two automotive industry experts stated that the companies try to gratify the owner firm the company licenses its products from.
- **Increasing manufacturing quality:** Three automotive designers and one automotive industry expert expressed the importance of increasing the quality of the companies' manufacturing processes.
- **Becoming innovative:** Three automotive designers and one automotive design manager stated the companies' aim/goal is to become an innovative company through its use of materials, manufacturing, and products.
- **Increasing engineering importance:** Three automotive designers mentioned the significance of becoming the most advanced engineering company in the automotive industry in Turkey.
- **Globalizing standardization:** Two automotive designers expressed the aim/goal of the companies as to reach global standardization by achieving a standard output that the other companies are reaching for under the owner firm.
- **Leading the sector:** Two automotive designers stated the importance of becoming the financial leader in the sector that the company is competing in.
- **Increasing manufacturing:** One automotive designer and one automotive design manager mentioned the companies' aim/goal as increasing the output of its manufacturing plants, to sell more products.
- **Increasing brand identity:** One automotive designer and one automotive industry expert stated the aim/goal of the companies as increasing the identity of the brand, and achieving higher recognition.
- **Decreasing manufacturing cost:** One automotive designer stated the importance of decreasing the cost of manufacturing, and producing the products at a lower cost.
- **Leading the market:** One automotive designer mentioned the aim/goal of the company as becoming the leader of the sector and becoming the company that every other company follows in terms of innovation, engineering, and design.
- **Increasing customer satisfaction:** One automotive designer described the companies' aim/goal as increasing the number of satisfied customers of their products.
- **Increasing environmental awareness:** One automotive industry expert mentioned the importance of increasing the produce of environmentally responsible vehicles.
- **Leading in design:** One automotive design manager stated the significance of becoming the leader of the market through the use of automotive design.

There were other important comments that were not given under the above topics because of their generalized approaches. These are given below.

One automotive designer stated that '[...] this is most certainly a factory and very manufacturing oriented, I mean, materials are cheap here, it is in a strategic location, from here the distribution to the Middle East and whatnot is easier' (79).

An automotive industry expert stated that 'The aims and goals of the companies in the automotive industry in Turkey are to follow the leadership of the owner firms to a degree, nothing else' (80). Another automotive industry expert stated that 'For the sake of the future of Turkey, we need to have a brand, have a vehicle, because if we do not, the Turkish economy will falter' (81). One other automotive industry expert stated that '[...] in terms of automotive, small companies are mostly conducting their own design works and engineering works, the firms that make their own vehicles are small firms, big firms and global firms, usually, are establishing contract manufacturing factories in Turkey' (82).

An automotive design manager stated that 'We are trying to provide the European market, quality products as they are expected from the global players, with the price advantages in Turkey, at more competitive prices. We are differentiating ourselves from our local competitors in the European market as well; industrial design has a serious role in achieving this' (83).

### **Discussions on the Aims and Goals of the Automotive Companies in Turkey**

The findings from the field study show that the majority of the respondents believe that the automotive companies in Turkey are aiming to increase their market shares, increase their competitiveness, and increase their profits. However, the key point is the way that the companies are trying to achieve these goals.

One of the ways that the successful companies achieve increased market share and profitability is through the successful integration of the automotive design process. This process is dependent on the automotive designers, automotive design managers and the company, all three subjects understanding each other and communicating to perform in unison. This successful integration also leads to a successful brand image, where the company becomes known through the design of its products.

Conversely, the topics mentioned by the respondents signify that automotive design is not a priority in the automotive companies in Turkey. The findings show topics such as becoming innovative, increasing brand identity, or leading in design, but these topics are seldom mentioned. Even then, the understanding of innovation is mostly based on engineering and manufacturing tasks.

There are other methods to increase market share and some of these are observable in the automotive companies in Turkey. The increased concentration in mechanical engineering and manufacturing capability give the companies the ability to become key role players in these fields. However, these areas of improvement are chosen by companies in Turkey that do not aim to create a brand image, but rather supply lower cost parts and cheaper engineered products to their owner firms, or to the market. This is represented in the findings as "gratifying the owner firm".

Majority of the topics are revolving around engineering, manufacturing, and finance oriented topics. However, the aim of designing better products and leading through the use of automotive design, as seen in the findings, is only mentioned by one respondent that is an automotive design manager. This outcome is not surprising, as the expectations of the companies and their approach towards automotive design and automotive designers signaled this result in the previous headings.

There are also discussions on the following comparisons that show differences in approach in terms of the aims and goals of the companies in Turkey.

- Small companies versus Big companies
- Brands versus Subsidiaries
- Small capital versus Big capital
- Original versus Licensed

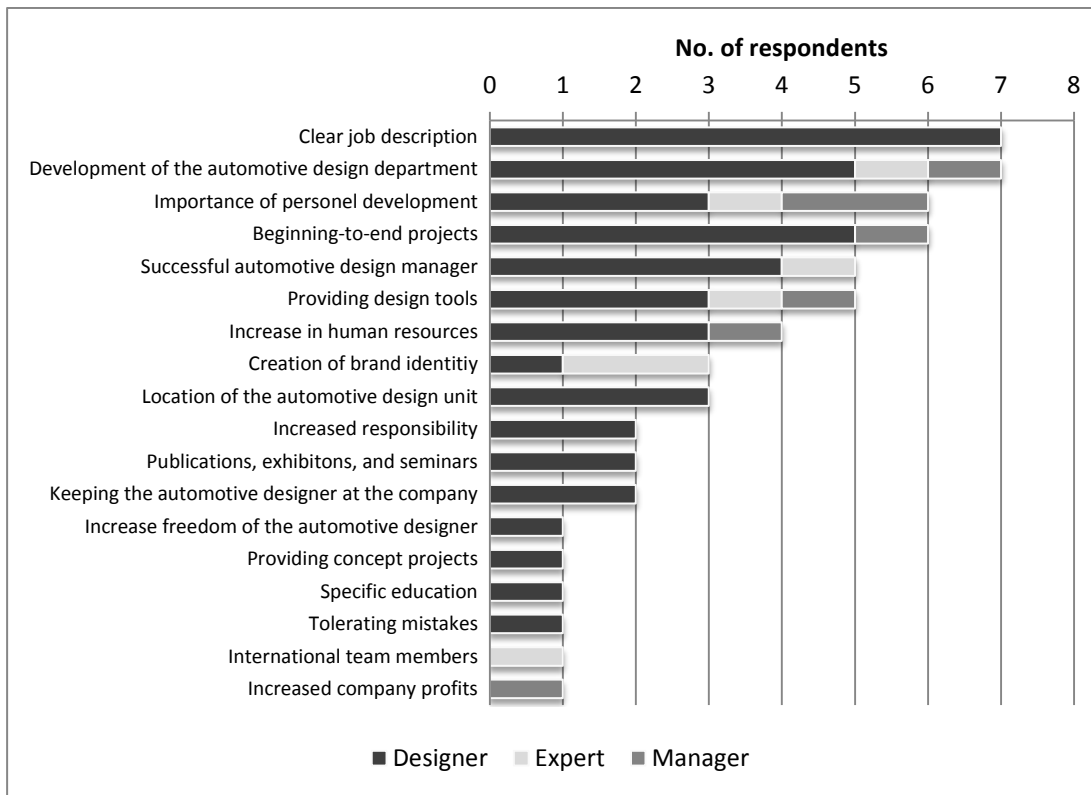
The four companies that are a part of the field study are all relatively big companies in the automotive industry in Turkey. Three of these companies are also subsidiaries of global companies, and produce under strict licensing deals. The fourth of these companies is owned and operated in Turkey, but began its first production under the license of a foreign brand, currently produces original products. All of the four companies are large companies that have large amounts of capital. Some of these companies are owned by the biggest holdings in Turkey.

On the other hand, four of the automotive industry experts that participated in the interviews are owners, or partners, of the most active small automotive companies in Turkey. Three of these small companies are experimenting with their original design products that are created under their own brands. The fourth company conducts out-source projects for the big companies. All of these companies have relatively small capitals compared to the big companies.

In comparing the aims and goals of the small companies' vs. the big companies', it is possible to observe that the small companies are approaching automotive design and placing it in a more critical position. This is visible from their company portfolios and their employees. However, the big companies, in comparison, are approaching and positioning automotive design in a less critical position. This is observable from the findings under the automotive design, automotive designer and automotive design manager headings.

#### 4.5.2. The Development of Automotive Design in the Automotive Industry in Turkey

The following graph shows the topics mentioned by the participants that are needed for developing automotive design in the automotive industry in Turkey.



**Figure 57 Necessary items for the development of automotive design in the automotive Industry in Turkey**

The short explanations below are given in order of appearance in the graph (Figure 57), beginning from the topics that received the most mentions to the ones that received the least.

- **Clear job description:** Sharing the first place for the majority of mentions (7 automotive designers) was the issue of clear job descriptions inside the companies. The automotive designers believed that their job descriptions on what is required of them and what they are capable of doing in the company are not clearly understandable.
- **Development of the design department:** Sharing the first place for majority of the mentions (5 automotive designers, 1 automotive industry expert, and 1 automotive design manager) was the issue of underdeveloped or non-existing design department. The respondents view is to develop/establish a design department with the required necessities.
- **Importance of personal development:** Sharing the second place for the amount of mentions (3 automotive designers, 1 automotive industry expert, and 2 automotive design managers) was the issue of personal development. The respondents stated that the company should support the personal development of their automotive designers for mutual benefit to the automotive designer and the company.

- **Beginning-to-end projects:** Sharing the second place for the amount of mentions (5 automotive designers, 1 automotive design manager) was the issue of project development. The participants who mentioned this topic request projects that are conceptualized in the company, taken through the whole design process, and are manufactured in the company, instead of working with projects from outside. One automotive designer stated that '[...] having a product that only you have a say in, and that you can market with your own foresights is a happening that can really improve design' (84). One automotive industry expert stated that 'Our Ministry of Industry has to do this in automotive; it has to say "design a light commercial vehicle, create a concept for me"' (85).
- **Successful automotive design manager:** Sharing the third place for the amount of mentions (4 automotive designers, 1 automotive industry expert) was the issue of successful automotive design managers. One automotive designer stated that '[...] a design manager has to be imported that knows automotive design, if it cannot be raised inside the firm' (86). Another automotive designer stated that 'The managers have to be knowledgeable about automotive design. They have to understand what we do' (87). Another automotive designer stated that 'I do not think that a design manager is necessary for Turkey, professionals can be brought from England or Germany who can provide the necessary support 7 days, 24 hours' (88).
- **Providing design tools:** Sharing the third place for the amount of mentions (3 automotive designers, 1 automotive industry expert, and 1 automotive design manager) was the issue of lacking design tools, ranging from design software to clay modeling facilities. The respondents stated that they need the design tools to complete some of the tasks and to achieve better designs.
- **Increase in human resources:** Three automotive designers and one automotive design manager stated the importance of increasing the amount and quality of people that are working in the design team. One automotive designer stated that '[...] sometimes, the people who shout more get accepted instead of the people who state what is correct, you know? That is what it is like for us right now' (89).
- **Creation of brand identity:** One automotive designer and two automotive industry experts mentioned the need for the company to understand the importance of brand identity and to allow the automotive designers to achieve brand establishment through design.
- **Location of the design unit:** Three automotive designers expressed the need for the company to move its design locations to more popular parts of the country to attract more automotive designers.
- **Increased responsibility:** Two automotive designers mentioned the significance of giving more responsibility to the in-house automotive designers. One automotive designer stated that 'We have to be taken advantage of in terms of ergonomics and consumer relations as well, not only in terms of styling' (90).
- **Publications, exhibitions, and seminars:** Two automotive designers described the need for the company to subscribe to more design publications and for the company to send its automotive designers to exhibitions and seminars.
- **Keeping the automotive designer at the company:** Two automotive designers mentioned the importance of initiative in keeping the automotive designers of the company from leaving for other companies.

- **Increase freedom of the automotive designer:** One automotive designer stated the need for the company to increase the freedom of the automotive designers and to support their creativity.
- **Providing concept projects:** One automotive designer expressed the significance of providing the in-house automotive designers with conceptual projects for the personal progression of the automotive designers.
- **Specific education:** One automotive designer mentioned the importance of increasing industry-university relations to push the universities into forming specialized design education programs, including automotive design and stated 'The department needs to open in the universities in Turkey, expert people are needed' (91).
- **Tolerating mistakes:** One automotive designer stated the importance of the company to learn to or increase its tolerance towards mistakes of employees.
- **International team members:** One automotive industry expert mentioned the need for the company to gather different automotive designers from around the world to build a multi-cultural design team. One automotive industry expert stated that the design team needs to be formed from international people to form a multi-cultural team.
- **Increased company profits:** One automotive design manager described the importance of increasing the company profits to increase its support in automotive design.

#### **Discussions on the Development of Automotive Design in the Automotive Industry in Turkey**

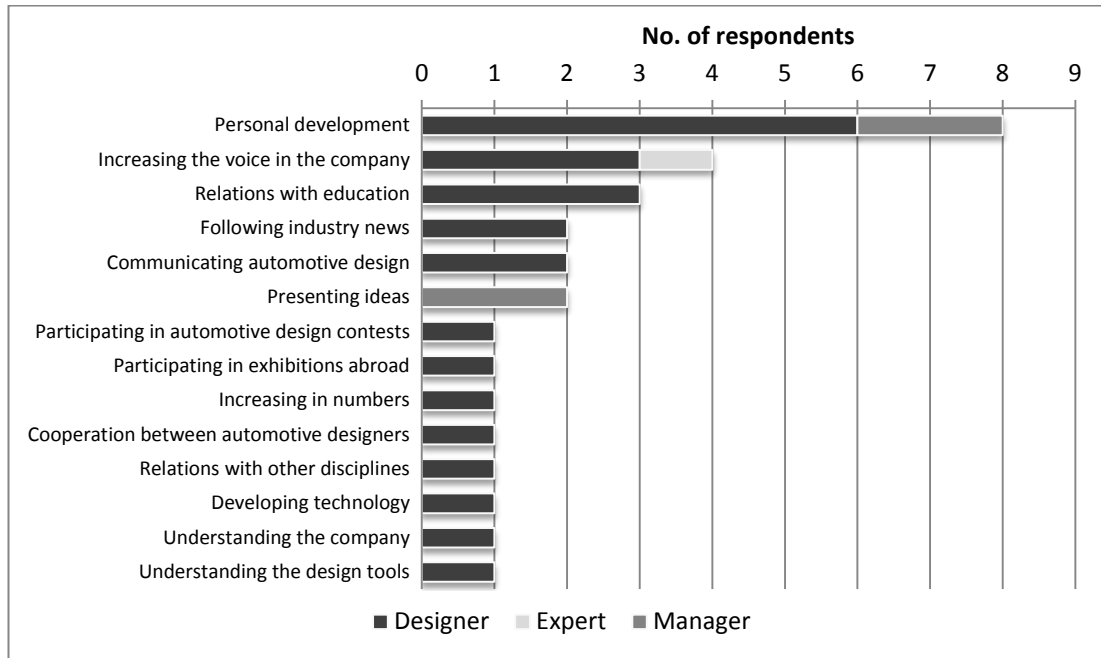
The topics that received the highest mentions are about the issues that the automotive designers raise in the automotive industry in Turkey. Issues such as clear job descriptions, need of a design department, support for personal development, increased participation in projects (participating in the whole automotive design process), need of a successful automotive design manager, and the need for design tools can be observed as problems that were also mentioned in the previous headings. However, it is interesting to note that the automotive design managers are also aware of some of these issues.

The mentioned issues are very fundamental for the successful integration of automotive design in an automotive company. The first issue, discusses in the definition of the automotive designer, is a crucial issue and one that must be solved before it is possible to talk about an automotive design process and its partners. The other issues, which were also observed in previous headings, are all important in creating a design department with relatively satisfied employees.

In the global automotive industry, where automotive design is considered a pillar; as important as any other department, issues such as these, as mentioned by the respondents, have been dealt with long ago, during the definition phases of the profession of automotive design. If the companies that employ automotive designer in Turkey are aiming to be globally competitive in their relative markets, as state in the aims and goals of the companies in Turkey, then it is of vital importance to carry automotive design to a similar position that are observed in the global companies.

#### 4.5.3. The Actions that Automotive Designers can take to Improve Automotive Design in the Automotive Companies in Turkey

The following graph shows the topics mentioned by the participants that can be achieved by automotive designers to improve automotive design in the automotive industry in Turkey.



**Figure 58** Actions that automotive designers can take to improve automotive design in the automotive companies in Turkey

The short explanations below are given in order of appearance in the graph (Figure 58), beginning from the topics that received the most mentions to the ones that received the least.

- Personal development:** The majority of the mentions (6 automotive designers, 2 automotive design managers) were about the topic of personal development. The participants stated that ‘We have to improve ourselves [...] we have to know the limits, know how much and where we can achieve’ (92). One automotive design manager stated that ‘[...] the most important and critical role here is our inability to claim the existence of a capability level in Turkey’ (93)
- Increasing the voice in the company:** The second most mentioned (3 automotive designers, 1 automotive industry expert) topic was about increasing the voice of the automotive designers inside the companies to get themselves heard. One automotive designer stated that the views and approach of engineers have to change for design to succeed.
- Relations with education:** The third most mentioned (3 automotive designers) topic is about increasing the relations of the industry with universities. The participants stated that automotive design has to be a factor at university, and even high school level. One automotive designer stated ‘[...] I find it very logical for people that are capable, with over 10 years of experience, to teach at universities’ (94).
- Following industry news:** Two automotive designers stated significance of following the industry constantly to know what state-of-the-art is.

- **Communicating automotive design:** Two automotive designers expressed the necessity of communicating about automotive design every place they visit.
- **Presenting ideas:** Two automotive design managers emphasized the importance of the action that the automotive designers should take in creating and presenting their ideas to management before they are asked to do so.
- **Participating in automotive design contests:** One automotive designer mentioned the importance of the participation of automotive designers in design contents around the world.
- **Participating in exhibitions abroad:** One automotive designer stated that the automotive designers should participate in exhibitions that the owner company participates in around the world.
- **Increasing in numbers:** One automotive designer expressed the importance of promoting the profession and encouraging design students to increase the number of design graduates.
- **Cooperation between automotive designers:** One automotive designer emphasized the significance of the cooperation between automotive designers, to get together and discuss certain topics about automotive design, automotive designers, and the industry in Turkey to achieve an organization that can act together on certain topics.
- **Relations with other disciplines:** One automotive designer mentioned that the automotive designers should increase their relations with the other disciplines who are a part of the product development process.
- **Developing technology:** One automotive designer described the necessity of being involved in creating technology or working with people who create technology.
- **Understanding the company:** One automotive designer expressed the importance of understanding the company that is employing them. Understanding the needs, the values, and the stance of the company is crucial for the in-house automotive designers to successfully design products for that company.
- **Understanding the design tools:** One automotive designer stated that the personal development in the use of design tools is important in improving the automotive design capability of an automotive designer and consequently improves the automotive company.

There were other important comments that were not given under the above topics because of their generalized approaches. These are given below.

One automotive designer stated that 'I believe that the real solutions for the Turkish market will be provided by the Turkish designers' (95).

An automotive industry expert stated that 'Has no role because the strings are in someone else's hand' (96). Another automotive industry expert stated that the automotive designers cannot do anything without receiving support.



### **Discussions on the Actions that Automotive Designers can take to Improve Automotive Design in the Automotive Companies in Turkey**

The examination of the topics mentioned by the respondents' shows that majority of the respondents believe that the development of automotive design are partially influenced by the actions of the in-house automotive designers.

The topic that received the most responses, support of personal development, was also observed in the previous heading. The need for the automotive designers to be able to develop themselves, with training, with research, or via another method, is seen by the automotive designers and the automotive design managers as a influencing point in the development of automotive design in the industry. However, the company, thus the automotive design managerial divisions, needs to be able to feel the same need, the need for the development of the employed automotive designer, to arrange the funds and schedule for this development.

One other interesting topic for discussion was the presentation of ideas, which was only mentioned by the automotive design managers. The argument of the automotive design managers, and also their expectation from their automotive designers, is for the in-house automotive designers to present their own ideas and to open these ideas up for discussion. This expectation is not presented by the automotive design managers as a necessity or as an obligation to the automotive designers; the automotive design managers expect the automotive designers to perform these kinds of presentations of their own accord. This signifies that the automotive designers are not using avenues as such to present their ideas, but are relying on the automotive design managers to give them their chores. On the other hand, it can be argued that the automotive designers are pacified by the companies in Turkey, the expectations and the approach of the companies, and the positioning of the automotive designers forces the automotive designers to constantly struggle with responsibilities that should not belong to them.

#### 4.6. Understanding the Automotive Industry in Turkey

This heading examines the views of the participants on the automotive industry in Turkey.

##### 4.6.1. The Current Situation of the Automotive Industry in Turkey

The following graph represents the topics mentioned by the participants about the current situation of the automotive industry in Turkey.

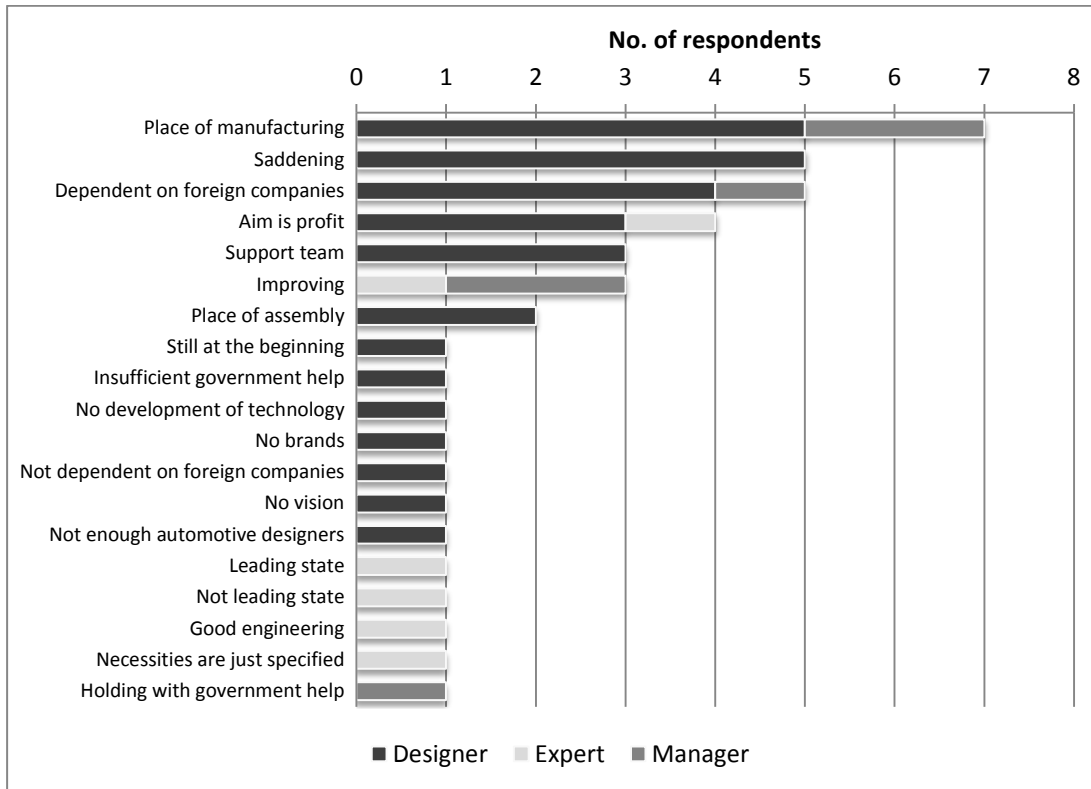


Figure 59 Current situation of the automotive industry in Turkey

The short explanations below are given in order of appearance in the graph (Figure 59), beginning from the topics that received the most mentions to the ones that received the least.

- Place of manufacturing:** The majority of the mentions (5 automotive designers, 2 automotive design managers) were stating that Turkey is a location of manufacturing for companies. One automotive design manager stated that '[...] you have to move towards your own product creations, these are not only industrial design of course, they have to be products that you have full responsibility over and are licensed by you. In today's joint ventures, I will not say it is difficult to do this, but limited, and can be blockaded in various ways' (97).
- Saddening:** Sharing the second place for the most mentions (5 automotive designers) was the respondents stating the saddening situation of the automotive industry in Turkey in comparison to the brands that are advancing in the global automotive industry. One automotive designer stated that the industry in Turkey is very passive compared to the global automotive industry.

- **Dependent on foreign companies:** Sharing the second place for the most mentions (4 automotive designers, 1 automotive design manager) was the dependency of the industry on foreign companies and their decisions. One automotive designer states that '[...] as long as companies are tied to the outside, we are unable to trigger the establishing of programs and graduates from those programs in Turkey [...] the company, then, without local designers resources, begins to outsource design in other countries, we are in such a vicious circle right now' (98).
- **Aim is profit:** The third place for the most mentions (5 automotive designers) states that the only aim of the companies in Turkey is profit and nothing else.
- **Support team:** Three automotive designers view the industry as a support team for the foreign brands that it is producing for. One automotive designer stated that '[...] they tell us to do this, we do it, they tell us not to do it like that, and to do it like this, we do it that way, I mean, they all do it, and although these need to be experiences for us, we are on the wrong path, we do as asked, but we do not accept the know-how, we keep on expecting to be told what to and to do it that way' (99).
- **Improving:** One automotive industry expert and two automotive design managers state that the industry is in a constantly improving phase. One automotive designer stated that '[...] as we are giving support, if you did some of the things right to these people, these people slowly start telling you different things [...]' (100). An automotive industry expert stated that the automotive industry in Turkey has had a successful early phase and that it has competent people working in it. The automotive industry expert added that the industry is now moving on to a design and R&D phase and will be moving on to creating brands soon.
- **Place of assembly:** Two automotive designers describe the industry as an assembly industry, where most of the products are assembled rather than designed and engineered. One automotive designer stated that 'Turkey continues to be an assembly country' (101).
- **Still at the beginning:** One automotive designer states that the industry is still in its infancy in Turkey. It needs more time to grow to be able to fully design its own products.
- **Insufficient government help:** One automotive designer mentioned that the industry is suffering because of insufficient legislative and monetary support from the government.
- **No development of technology:** One automotive designer expressed the industry's deficiency in developing its own technologies, and stated that it is depending on the countries that are exporting technologies. One automotive designer stated that 'Without the development of software, materials, and other things, without living, feeling, and paying the price, how can people understand the value of design?' (102).
- **No brands:** One automotive designer mentioned the lack of Turkish brands. The automotive designer stated that most of the brands in Turkey are manufacturers of licensed brands.
- **Not dependent on foreign companies:** One automotive designer emphasized the lack of dependency on the decisions of foreign companies. The automotive designer stated that 'There are serious details and there is no outside dependence, it is all done inside the company and, besides, economy is global now' (103).

- **No vision:** One automotive designer stated the industry's lack of vision to create products and brands of its own.
- **Not enough automotive designers:** One automotive designer expressed the damaging side of the absence of automotive designers working in Turkey. The automotive designer stated that this forces the companies in Turkey to assess outsourcing from foreign design companies.
- **Leading state:** One automotive industry expert stated that the industry is in a leading state compared to other countries producing similar products.
- **Not leading state:** One automotive industry expert mentioned the critical state of the industry as a follower, compared to countries with similar economic power.
- **Good engineering:** One automotive industry expert described the industry as an industry with large numbers of qualified and able engineers.
- **Necessities are just specified:** One automotive industry expert stated the significance of the industry beginning to specify its necessities to become a major player in the global market.
- **Holding with government help:** One automotive design manager expressed the current situation of the industry as a support driven industry that might not function without government.

#### **Discussions on the Current Situation of the Automotive Industry in Turkey**

The majority of the respondents see the automotive industry in Turkey as a place of manufacturing, dependent on foreign companies, and saddening in terms of its situation. There are also views concerning the profit oriented aims of the industry, focusing and prioritizing on engineering and manufacturing tasks, which were also mentioned in the previous heading as issues that prevent the integration of a successful automotive design process.

The topics mentioned by the respondents under this heading were also mentioned under previous headings. The topics observed here act as a summary to the issues listed under the previous headings. However, the interesting discussion from these summarized responses is the possible comparison of negative and nonnegative aspects that influence the current state of the industry.

Some of the topics mentioned by the respondents convey meanings that can be divided into negative and nonnegative aspects, depending on the perspectives of the respondent groups. The negative aspects influence the current state of the industry and prevent the improvements needed for the automotive industry in Turkey to become a strong player in the global automotive industry. The nonnegative aspects are considered not crucial and are not seen as influencing the automotive industry in Turkey's place in the global automotive industry. Topics such as place of manufacturing, place of assembly, support team, aim of profit, government help, development of technology, branding, dependency on owner firm, and number of automotive designers are aspects open for debate on their influences as negative or nonnegative aspects.

From the perspective of the in-house automotive designers, issues listed below are seen as the aspects that negatively influence the current situation of automotive industry in Turkey as well as the automotive design process in companies.

- **Being a place of manufacturing:** The automotive designers believe that the concentration on manufacturing is negatively influencing other areas of improvement, such as innovation, design, and brand creation.
- **Being dependent on foreign companies:** The dependency on foreign companies also has a similar effect on the development of the automotive industry in Turkey as a formidable player in the global automotive industry.
- **Only aim being profit:** The aim of profit is overtaking other important aims that the automotive industry should have in becoming a player in the global automotive industry.
- **Being a place assembly:** The current situation in the industry is promoting the creation of assembly plants for foreign brands in Turkey. This has a negative influence in the growth of original brands.
- **Insufficient government help:** The help that the industry receives from the government is not as strong or balanced as in other developing countries. This is influenced by the views of the government and the industry for the future of the automotive industry.
- **Lack of technology development:** The relatively small amount of technological developments in the automotive industry in Turkey is prohibiting the industry in becoming a major know-how developing country.
- **Lack of brand development:** The current situation of the automotive industry in Turkey is more supportive of bringing the manufacturing facilities of foreign brands in to Turkey than supporting the creation of local brands.
- **Shortage in the numbers of automotive designer:** The small amount of automotive designers employed in the automotive industry in Turkey signifies the industry's lack of future plans for the development of automotive design in Turkey.

On the other hand, the companies in Turkey, also with statements from the automotive design managers, view some of these topics as non-negatives.

- **Being a place of manufacturing:** The automotive industry in Turkey, various investors, and the government is supportive of the increasing manufacturing capabilities of the industry.
- **Being dependent on foreign companies:** The current situation of the automotive industry in Turkey is mostly dependent on the manufacture of licensed products that are exported to various countries around the world. The increase in export numbers of these licensed products are viewed as progress in the industry.
- **Being a place assembly:** There are various global companies that use Turkey as an assembly location; shipping parts from around the world to be assembled into vehicles in Turkey and exported from here to various countries around the world. This method is supported by the automotive industry and the government to increase the rate of employment for workers as well as the export numbers of the industry in Turkey.
- **Lack of brand development:** The majority of the automotive industry in Turkey is focused on engineering, manufacturing, and exporting vehicles that are produced under licenses from their owner firms. This majority of the industry does not have plans to create brands. The other part of the industry, the minority of the industry in Turkey, does have plans to

create brands, but are lacking the resources to achieve the goal in the current state of the industry.

- Shortage in the numbers of automotive designers:** The majority of the automotive industry in Turkey is focused on engineering, manufacturing, and exporting vehicles, which are produced under licenses from their owner firms. This part of the industry does not seem to view automotive design as a priority in achieving their aims and goals. The other part of the industry, the minority of the industry in Turkey, does have plans to implement and develop the automotive design process in their firms. These small companies and their representatives are aware of the shortage of automotive designer in the industry and are trying to remedy the situation by openly speaking about the subject in various platforms.

The statements of the respondents show that the automotive industry in Turkey wants to improve its competitiveness and not become an industry solely focused on profit. The financial and bureaucratic help provided by the government to the industry is viewed as an important aspect in the improvement of the automotive industry in Turkey. The relatively small amount of technological development in the automotive industry in Turkey is viewed as a problem; the companies are increasing their investments in these areas. However, the comparison of the view of the automotive designers to the state of the current situation signifies areas that are still open to debate. The automotive designers, and some of the automotive industry experts, view the negatives aspects as greatly preventative of improvement in the current state of the automotive industry in Turkey.

#### 4.6.2. The Five Year and Twenty Year Foresight for the Automotive Industry in Turkey

The following graphs depict the participants' view of the future of the automotive industry in Turkey.

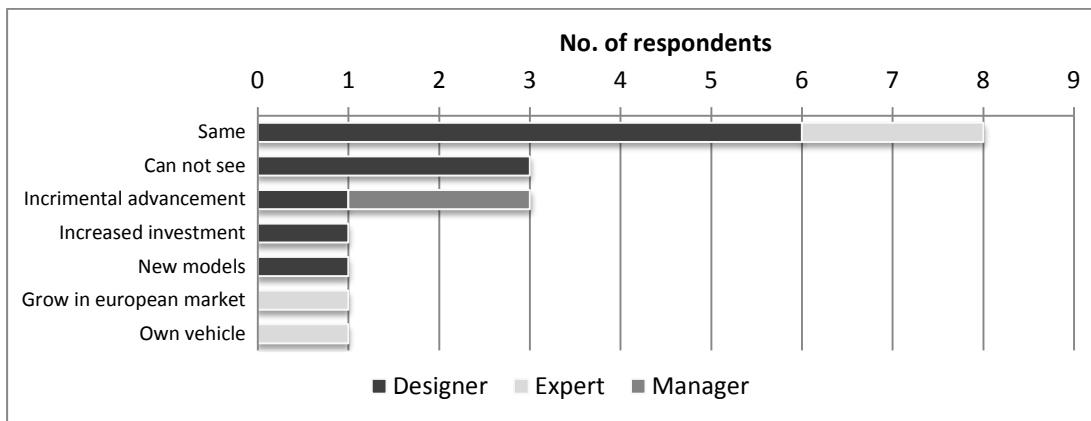
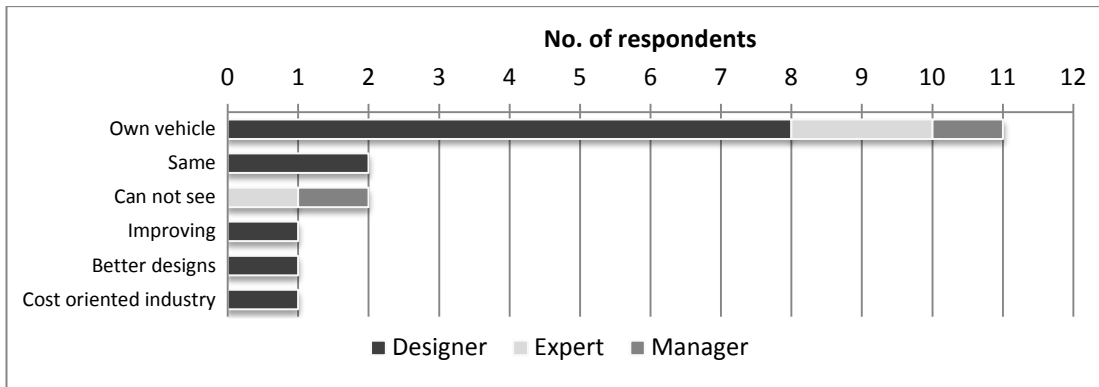


Figure 60 Five year foresight for the automotive industry in Turkey



**Figure 61 Twenty year foresight for the automotive industry in Turkey**

The majority of the responders see the industry staying the same for the next 5 years while some of them are expecting incremental advances and some are having a difficulty seeing the future of the industry. One automotive designer stated that ‘If our schools keep on going this way, I do not think we will see any change’ (104). Another automotive designer stated that ‘[...] if a brand is not established, a brand that belongs to Turkey, the improvement will be more in the manufacturing phase’ (105).

On the other hand, most of the participants are expecting to see the production of a vehicle in Turkey that is engineered and designed in Turkey and that belongs to a Turkish brand. Some of the participants are not seeing any changes in the next 20 years and some are stating that it will stay the same.

### **Discussions on the Foresights for the Automotive Industry in Turkey**

The respondents do not see any changes, or see incremental changes, in the automotive industry in Turkey for the next five years. In industries such as the automotive industry, five years is considered a short time. A new vehicle, as stated by the respondents, takes anywhere from 36-48 months to design, engineer, test, and manufacture. However, in developing countries, where the development speed of a country, hence its industries, are expected to increase until a stabilization is reached, five years is a moderate amount of time. In this timeframe, none of the respondents stated a change in the situation of automotive design in Turkey, except one automotive industry expert, who stated expectations for an original, locally originated vehicle.

On the other hand, the majority of the respondents view the 20 year foresight as carrying important changes; the creation of original, locally originated vehicles. To achieve this milestone, the automotive industry has to change from its current situation into a state that invests more in technology and design. Creating an original vehicle, one that is not only made by Turkish companies, but one that also carries parts that are mostly designed and manufactured in Turkey, requires extensive research and development. The current structure of the industry is not arranged to achieve tasks as such, but the necessary know-how is accumulating in terms of engineering, testing, and manufacturing. The same accumulation of knowledge and personnel is needed for automotive design if original vehicles are expected from the automotive industry in Turkey.

#### 4.6.3. The Actions that need to be taken to improve the Automotive Industry in Turkey

The following graph depicts the participants' views on the necessary actions that need to be taken to improve the condition of the automotive industry in Turkey.

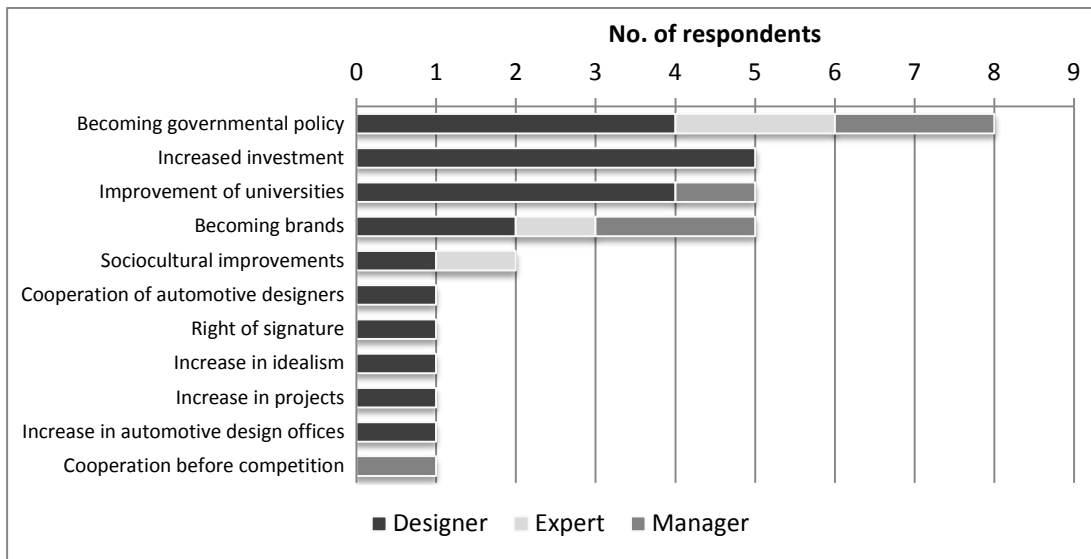


Figure 62 Necessary steps for the improvement of the automotive industry in Turkey

The short explanations below are given in order of appearance in the graph (Figure 62), beginning from the topics that received the most mentions to the ones that received the least.

- Becoming governmental policy:** The majority of the mentions (4 automotive designers, 2 automotive industry experts, and 2 automotive design managers) were about the issue of automotive industry becoming a part of governmental policy. One automotive designer stated that 'I do not see a formation that wants to achieve this without government support. It is a very hard and very serious expensive investment' (106).
- Increased investment:** Sharing the second place for the most mentioned (5 automotive designers) issue was the need for increase investment of companies into the industry.
- Improvement of universities:** Sharing the second place for the most mentioned (4 automotive designers, 1 automotive design manager) issue was the need to improve the education in the universities to match the requirements of the automotive industry. This included R&D investments in universities and automotive design specific education. One automotive designer stated that 'The schools need to be examined, the teachers need to be examined, without them having a vision I do not believe that the students they raise can be effective' (107).
- Becoming brands:** Sharing the second place for the most mentioned (2 automotive designers, 1 automotive industry expert, and 2 automotive design managers) issue was need to create Turkish brands, with their own licensed products, with their own engineering, and with their own designs.
- Sociocultural improvements:** The third most mentioned (1 automotive designer, 1 automotive industry expert) issue was the need to increase the sociocultural status of the people. The participants stated this need for the people to realize the importance of such



issues as public transportation, green vehicles, and automotive design. One automotive designer stated that “[...] we have to form the foundation of the person that can say “this is the car you drive in the city, and this is for off-road”” (108).

- **Cooperation of automotive designers:** One automotive designer emphasized the necessity of improving the industry by the automotive designers getting together and discussing certain topics about automotive design, automotive designers, and the industry in Turkey.
- **Right of signature:** One automotive designer expressed the significance of the right of signature for automotive/industrial designers, similar to the system that the architects have in Turkey.
- **Increase in idealism:** One automotive designer mentioned the importance of becoming idealists about the situation and future of the automotive industry in Turkey.
- **Increase in projects:** One automotive designer state that to improve the industry, the amount of projects that are conducted in the industry need to increase.
- **Increase in automotive design offices:** One automotive designer expressed the need to increase the amount of small automotive design offices that work in outsourced projects.
- **Cooperation before competition:** One automotive design manager stated that to improve the industry, the companies need to come together more often and discuss their aims and goals, especially in terms of export products, before competing on the market.

#### **Discussions on the Actions That Need To Be Taken To Improve the Automotive Industry in Turkey**

In the current state of the automotive industry in Turkey, there are various government policies that are acting to support the industry (Section 2.3). These policies include research and development support as well as tax cuts. However, these policies are not considered enough of a support by the industry. The industry is asking for lower taxes and more funding support for the research and development projects. These are also requested by the small companies as well as the big companies. The same type of support by the government is required for automotive design. The government can play a major role in pushing the industry to focus more on automotive design; in parts of products as well as the whole vehicle. Without government intervention to support automotive design, and with the government’s full support in pushing the industry for higher numbers of export numbers, the automotive industry may focus more on the engineering and manufacturing side of automotive production. Although this may compensate for the short term plans of the industry, in the long term, the global brands will begin moving to countries with cheaper engineering and cheaper manufacturing, as stated by the respondents.

The current investments in the industry are established and are expected to increase export products and create areas of engineering and testing research areas. However, the investors in Turkey and in foreign markets are looking for global automotive brands that are interested in manufacturing and exporting from the Middle East region. These types of investments, using Turkey as a location for manufacture and export, are also supported by the government with the policies set in place to provide lower taxes and cheaper utilities for investors. The investments that the automotive industry in Turkey needs to achieve the desired importance in the global industry are of a different type. The industry requires the development of technologies that it can market, designs that are desired, education that interests global students, and original and innovative brands that can compete globally.

Most of the respondents agree on the requirement of an automotive design education to become an automotive designer. The small number of automotive designers in Turkey was also observed as a problem under the previous headings. These issues are partially related to the level, amount and distribution of design education in Turkey. The lack of automotive design education as well as the lack of possible automotive design instructors creates problems in the formation of automotive design related curriculums. Adding to these issues is the lack of interest from the automotive industry in Turkey for automotive design. The expectations, the approaches and the positioning of automotive design in the automotive industry in Turkey do not pressurize the educational system to cater to the potential automotive design students. This in turn creates a situation where there is a shortage in the number of automotive designers, shortage in the number of facilities that teach automotive design, but a need for both for the automotive industry in Turkey to achieve a presence in the global automotive industry.

The automotive industry in Turkey needs to build and develop its own brands to achieve recognition in the global automotive industry as an important role player. The current state shows that the global automotive industry views the industry in Turkey mostly as a country to manufacture and export vehicles, but this is changing. The increasing rate of research and development projects and the increasing number of testing and standardization facilities are slowly putting Turkey in a position of engineering importance. However, the same type of attention is necessary towards automotive design to create original and innovative brands. The automotive industry in Turkey needs to change its expectations of automotive designers, need to approach the automotive designers in a similar fashion to the global industry, and to position the automotive designers in the correct position for a successful automotive design process.

#### 4.6.4. The Actions that Automotive Designers can take to improve the Automotive Industry in Turkey

The following graph depicts the participants' views on the actions that the automotive designers in the industry can take to improve the condition of the automotive industry in Turkey.

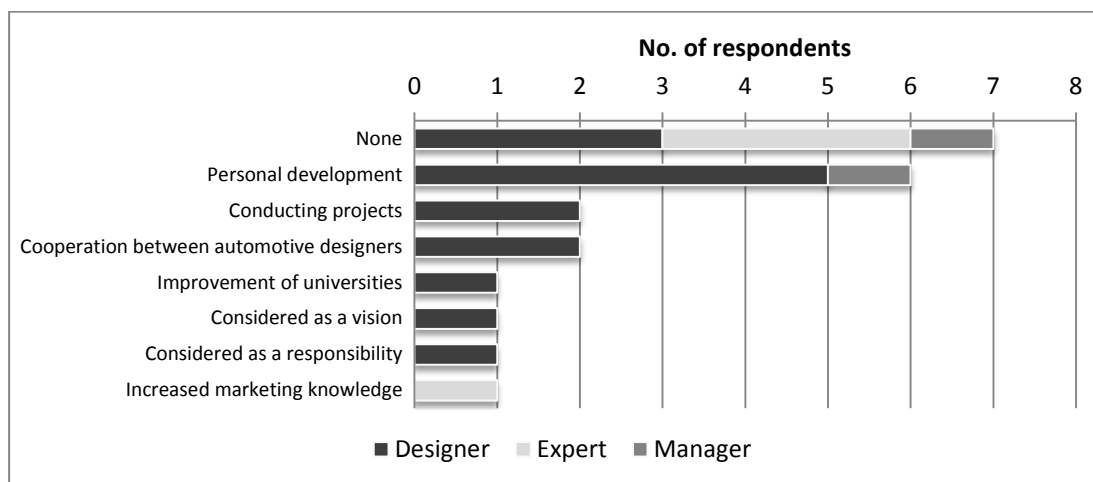


Figure 63 Actions that automotive designers can take to improve the automotive industry in Turkey

The short explanations below are given in order of appearance in the graph (Figure 63), beginning from the topics that received the most mentions to the ones that received the least.

- **None:** Majority of the mentions (3 automotive designers, 3 automotive industry experts, and 1 automotive design manager) stated that there is nothing the automotive designer can do to achieve an improved automotive industry in Turkey.
- **Personal development:** The second most mentioned (5 automotive designers, 1 automotive design manager) topics was the issue of personal development and its effect on the improvement of the industry. The participants stated that gain in personal development will positively influence the improvement of the automotive industry directly.
- **Conducting projects:** Sharing the third place for the most mentioned (2 automotive designers) topic was the issue of conducting more projects. The participants believed that conducting more projects increases their knowledge and experience and this, in turn, improves the automotive industry.
- **Cooperation between automotive designers:** Sharing the third place for the most mentioned (2 automotive designers) topic was the need of the automotive designers to get together and discuss certain topics about automotive design, automotive designers, and the industry in Turkey.
- **Improvement of universities:** One automotive designer stated the importance of improving the industry by teaching automotive design at universities with the support from automotive companies.
- **Considered as a vision:** One automotive designer emphasized that the automotive designers can help improve the industry by considering the need for this improvement as a vision in their work environments.
- **Considered as a responsibility:** One automotive designer mentioned the help that could be provided by the automotive designers to improve the industry by considering the need for this improvement as a responsibility that they have.
- **Increased marketing knowledge:** One automotive industry expert described the significance of improving the industry by increasing the automotive designers' knowledge of marketing.

### **Discussions on the Actions That Automotive Designer Can Take to Improve the Automotive Industry in Turkey**

The majority of the respondents state that the automotive designers in the industry cannot influence the state of the automotive industry in Turkey. However, a large number of respondents stated that the personal development of the automotive designers could have a positive effect on the improvement of the automotive industry in Turkey.

The personal development topic was also mentioned by the respondents for the development of automotive design in the companies in Turkey. This signifies that the improvement of the automotive companies and the automotive industry in general depends on the personal development of the employees.

Some of the automotive designers in the companies have stated that the knowledge they carry, in terms of automotive design, is not satisfactory for themselves to conduct the ideal automotive design process. They stated that training, in various areas, a better education and/or a more specific education, better resources from the company, and better working environment are important

factors in the development of the automotive design personnel. The ability to conduct different concept project is also another factor that some of the automotive designers viewed as an important factor in personal development as well.

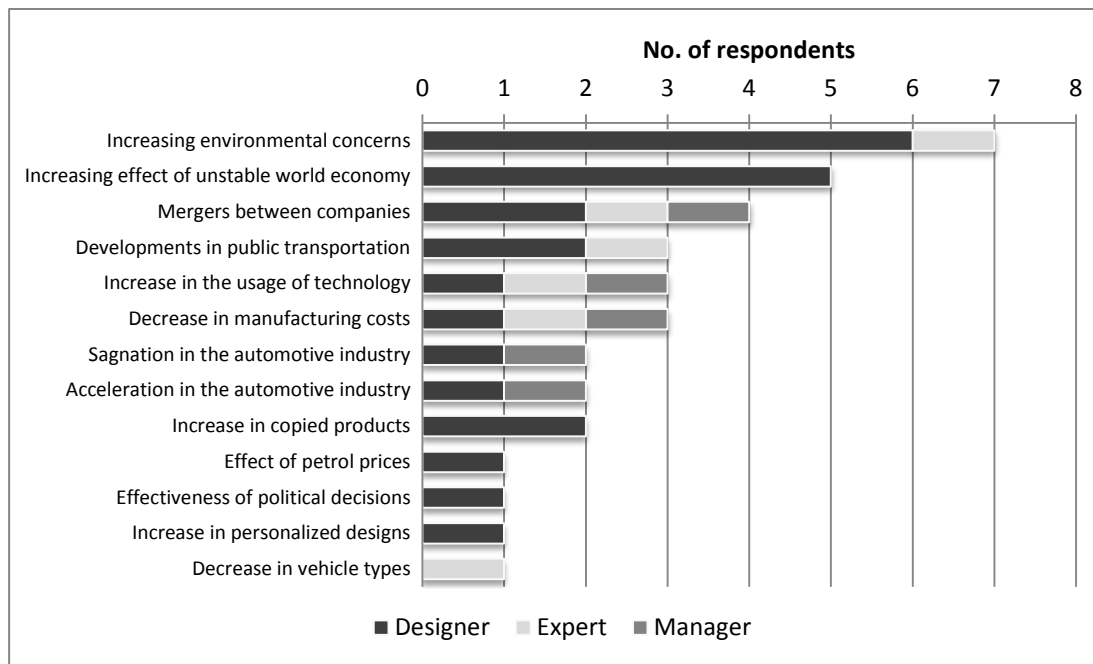
The companies, big or small, need to provide the time and resources for the automotive designers for personal development. Different types of personal development programs, training facilities and personal time slots are supported in successful companies, and not only in the automotive industry. This will enable the automotive designers to improve themselves in various areas, which will reflect on the work that they conduct in the companies.

#### 4.7. The Global Automotive Industry Viewed from Turkey

This heading examines the views of the participants on the Global automotive industry.

##### 4.7.1. The Current Situation of the Global Automotive Industry

The following graph represents the participants' views on the current state of the global automotive industry.



**Figure 64 Current situation of the global automotive industry**

The short explanations below are given in order of appearance in the graph (Figure 64), beginning from the topics that received the most mentions to the ones that received the least.

- Increasing environmental concerns:** The majority of the mentions (6 automotive designers, 1 automotive industry expert) stated that the main issue in the global automotive industry is the raising of environmental concerns of the public and governments. This, the participants stated, will lead to environmental issues directing the technological achievements that this industry will concentrate on.

- **Increasing effect of unstable world economy:** The second most mentioned (5 automotive designers) issue is about the current instability of the World economy and its effects on the global automotive industry. The participants stated that this effect will bring great change to the global automotive industry and may cause slowing in the development of the industry.
- **Mergers between companies:** The third most mentioned (2 automotive designers, 1 automotive industry expert, and 1 automotive design manager) topic was the ongoing and future mergers between companies in the global automotive industry.
- **Developments in public transportation:** Two automotive designers and one automotive industry expert stated that the global automotive industry is moving towards an increase in the public transportation sector.
- **Increase in the usage of technology:** One automotive designer, one automotive industry expert and one automotive design manager emphasized the increasing of investments and developments of technological products for the automotive market in the global industry.
- **Decrease in manufacturing costs:** One automotive designer, one automotive industry expert and one automotive design manager stated that the global automotive industry is trying to decrease its manufacturing costs. The participants stated that the current drift towards manufacturing facilities in Asia will further increase because of this.
- **Stagnation in the automotive industry:** One automotive designer and one automotive design manager expressed the view that the industry is slowing down its global development rate to cope with arising factors such as the global economic crises and increasing labor costs.
- **Acceleration in the automotive industry:** One automotive designer and one automotive design manager stated that the global industry is accelerating in terms of technological products and environmental friendly manufacturing methods and products.
- **Increase in copied products:** Two automotive designers mentioned the importance of increasing copied products. The participants stated that every product is beginning to look like every other product.
- **Effect of petrol prices:** One automotive designer mentioned the significance of increasing petrol prices. On the other hand, the automotive designer stated, that this increase is pushing the companies to invest in green vehicles.
- **Effectiveness of political decisions:** One automotive designer emphasized that the global automotive industry is changing with political decisions, especially in the American and European markets. These include safety regulations and environmental regulations.
- **Increase in personalized designs:** One automotive designer mentioned the increasing investments in personalized vehicles. This is influenced by, as the automotive designer stated, the increasing manufacturing capabilities of companies.
- **Decrease in vehicle types:** One automotive industry expert described the global automotive industry as an industry that is beginning to decrease the number of different vehicles it produces.

## Discussions on the Current Situation of the Global Automotive Industry

If the topics that can be influenced by automotive designers are observed, it is possible to see topics such as environmental concerns, developments in public transportation, increase of copied products, increase of personalized designs, and decrease of vehicle types.

The increased environmental concerns are influencing various aspects of the global automotive industry. It is both the most mentioned topics as well as a topic that concerns the automotive designers directly. Environmental concerns can be examined under several titles such as manufacturing, fuel types (engine types), vehicle sizes, vehicle types and the effects of these decisions on the outcome products.

Some of these titles include issues that the automotive designers try and solve by conceptualizing and designing during the automotive design process. In the global brands, the design departments have influence on the type and shape of the vehicle that is planned. Decisions such as designing vehicles for crowded cities or designing different types of public transportation vehicles are decisions that the automotive designers are involved in. The designs that are decided influence the materials as well as the manufacturing processes that are applied by the company. The important point is that the automotive designers, or the design departments, have influence over the solutions.

The unstable world economy has impacted many brands around the world. Some of the oldest automotive brands were saved by the support of the governments and some of the famous brands were either bought by other brands or were forced to merge with other brands. However, none of these brands, whether they were saved or if they were bought or forced to merge, closed their design departments or stopped designing. The most successful companies in the world have the largest design departments. Brands like Mercedes, BMW, Volkswagen, and Ford, companies considered as successful and big companies, have multiple design departments around the world. To continue designing new products and vehicles is the competitive edge these companies have over the competition.

### 4.7.2. The Five Year and Twenty Year Foresight for the Global Automotive Industry

The following graphs represent the participants' views of the future of the global automotive industry.

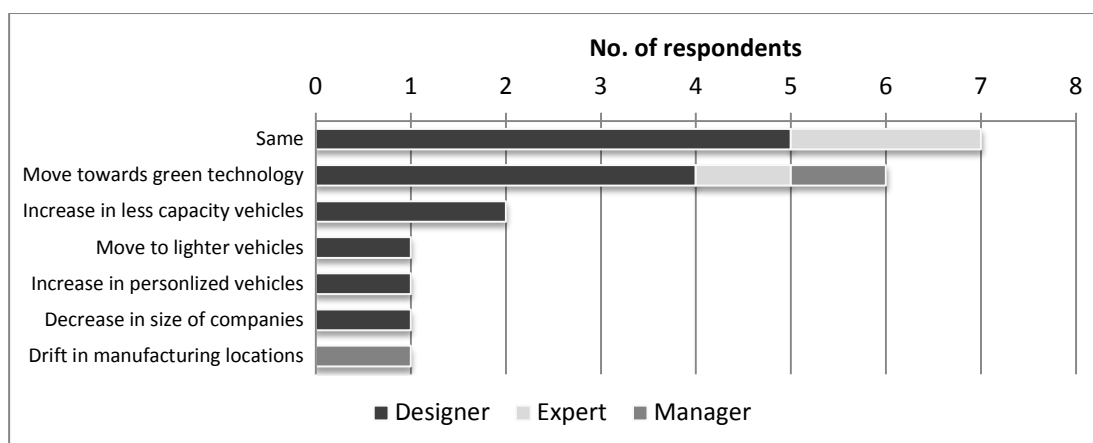
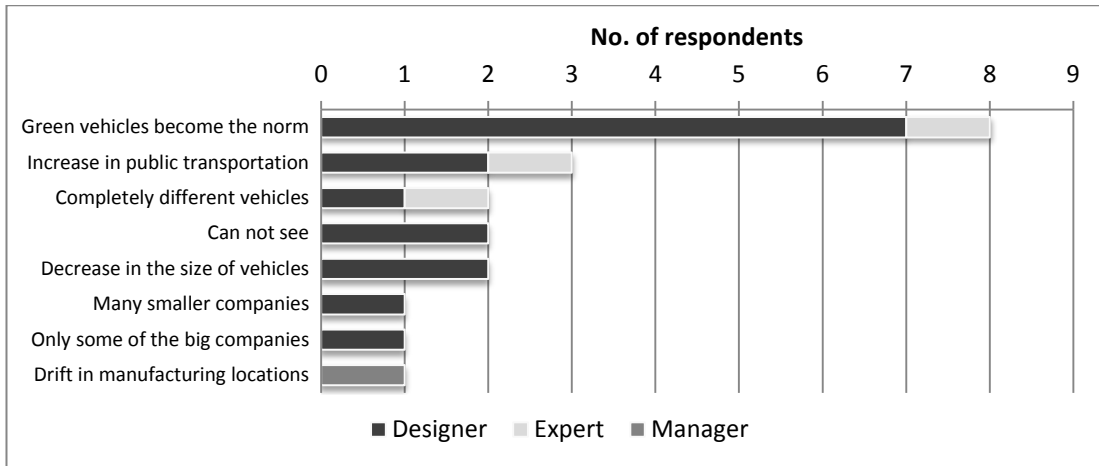


Figure 65 Five year foresight for the global automotive industry



**Figure 66 Twenty year foresight for the global automotive industry**

The majority of the participants stated that the global automotive industry will not change in the next five years, but there is a shift towards producing green technology and vehicles. Some of the participants stated that vehicles with lesser capacities may become the norm in this period. Other participants stated that vehicles, lighter than the ones currently on market, will become viable. Another participant stated that the personalized production of vehicles will increase. Another participant stated that companies will begin to get smaller and that we will begin to see smaller companies emerge. One other participant stated that the drift in manufacturing locations will move towards third-world countries to decrease manufacturing costs.

The majority of the participants stated that the green technologies and vehicles will become the norm in the next twenty years. Some of the participants stated that the increase in the production of public transportation sector and the vehicles will be observed. Some other participants stated that the industry will begin to see completely different vehicles than the ones currently on market. Other participants believe a decrease in the size of vehicles will continue in the next twenty years. Another participant stated that smaller companies will become the norm. One other participant stated that the big companies will decrease in number or mergers will leave only a handful of big companies. One other participant emphasized that the drift in manufacturing locations to achieve decreased costs will continue in this time period

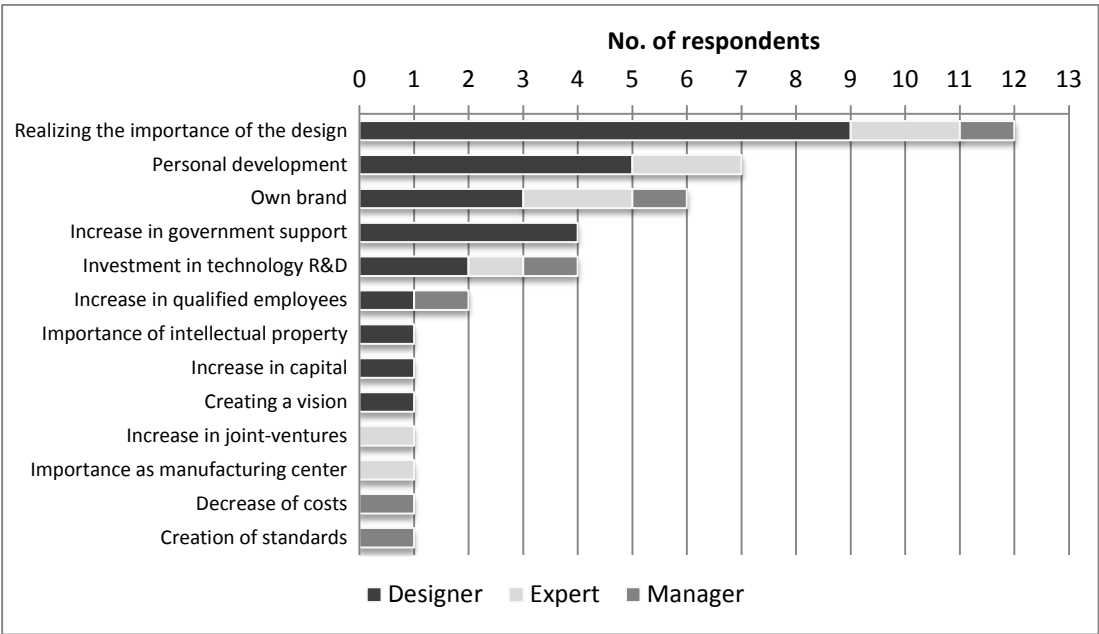
**Discussions on the Foresights for the Global Automotive Industry**

The respondents stated that no changes for the next five years of the global automotive industry, except for increased research and development on the area of green technology. This is the crucial difference from the foresight for the automotive industry in Turkey. Green technology, or environmentally responsible technologies, will have great impact in a longer period. However, the research and development needs to continue in the next five years to achieve this goal. The implications for automotive designers that are working on green products and vehicles are substantial. As the technologies that are used in the vehicles change, the understanding of automotive design, from the days of the internal combustion engine (ICE) will also change. This change will most likely influence the designs of the vehicles and give responsibility to the automotive designers to represent this change in their vehicles.

The 20 year forecast from the respondents indicates green technologies as becoming the norm in the global automotive industry. There are also views from the respondents on the increasing necessity for public transportation, which will influence the lifestyle in big cities. In the current state of the global automotive industry, public transportation vehicles employing green technologies are already being trialed. However, the adaptation of green technologies and the acceptance of widely used public transportation vehicles will take time. Turkey is a country that is facing a similar dilemma, where the necessity for increased public transportation usage in major cities is becoming increasing obligatory. Although there are automotive companies in Turkey, which are owned and operated locally, that produce public transportation vehicles, the technologies used in these vehicles are of foreign origin. On the other hand, only two of these companies that provide vehicles for the public transportation sector are employing automotive designers in Turkey.

**4.7.3. The Actions that need to be taken to improve the Success of the Automotive Industry in Turkey in the Global Automotive Industry**

The following graph depicts the participants’ views on the necessary actions that need to be taken to improve the success of the automotive industry in Turkey in the global automotive industry.



**Figure 67 Actions that need to be taken to improve the success of the automotive industry in Turkey in the global automotive industry**

The short explanations below are given in order of appearance in the graph (Figure 67), beginning from the topics that received the most mentions to the ones that received the least.

- Realizing the importance of the design:** The majority of the mentions (9 automotive designers, 2 automotive industry experts, and 1 automotive design manager) stated that the automotive companies in Turkey need to realize the importance of automotive design to compete and succeed in the global market. One automotive designer stated that ‘If they only gave our profession some more value [...] There is so much sameness and the only thing that can make a difference is design’ (109). Another automotive designer stated that ‘[...] in this automotive sector, one of our highest quality assets is our designers’ (110).



- **Personal development:** The second most mentioned (5 automotive designers, 2 automotive industry experts) topic was the need to support the personal development of automotive designers in the company to achieve global success through the development of the in-house automotive designers.
- **Own brand:** The third most mentioned (3 automotive designers, 2 automotive industry experts, and 1 automotive design manager) topic was the need to create and build Turkish brands to be successful in the global market. One automotive industry expert stated that 'As long as we keep giving the brand that we create to overseas markets, and as long as we follow these and keep doing the necessary revisions according to countries, we will increase our level' (111).
- **Increase in government support:** Four automotive designers stated that the increase in government support is a key factor in succeeding in the global market. One automotive designer stated that '[...] there should be incentives so that everybody can find the courage, as courage increases there will be multitude of innovations, with these innovations, now we can give services to the outside' (112).
- **Investment in technology R&D:** Two automotive designers, one automotive industry expert and one automotive design manager emphasized the necessity to invest in the research and development of technology to achieve success in the global market.
- **Increase in qualified employees:** One automotive designer and one automotive design manager expressed the importance of increasing the number of qualified personnel in achieving global success.
- **Importance of intellectual property:** One automotive designer mentioned the attention paid to the importance of intellectual property as a factor in achieving success in the global market.
- **Increase in capital:** One automotive designer stated that the automotive companies need to increase their capital and to invest in the automotive industry in Turkey, in various forms, to achieve global success.
- **Creating a vision:** One automotive designer described the significance of obtaining or creating a vision for the industry's products to be successful in the global arena.
- **Increase in joint-ventures:** One automotive industry expert expressed the importance joint ventures between Turkish companies and foreign companies to create investment capital for creation of global companies.
- **Importance as manufacturing center:** One automotive industry expert stated that the automotive industry in Turkey needs to accept its role as a manufacturing center for other companies and increase its importance in this role to be successful in the global market.
- **Decrease of costs:** One automotive design manager described the significance of decreasing costs of materials, workmanship, and manufacturing as the key to achieving success in the global arena.

- **Creation of standards:** One automotive design manager emphasized the requirement of creating standards in the automotive industry in Turkey to achieve recognition and success in the global industry.

#### **Discussions on the Actions That Need To Be Taken To Improve the Success of the Automotive Industry in Turkey in the Global Automotive Industry**

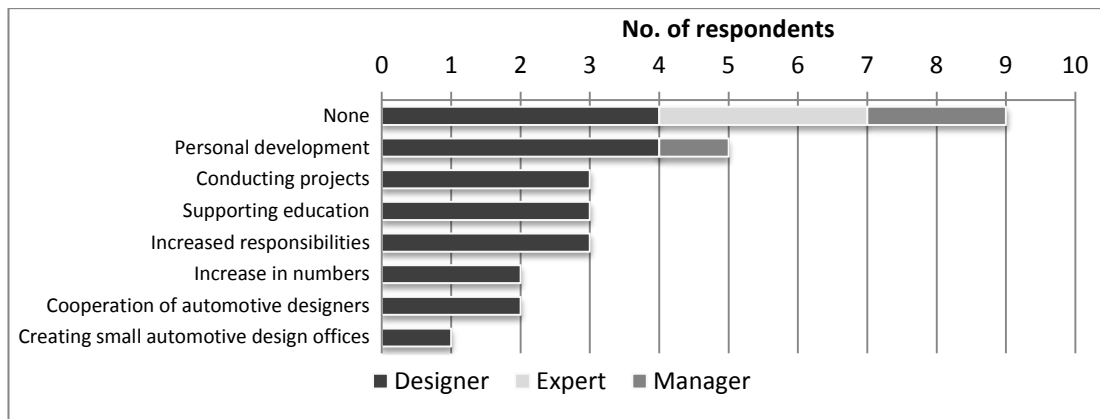
The importance of automotive designers and their abilities to create original and innovative concepts and designs have been important for the global brands. The same attention needs to be given to this profession by the automotive industry in Turkey for it to succeed in the global arena. This attention cannot be forced on to the automotive industry in Turkey, but needs to come from the realization of the need for automotive design to compete in the global market.

Some of the automotive designers, as mentioned in the some of the previous headings, see the need to participate in self-development activities. These activities can include training on various design tools, company time to work on concept projects, or the need to access literature about automotive design. These activities could be funded and supported by the company for the development of their own employees. However, as an automotive design manager stated, some companies are afraid of losing their employees to foreign companies. These companies are afraid to invest in the development of their automotive designers because of this concern. They have experiences this before and believe that investment in the development of their automotive designers can become money wasted. These companies are looking for methods to keep their automotive designers in the companies without giving them the necessary tools, control of the phases in the automotive design process and the necessary investment for development, and sometimes the necessary salaries. This creates a complicated situation where the automotive companies do not want to invest in their automotive designers because they are afraid that they might lose them and the automotive designers leave the companies because they do not receive the expected investment and support.

The creation and development of locally owned and operated brands are important for various reasons. The ability to design, the ability to conduct research and development, the ability to integrate different engineering concepts and the ability to gain from the added value is only possible without the licensing deals that the majority of the automotive industry in Turkey operates on. On the other hand, there is also the issue of brand recognition and respectability. All the countries in the world that produce their own vehicles are countries that can be considered successful countries; United States of America, Germany, France, Japan, South Korea etc. are all countries that can be considered economic powers. To be able to produce an original vehicle; design, engineer and manufacture it locally, is a very difficult, but a very respectable accomplishment. In the global automotive industry, it is possible to state that the automotive industry in Turkey has missed the opportunities in the race of internal combustion engine oriented vehicles. However, the future seems dependent on green technologies, the automotive industry in Turkey may be able to create and develop brands that can be a part of this new and developing trend.

#### **4.7.4. The Actions that Automotive Designers can take to improve the Success of the Automotive Industry in Turkey in the Global Automotive Industry**

The following graph depicts the participants' views on the actions that the automotive designers in the industry can take to improve the success of the automotive industry in Turkey in the global automotive industry.



**Figure 68 Actions that automotive designers can take to improve the success of the automotive industry in Turkey in the global automotive industry**

The short explanations below are given in order of appearance in the graph (Figure 68), beginning from the topics that received the most mentions to the ones that received the least.

- **None:** The majority of the mentions (4 automotive designers, 3 automotive industry experts, and 2 automotive design managers) stated that the automotive designer has no role in the success of the automotive industry in Turkey in the global market. One automotive designer stated that designers ‘Does not really have any assistance, these are situation that are influenced by money and politics; it is hard for them [designers] to influence these’ (113).
- **Personal development:** The second most mentioned (4 automotive designers, 1 automotive design manager) topic stated that the personal development of automotive designers would be effective in raising the automotive industry in Turkey into a more successful position in the global automotive industry.
- **Conducting projects:** Sharing the position for the third most mentioned (3 automotive designers) topic was the need of the in-house automotive designers to work on more projects to increase their knowledge and experience in automotive design to enable a more successful automotive industry in Turkey in the global market.
- **Supporting education:** Sharing the position for the third most mentioned (3 automotive designers) topic was the responsibility of the automotive designers to support the education of automotive design as much as possible. This support, as stated by the participants, would enable the graduation of better automotive designer and, therefore, achieve a better competing automotive industry in the global market.
- **Increased responsibilities:** Sharing the position for the third most mentioned (3 automotive designers) topic was the will of the automotive designers to acquire more responsibilities in the automotive design process to achieve better products for the company. The participants stated that this would carry the automotive industry in Turkey into a better position in the global automotive industry.
- **Increase in numbers:** Two automotive designers stated the importance of increasing the numbers of automotive designers in companies in Turkey. This increase, as the participants stated, would yield an increased recognition of automotive design in Turkey and that would,

hopefully, help the companies achieve better products to compete more successfully in the global market.

- **Cooperation of automotive designers:** Two automotive designers emphasized the need for the automotive designers to get together and discuss certain topics about automotive design, automotive designers, and the industry in Turkey. This cooperation would increase the awareness of automotive design in Turkey and that would, eventually, help the companies achieve better products to compete more successfully in the global industry. One automotive designer stated ‘[...] if there are people who have taken a role in this, gathered experiences, in certain projects, certain levels or done everything, they may meet under certain circumstances and achieve something’ (114).
- **Creating small automotive design offices:** One automotive designer expressed the significance of increasing the number of small design offices, hence increasing the number of automotive designers that can be employed and, as the participants stated, would increase the number of outsourced projects. This would in return increase the recognition of the profession and the awareness of the automotive companies. Therefore, the companies will employ more automotive designers or outsource their projects to these offices and achieve better products that will catapult the automotive industry in Turkey to a better place in the global arena.

#### **Discussions on the Actions That the Automotive Designers Can Take To Improve the Success of the Automotive Industry in Turkey in the Global Automotive Industry**

Although most of the respondents stated that the automotive designer cannot influence this success, there are topics such as the need of the automotive designers to work on more projects, the support from the automotive designer for education of automotive design, and the desire for increased responsibility in the automotive design process. All of these topics are important factors that can influence the success of the automotive industry in Turkey in the global automotive industry.

It is interesting to observe the statements of the majority of the respondents on this matter. However, it is not clear why the majority of the respondents view the automotive designers as ineffective in improving the success of the automotive industry in Turkey in the global automotive industry. However, the observations of the industry and the interviews with the respondents show that the automotive designer in the automotive industry in Turkey does not have the power to influence the managerial decisions in the companies. For this reason, it is possible to state that the automotive designers may not be able to influence the success of the industry from inside the companies. On the other hand, the automotive designer may be able to influence a change or achieve an improvement by supporting the education (as instructors) in universities and/or unite and cooperate on certain matters as automotive designers in Turkey.

Automotive designers could teach studio classes in universities. Programs towards the education of automotive design can be implemented and progressed in Turkey with the help of these professional.

On the other hand, the cooperation of automotive designers in Turkey can act as a stronger method for presenting their problems as a united group. Although there is a platform for industrial designers in Turkey (ETMK), a more specialized group can also be effective towards the industry.

These types of actions that are not related to the companies could influence and improve the success of the automotive industry in the long run.

## CHAPTER 5

### CONCLUSION

This study investigated the in-house automotive designer roles in the automotive industry in Turkey through a literature review and a field study. The field study was focused on the parties involved in the automotive industry in Turkey; the in-house automotive designers, the automotive design managers, and the automotive industry experts.

There are various studies made about the roles of designers but, this study tried to find answers to the research questions, while presenting an up-to-date and in-depth analysis of role of the in-house automotive designer, with the relevant parties.

With this study, the roles of in-house automotive designers in Turkey are studied for the first time in a comprehensive way. The whole population of in-house automotive designers was represented in the study, and the data gathered from the interviews with these automotive designers, the sample of automotive design managers and the sample of automotive industry experts proved to be insightful in terms of analyzing problematic areas and the synthesizing of solutions.

#### 5.1. Revisiting the Research Questions

The study began with five research questions that were formulated to find and understand the roles of in-house automotive designers working in the automotive industry in Turkey. With these questions, it will be possible to examine the current status of in-house automotive designers in the automotive industry in Turkey as well as provide insight into global automotive industry success strategies, and provide recommendations for the success through automotive design for the companies in the automotive industry in Turkey.

##### 5.1.1. What are the visions and goals of the automotive industry in Turkey?

The visions and goals of the automotive industry in Turkey were prepared with the inputs from the Special Automotive Group (established with the 9<sup>th</sup> Development Plan), Turkish Statistical Institute, Ministry of Economy, The International Organization of Motor Vehicle Manufacturers, European Automobile Manufacturers' Association, Automotive Manufacturers Association, and were represented in the 2010-2014 Strategic Plan, prepared by the Ministry of Science, Industry and Technology.

The visions, goals, and aims of the automotive industry in Turkey, and the actions to achieve the aims, were examined, with the five areas of development, in the literature review (Section 2.3).

The table (Table 17) represents the comparison between the actions from the strategic plan (Section 2.3) to the findings from the field study (Sections 1.1.1, 4.6.2, 4.6.3, and 4.7.3).

**Table 17 Actions from the strategic plan compared to the findings from the field study**

<b>Actions to achieve the vision and goal in the strategy plan</b>	<b>Findings from the field study relating to the visions and goals of the industry</b>
Testing centers and laboratories within the framework of University-Industry Cooperation	Improvements in universities
Vehicle concept design and product design support Increase in R&D and original technologies	Realization of the importance of design Creation of original vehicles Better designs in the industry Establishing and supporting of branding Investment in technology R&D Increase in the number of projects Increase in the number of design offices
Increase production of raw materials Support the use of eco-friendly vehicles Increase in the use of recycled materials Promote the use of alternative fuels (CNG and electric)	Support for green technology Socio-cultural improvements
Government services for the automotive industry Increasing market surveillance and supervision Increase the usage of car rentals and locally produces vehicles in government Removal of end-of-life vehicles from roads Giving support to organized industrial zones in terms of automotive related production Supporting the cooperation of companies in the supply chain	Support for the automotive industry becoming governmental policy Cooperation of companies on projects before competition Increasing investment in the sector
The development of transport infrastructure in and around seaports	Increasing investment in the sector
Increase the expansions towards the foreign market The growth of the internal market	Increasing investment in the sector
Training of qualified personnel	Personal development of personnel

The topics in the right hand column of the table were gathered from the statements made by the participants that are relevant to the actions from the strategic plan. The overlap between the two columns show that the findings from the field study support the visions and goals set by the strategic plan to a great extent.

However, it is also important to see the statements defining the visions and goals, from the findings, and their categorizations.

The table (Table 18) categorizes the statements related to the visions and goals of the participants according to the parties that have the power and ability to achieve them. Some of the statements from the findings do not seem to be mentioned in the visions and goals from the strategic plan of the industry. Topics from the findings such as the need to correctly understand the meaning of design, cooperation between automotive designers, right of signature for the automotive designers, and the education of automotive design were not observed in the visions and goals, and the aims and actions, of the strategic plan.

**Table 18 Categorization of the statements related to the vision and goals from the findings of the field study**

<b>Statements relating to the visions and goals of the industry</b>	<b>Categorization of topics according to their facilitators</b>
Investment in technology R&D Understanding of design Realization of the importance of design Increase in the number of projects Cooperation of companies on projects before competition	<b>Requires the decisions and support of the industry and/or companies</b>
Establishing and supporting of branding Creation of original vehicles	<b>Achievable by the automotive designers and the industry and/or companies</b>
Cooperation between automotive designers Increase in the number of design offices	<b>Achievable by the automotive designers</b>
Education of design	<b>Responsibility of academic institutions</b>
Improvements in universities	<b>Requires the cooperation of the industry and/or companies, and the academic institutions</b>
Support for green technology Increasing investment in the sector Personal development of personnel	<b>Achievable by the industry and/or companies, and governmental regulations</b>
Right of signature	<b>Requires cooperation between designers and government</b>
Socio-cultural improvements	<b>Achievable by the academic institutions and the government</b>
Support for the automotive industry becoming governmental policy	<b>Requires governmental regulations</b>

**5.1.2. What is/are the role(s) of the in-house automotive designer in the automotive industry in Turkey?**

There are four companies in the automotive industry in Turkey that are currently employing automotive designers. These companies can also be divided amongst each other in relation their business practices that may also concern in-house automotive designers. Three of these companies are manufacturing vehicles under licensing agreements, from their joint-venture firms or owner firms. One of these firms, on the other hand, has its own brands, and produces vehicles of their own designs and engineering processes. However, the field study shows that these business practices; working on licensed products or joint-ventures, do not seem to have a strong influence on the automotive design practices of the companies or on the roles of the in-house automotive designers.

The findings from the field study show that the automotive designers in the industry have a multitude of roles. The interesting point is that it is not possible to divide the companies according to the roles that are defined by the participants as it is possible to see a mixture of responses from automotive designers working in the same company. Therefore, it is not possible to state that the companies have different understandings in terms of the role of design or the role of the automotive designer.

The role of in-house automotive designers are derived from the field study according to the expectations, responsibilities, tasks and other indicators (Section 4.4) that define them in the table (Table 19).

**Table 19 Current roles of in-house automotive designers in Turkey**

<b>The expectations, responsibilities, tasks etc. from in-house automotive designers in Turkey</b>	<b>The roles of in-house automotive designers in Turkey</b>
Creator of concepts, aesthetics, styling, models, and conductor of research	<b>Designer as creator</b>
Support for other departments - Increasing sales, customer satisfaction, quality, added value and decreasing cost	<b>Designer as part of a team</b>
Increasing usability, and integrating ergonomics	<b>Designer as expressing user understanding</b>
Leading the design process	<b>Designer as NPD sub-process leader</b>
Setting the vision for products, brand image of company	<b>Designer as strategy definer</b>

A definitive role for the automotive designer was not observed for the automotive companies or the automotive industry. The various roles identified here can be perceived throughout the history of the roles of the designer; from the 1950s to the 1990s. However, the automotive industry in Turkey still does not see the automotive designers as an innovation source, or the NPD process leader.

### **5.1.3. What role does automotive design and the in-house automotive designer play in reaching the visions and goals of the automotive industry in Turkey?**

The visions and goals of the automotive industry in Turkey were explained in the first question, and the roles of the in-house automotive designer were explained in the second question. However, the influences of these roles on the automotive industry need further explanation.

- **Designer as creator:** The creation of certain functions, such as styling, modeling etc., are stated to be used in the industry, but the freedom and time allowed for these functions are very limited, and underappreciated, by the companies.
- **Designer as part of a team:** The automotive designer is viewed as part of a team, but this team is situated under other departments, such as engineering or R&D. The automotive designers do not have control over the automotive design process while working under these departments.
- **Designer as expressing user understanding:** The automotive designers are expected to work on subjects such as usability and ergonomics, but there are separate ergonomics departments under the engineering departments in the same companies. These departments employ industrial designers that conduct ergonomic and usability design without becoming a part of the automotive design team or the automotive design process.



This raises questions on the effectiveness of the decisions that the automotive designers make.

- **Designer as NPD sub-process leader:** The product development process includes many sub-processes; the design process, the engineering process, the testing process, and others depending on the company. In all of the firms, some of the automotive designers see themselves as the automotive design process leader, but in all of the four companies, the automotive design managers are not automotive designers, and have no education in any field of design.
- **Designer as strategy definer:** The automotive designer is seen as a strategy definer, setting visions for the products and the brand image. However, in all of the companies, the process that begins with the decision to make a vehicle to the stage where the design brief is handed down to the automotive design team does not include any person from the automotive design team, or the automotive design manager.

In the current situation, the automotive designers are not observed to play a crucial role in the visions and goals of the automotive industry. The current emphasis in the industry today is not on design, but on increasing engineering and R&D capability, and increasing the number of export vehicles.

According to the roles of the automotive designers in the automotive industry and the expectations of the automotive industry from these automotive designers, it is possible to state that the managers are satisfied with the current roles of the automotive designers, but some of them realize that an improvement in the design function is necessary to compete in the global market.

As most of the major companies in Turkey, manufacture and market their vehicles under licensing deals and/or for other global brands, it is not possible for them to move into design, production and marketing of original/unique vehicles. For these companies, the role of design and the role of the automotive designer are coherent with their expected functions.

In terms of a future perspective, the strategy plan, where the visions and goals are defined, set in motion for the development and improvement of the automotive industry in Turkey is rather new (published in 2011) and it will take time to implement the necessary changes for the plan to become operational. However, the categorization of the visions and goals, which are relevant to the roles of automotive designers, derived from the statements of the participants (Section 5.1.1), can define the potential roles that automotive design and the automotive designers may have to play to achieve the visions and goals of the automotive industry in Turkey.

**Table 20 Roles of the in-house automotive designer according to statements about the visions and goals of the industry**

Statements relating to the visions and goals of the industry	Categorization of topics according to their facilitators	Roles of automotive designer according to the visions and goals
Establishing and supporting of branding	Achievable by the automotive designers and the industry and/or companies	<b>Designer as strategy definer</b>
Creation of original vehicles		<b>Designer as creator</b>

From the statements of the participants, it is observed that to achieve the visions and goals the automotive designers have to play two roles. The researcher already identified five roles from the findings in the field study. Two of these roles, designer as a creator and designer as strategy definer,

correspondence with the definition of role of automotive designers from the statements relating to the visions and goals of the industry. However, there is no unification in the industry, or even in the companies, about the roles of the automotive designers (Section 5.1.2). Attributing only these two roles into the company structures may help the industry achieve the stated visions and goals and embrace design and the automotive designer into product development process.

#### **5.1.4. What are the existing strategies to achieve success through industrial design in the industry in general and automotive industry specifically?**

The role of designer in the industry is a widely studied subject. However, most of these studies conclude with a similar suggestion or observation. The role of design, and the role of designer, needs to become more than a crucial part of the company structure; needs to become the innovator, the enabler in the company.

This is observed in various companies, including global companies, around the world. The importance of automotive design and the automotive designer is rising, and in some companies reaching the status of the NPD process leader. Automotive designers are being viewed differently, no as just regular employees of the company or structured under other departments. They are being seen as decision makers, vision setters and brand image builders for their companies, working from their design departments.

Automotive designers need to be involved in the decision making process for the visions and missions of the company as well as the products for production. One of the prominent approaches is the implementation of design thinking in companies. This method enables the company; the general manager/CEO, the automotive design managers, the automotive designers and other participants of the company to apply methods of problem solving associated with automotive designers to areas outside design.

There are also various specific subjects mentioned below, both in the general industry and the automotive industry, which can also be accepted as guidelines for successful design integration. These topics, derived from the literature review in chapter 2, form the foundations of the strategies for success through industrial design.

##### **Understanding of design and designer**

Design is not only understood, but it is a part of the culture and the language of daily life. It is accepted as an important factor, not only for companies and for their products, but for every decision a person makes. The creator of design, the designer, is equally valued and celebrated. The decisions that a designer makes influences many people through the products and services that the companies put out (Section 2.5).

##### **Expectations from design and designer**

Design is expected to provide solutions and innovations for services and products provided by industry. The designer, designing these services and products, explores and thinks about the most effective and efficient way of solving the problems and creating innovations for companies. Hence, the companies are beginning to expect design to lead them into success, differentiate their companies from the competition, increase added value in their products, and display their quality. Similarly, the designers are expected to conduct these feats by using design methods and design tools, provided to them by their education and companies (Section 2.7).

##### **Approach towards design and designer**

The companies are beginning to approach design as a very valuable asset. The difference that this asset makes is celebrated by the most important brands and companies of today. Hence, it is

important for the companies to approach towards design in a very mindful and attentive manner. Similarly, the designers are also valued and are shown great respect for their achievements in carrying their companies towards success (Section 2.7).

#### **Position of design and designer**

Design, in today's global and successful companies, is seen at least as important as engineering, R&D, marketing, or sales in the company structure. The designers are positioned so that they receive the required tools and other necessities to continually achieve success and keep their companies competitive and in leader positions (Sections 2.4, 2.5, 2.7).

#### **Investment in design and designer**

The investment in design, both figuratively and literally, is an important topic for global companies that compete in the global market. Design, in itself, is a function, but the designers have necessities, such as the conducting of a successful concept development phase or certain design tools to complete tasks that take understanding, time, and require monetary investment. This also includes the investment of importance towards the formation of the designer, which influences above mentioned topics (Sections 2.4, 2.5, 2.7, 2.8).

#### **Design manager**

Design managers, as the name implies, are managers that are in the position of leading their designers and managing their requirements and deadlines. The design managers in many successful companies, including the automotive sector, are professionals from a design background. The design managers have the role of protecting and defending their designers and their ideas, as well as supporting and evaluating their designers. In all of the successful automotive companies, the design managers have a place in the decision making progress for the vision of the company, for the brand in general, and for the products (Section 2.6).

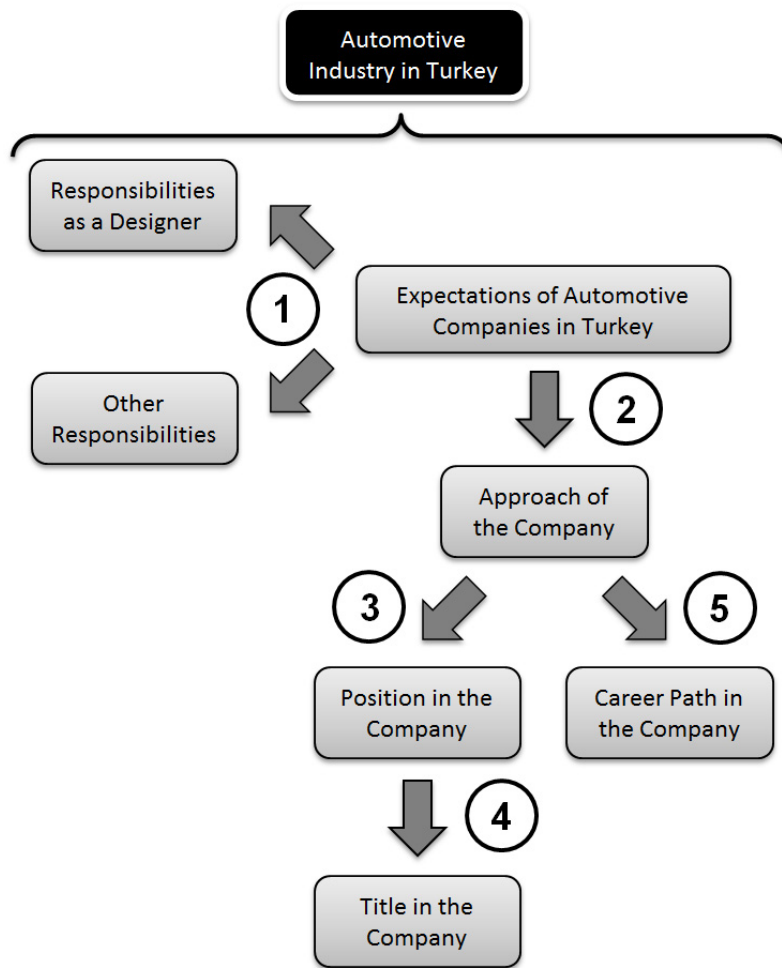
In summarizing the above topics, the existing strategies to achieve success from industrial design can be listed as:

- The industry acknowledging and promoting design and the designer
- Having the correct expectations from design and the designer
- Approaching design and the designer with value and attention
- Positioning design and the designer correctly in the hierarchy
- Investing in design and the designer
- Investing in the correct design manager

These strategies need to be integrated into the NPD process to achieve success through industrial design, both in the general industry and the global automotive industry.

#### **5.1.5. What can be recommended to the companies in the automotive industry in Turkey to achieve success through automotive design and in-house automotive designers?**

The findings were examined and discussed under several headings to understand automotive design and the in-house automotive designer in the automotive industry in Turkey. Although the headings were presented separately under the findings section, they are very connected and influenced by each other. These influences are represented by the connections displayed in the Figure 69.



**Figure 69 Relation diagram of the factors that influence the automotive designers in the automotive industry in Turkey**

The grey labels represent the important topics that influence the automotive designers' situation in the automotive industry in Turkey. The dark grey arrows and the markings that have numbers written on them represent the critical connections between the specific boxes. These critical connections are crucial for the automotive designer and will be discussed in the later parts of this heading.

The "Automotive Industry in Turkey" label is representative of the companies that employ in-house automotive designers in Turkey. The "Expectations of Automotive Companies in Turkey" label signifies the expectations of the management, automotive design manager or other managerial people from automotive design and the automotive designers. The expectations heading is divided into three labels. One of these is the group that consists of the responsibilities; "Responsibilities as a Designer", where the expectations from the automotive designers are changed over to their responsibilities during the automotive design process, and the "Other Responsibilities"; tasks given to the design outside the scope of the automotive design process.

The next label is the "Approach of the Company" that signifies the views and thoughts of the management, automotive design manager or other managerial people about the automotive designers. The approaches of the companies are greatly influenced by their expectations of the automotive designers, and automotive design in general. The "Approach of the Company" label

influences two other labels. One of these is the automotive designer's "Position in the Company". It should be noted that this position is not only a physical position, but also the importance attributed by the company to the automotive designers. The positions of the automotive designers are greatly influenced with the expectations from them and with the approach of the company towards them. The label connected to this label is the automotive designer's "Title in the company", which is defined by the position of the automotive designer in the company. The title ascribed to the in-house automotive designer varies from company to company and even from person to person. The last label is the automotive designer's "Career Path in the Company". This heading is greatly influenced by the approach of the company, but not by the position of the automotive designer in the company.

To better explain the diagram, the connections, from this point on called steps, are represented in the diagram (Figure 69) are explained and recommendations are given below.

**Step 1: The influence of the expectations of automotive companies in Turkey on the responsibilities of the automotive designers**

The responsibilities that the automotive designers carry in the automotive companies in Turkey do not overlap with the ideal responsibilities of the automotive designers from the findings. The main cause for this situation seems to be the attempt of re-defining the automotive designers by the automotive industry in Turkey.

However, the companies and the automotive industry as a whole may benefit from expecting automotive design, and their automotive designers, to carry them to success, both in terms of brand recognition and financial profit. If the automotive industry wants to achieve global competitiveness, as the visions and goals suggest, then the expectations from design, and the automotive designer, needs to be re-thought. This change could bring forth the responsibilities that are related to the automotive design process, and may increase the time spent on them.

The companies, the industry, may expect design, and the automotive designers, to become the innovators, the 'enablers', in their companies. The companies might stop expecting various tasks and stop giving various responsibilities to automotive designer that are outside the professional obligations. With this approach, the automotive designers could focus on research, innovations, ideation, concept generation, and modeling.

**Step 2: The influence of the expectations of automotive companies in Turkey on the approach of the companies towards the automotive designers**

The approach towards automotive designers is deeply influenced by the expectations of the companies from automotive design and the automotive designers. What the companies expect from automotive designers determines their approach towards automotive designers.

The approach of the companies could be more rewarding if methods are formulated to raise design into a visionary aspect of the company's future. Another important aspect of the approach is the integration of design culture and language into the corporate structure. Automotive designers are professionals with their own cultural aspects and with their own creative languages. The companies, and the industry, could embrace this culture and language rather than see it as an extension of another profession or as a trivial feature. The industry may taste success with the right approach towards implementing design into the company vision, and with the right approach it can compete with the global brands in the global market.

### **Step 3: The effects of the approach towards automotive designers on the positioning of the automotive designers in the companies**

The position of the automotive designer in the company, both in terms of the automotive design process and both departmental, and the title that the automotive designer receives from this position is important in terms of understanding and implementing the automotive designer in a successful manner. However, the approach of the companies towards the automotive designers have an effect on positioning and mistitling of the automotive designers in the automotive companies in Turkey.

Because the automotive designers are approached as engineers, working under engineering departments, they may benefit greatly from having their own departments and their own working conditions, arranged according to their needs, in order to bring their intended functions to the company. This positioning would also benefit from extending to the hierarchy of the company; the automotive designers would be greatly motivated by having the same rights as any other valuable member of the product development team.

The other important positioning of the automotive designer, or the design team, may take place in the automotive design process. The automotive designers should be able control their own design process, without interventions from other departments. This change could influence their roles in the companies, but would require the company to approach the automotive designers as important and indispensable participants of the automotive design process.

Another important position for the automotive designer that the automotive companies in Turkey could benefit greatly from is the automotive design manager, or the chief designer. The companies may invest in automotive design managers who are automotive designers to understand and communicate with the automotive designer teams. The culture and language of the automotive designer is very complex and varied. The automotive design manager should be able to speak the language of the management, and be able to translate the automotive designer language into the management language of the corporate environment. The automotive design manager should be able to discuss and argue with other managers or the general manager/CEO of the company, and may have to sacrifice on certain aspects of the design, but this decision should only come from a manager with the profession of an automotive designer that understands other automotive designers. Automotive designers are the only creative people in the company and they would benefit from an automotive designer to represent this creativity in true-to-form fashion to the managers of other departments or to the general manager/CEO.

### **Step 4: The connection between the positioning of automotive designers in the companies and the titles given to automotive designers in the automotive industry**

The title of the automotive designer in the company is influenced from the position, and thus the expectations, that the company sees fit for the automotive designer. Furthermore, as observed from the automotive designer participants, the title that the automotive designer receives in the company influences the future “positions” of that automotive designer in the company.

The title used in this thesis, the “automotive designer”, is one of many titles used for the professional working in the field. There are various other titles, some unrelated to the profession, used to define these professional. The approach of the companies, and consequently the positioning of the automotive designers, influence the titles used by other people to define the automotive designers.

The automotive designers, hence the automotive companies, would greatly benefit from respecting the automotive designers’ right to be able to use their titles. However, the managers could help achieve this by separating the engineers from the designers. Another important discussion is raised

by the engineers using the word design and designer for themselves. This creates a problem in defining automotive design and the automotive designer and causes difficulties in giving titles of 'design' and 'designer' to the right people. This could be solved, by the approach of the companies, and by correctly positioning automotive design in the companies, and by calling 'engineering' and the 'engineers' with their appropriate titles.

#### **Step 5: The connection between the approaches of the companies with the career path of the automotive designers in the companies**

The approach of the companies, and the positioning of automotive designers in the companies, influences the automotive designers' career paths. The automotive designers, like many other employees of the company, can be motivated immensely by being able to receive promotions from their automotive design managers, in accordance with their performances, ideas, and other evaluations. This could enable the automotive designer to rise to other degree levels, such as automotive design manager or chief designer, similarly to the other professions in the company, such as the engineers.

All of the above steps may be implemented separately, and even then, would provide great benefit to the automotive design in companies and the in-house automotive designers. However, the steps were designed to be implemented one-by-one, beginning with step 1. The most important factor lies in the expectations of the companies. If the first step is achieved, the other steps following could be implemented into the company much more effectively and easily.

#### **5.2. Limitations of the Study**

Although the field study was conducted in a successful manner, several limitations were encountered during the course of the study that needs mentioning.

The first limitation was related to the terminology used in the review of terms. The terms that were reviewed; automotive industry, automotive design, and automotive designer, are not clearly and unanimously defined terms. The researcher had to put forward original definitions that were synthesized from the available data on these terms from various sources.

The second limitation was related to the amount of academic literature on the subject of automotive design and roles of automotive designers, especially literature from Asian countries. This limitation was even bigger in terms of local academic literature on the subject of automotive design and the roles of automotive designers.

The third limitation was related to the field work. The automotive industry is a very secretive industry because of the amount of competition involved. This created problems during the visits to some of the companies as the researcher was not allowed to observe the whole process and had to rely on statements of the interviewees.

#### **5.3. Further Studies**

This study paves the way for further studies by touching on points that may be of interest to automotive designers, automotive industry participants, and design educators. Several of these suggestions for further studies are given below.

A study on the industrial designers that are working in the automotive industry, but that are not working as automotive designers may show interesting findings. The reasons behind this choice and

how their profession influences the decisions they make, and how the company views them relating to their professions may provide insightful outcomes.

The practice of outsourcing of automotive design, both in the global automotive industry and in the automotive industry in Turkey, may provide interesting research topics. Although several outcomes about the practice of outsourcing in the companies in this research were touched upon, a more in-depth analysis of these practices and how these influence the automotive design process, the roles of in-house automotive designers, and the outsourcing automotive designers may provide important and valuable data.

The education of automotive design is another subject that needs to be examined. In the current situation of automotive design in Turkey, such a study may pave the way for an in-depth analysis and connections between the education of automotive design and the automotive designers in Turkey.

This study would also benefit from a follow-up study in 2015, after the strategic plan for the automotive industry is expected to be completed.



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## APPENDIX A

### INFORMATION REQUEST LETTER

#### **Turkish Original**

Sayın .....,

Orta Doğu Teknik Üniversitesi Endüstri Ürünleri Tasarımı Bölümünde doktora öğrencisiyim. Yrd. Doç. Dr. Fatma Korkut'un danışmanlığında yürüttüğüm doktora tezimde Türkiye'de otomotiv endüstrisinde çalışan endüstriyel tasarımcıların rollerini araştırıyorum. Bu konudaki bilgilerinizden ve tecrübelerinizden yararlanmak için sizinle yaklaşık bir saatlik bir görüşme yapmak istiyorum. Görüşme sırasında anlattıklarınızı yalnızca bilimsel amaçlarla kullanacağımı ve siz izin vermedikçe kimliğinizle ilgili bilgileri saklı tutacağımı belirtmek isterim.

Görüşme yapmayı kabul ederseniz, sizin için uygun olan bir tarih saptamak üzere sizi telefonla arayacağım. Araştırmama yapacağınız katkının gerçekten önemli olduğuna inanıyorum; bu konuda destek verebilerseniz çok sevinirim.

Saygılarımla,  
Barış Yazıcı  
E-posta: onehate@gmail.com  
Tel: 0533 622 61 28

Danışman bilgileri:  
Yrd. Doç. Dr. Fatma Korkut  
ODTÜ Endüstri Ürünleri Tasarımı Bölümü  
İnönü Bulvarı 06531 Ankara  
E-posta: korkut@metu.edu.tr

#### **English Translation**

Dear .....,

I am a Ph.D. student at the Industrial Design Department in Middle East Technical University. I am researching the roles of the in-house automotive designers working in the automotive industry in Turkey with the supervision of my advisor Assist. Prof. Dr. Fatma Korkut. I would like to conduct an hour long interview with you, to gain your insights and experiences regarding this subject. I would like to emphasize that the interviews will be only used in scientific terms and will be held confidential unless you authorize otherwise.

If you accept, I would like to call you to arrange an appointment at a time that is suitable for you. I believe that the input provided by you will be invaluable to the study and would appreciate your support greatly.

Best Regards,  
Barış Yazıcı  
E-mail: onehate@gmail.com  
Tel: 0533 622 61 28

Advisor Information:  
Assist. Prof. Dr. Fatma Korkut  
METU Industrial Design Department  
İnönü Bulvarı 06531 Ankara  
E-mail: korkut@metu.edu.tr

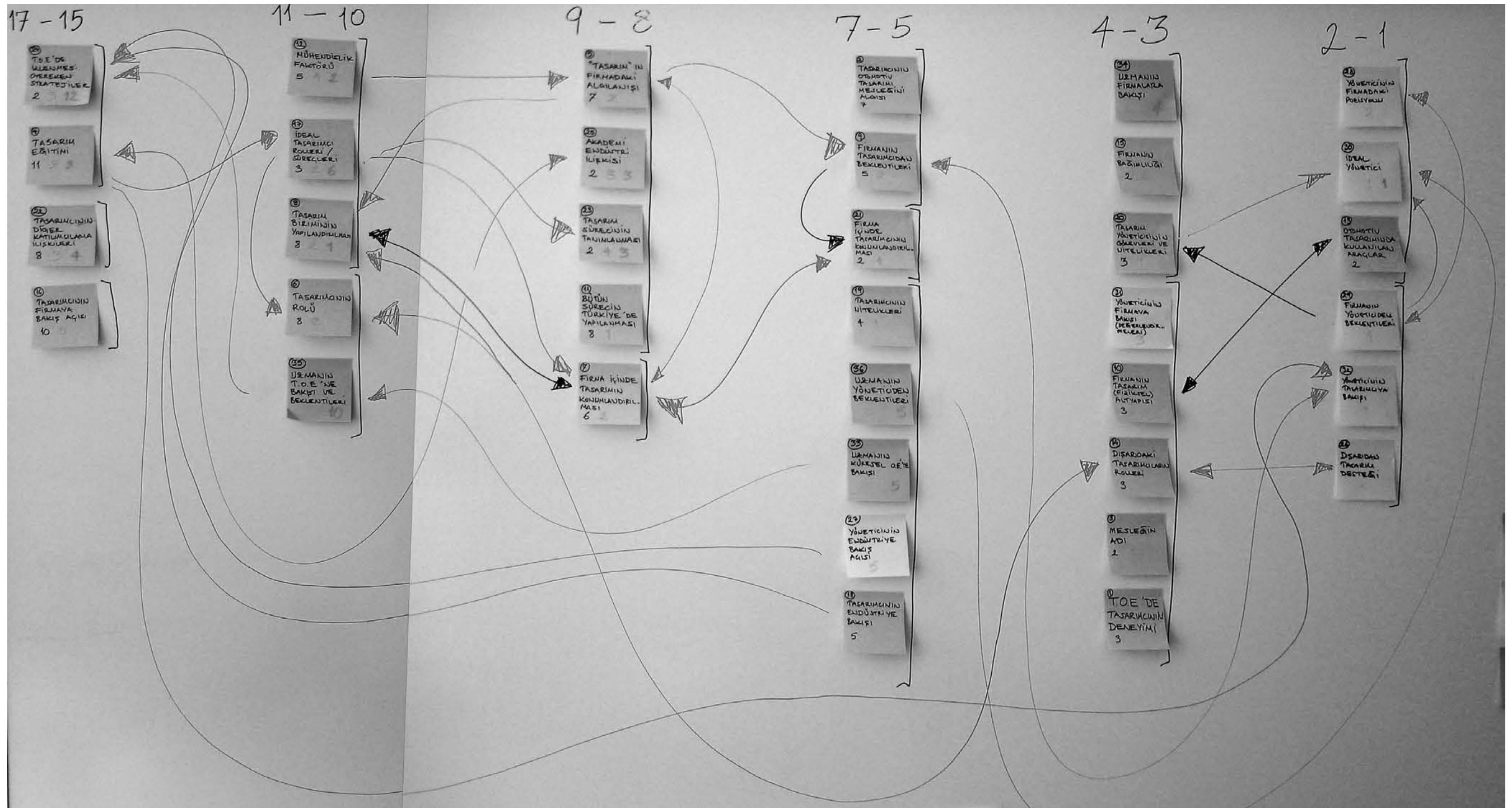
## APPENDIX B

### COMPARISON TABLE OF PILOT STUDY QUESTIONS

Key Questions and Sub-Key Questions What are the visions and goals of the Turkish automotive industry?	Designer Pilot study Questions	Manager Pilot study Questions	Expert Pilot study Questions
<p>What are the visions and goals of the Turkish automotive industry?</p> <p><i>What part does design and the industrial designer play in reaching the visions and goals of the Turkish automotive industry?</i></p>	<p>4.1. Türk otomotiv endüstrisinin mevcut durumunu, genel olarak, nasıl değerlendiriyorsunuz? (başarılı, başarısız, ilerici, tutucu, koruyucu, kopyacı)</p> <p>4.2. Sıze Türk otomotiv endüstrisinin gelişmesi, ilerlemesi için neler yapılmalı? (eğitim, yatırım, destek, istek, risk, inanç, özevi, politika vs.)</p> <p>4.4. Türk otomotiv endüstrisini kısa ve uzun vadede nasıl görüyorsunuz?</p> <p>3.1. Firmamızda "tasarım" denince ne anlaşılıyor?</p> <p>3.2. Firmamızın otomotiv tasarımına yaklaşımı nasıl? (Amerika ve Avrupa ülkelerine kıyaslanabilir)</p> <p>3.8. Firmamızın, otomotiv tasarımını olarak, sizden beklentileri neler? (tasarımcıya bakış açısı olarak)</p> <p>2.1. Hiyalinizdeki otomotiv tasarımcı nasıl? -Siz, buna ulaşabildiğinizi düşünüyor musunuz? -Kilit noktalar neler?</p> <p>4.3. Sıze Türk otomotiv endüstrisinin gelişmesi, ilerlemesi için otomotiv tasarımcıları nasıl konumlandırılmalı ve hangi görevleri almalı?</p> <p>3.3. Firmamız bünyesinde tasarımcıların bağlı olduğu bölüm veya birim hangisi? (Basamakları sor)</p> <p>3.4. Firmamız bünyesinde tasarım yapıyor mu? (Orijinal ürün tasarımı, full-body tasarımı) -Ne tür tasarımlar yapıyor? (Fikir, Mühendislik, Tekstil vs.)</p> <p>3.5. Firmamızda tasarım süreci nasıl gelişiyor? (Tüm süreç ve iştirakçiler)</p> <p>3.6. Tasarım sürecine kimler katılıyor? (tasarımcılar, mühendisler, pazarlama vs.)</p> <p>3.9. Firma içindeki görevlerinizi detaylandırabilir misiniz? (planlama, fikir, araştırma, planlama, geliştirme, eskiz, bilgisayarda modelleme, teknik çizim, 3D, malzeme seçimi, üretim vs.)</p> <p>3.7. Endüstriyel tasarımcı, tasarım sürecinin, hangi bölümünde/bölmelerinde yer alıyor?</p>	<p>4.1. Türk otomotiv endüstrisinin mevcut durumunu, genel olarak, nasıl değerlendiriyorsunuz? (başarılı, başarısız, ilerici, tutucu, koruyucu, modern, yatırımcı, risk alabilen, parazit, kopyacı)</p> <p>4.2. Sıze Türk otomotiv endüstrisinin gelişmesi, ilerlemesi için neler yapılmalı? (eğitim, yatırım, destek, istek, risk, inanç, özevi, politika vs.)</p> <p>4.4. Türk otomotiv endüstrisini kısa ve uzun vadede nasıl görüyorsunuz?</p> <p>3.1. Firmamızın otomotiv tasarımına yaklaşımı nasıl? (Amerika ve Avrupa ülkelerine kıyaslanabilir)</p> <p>3.2. Firmamızın otomotiv tasarımına yaklaşımı nasıl? (Amerika ve Avrupa ülkelerine kıyaslanabilir)</p> <p>3.8. Firmamızın, otomotiv tasarımını olarak, sizden beklentileri neler? (Sorumluluklar, yetkiler vs.)</p> <p>2.1. Hiyalinizdeki otomotiv tasarımcı nasıl? -Ulaşmak için neler yapılmalı? -Yurt dışında örneklerini inceleme fırsatınız oldu mu? (Orijinal ürün tasarımı, full-body tasarımı) -Ne tür tasarımlar yapıyor? (Fikir, Mühendislik, Tekstil vs.)</p> <p>3.3. Firmamız bünyesinde tasarım yapıyor mu? (Orijinal ürün tasarımı, full-body tasarımı) -Ne tür tasarımlar yapıyor? (Fikir, Mühendislik, Tekstil vs.)</p> <p>3.4. Firmamızda tasarım süreci nasıl gelişiyor? (Tüm süreç ve iştirakçiler)</p> <p>3.5. Bu süreçte kimler katılıyor? (tasarımcılar, mühendisler, vs.)</p> <p>3.6. Endüstriyel tasarımcı bu sürecin hangi bölümünde/bölmelerinde yer alıyor?</p> <p>3.7. Firmamızın otomotiv tasarımcı olarak görevlerinizi biraz detaylandırabilir misiniz?</p> <p>3.10. Tasarım birimi yöneticisi olarak, otomotiv tasarımcıların beklentileriniz nelerdir? -Bahsettiğinizin dışında görevlendirmeleri oluyor mu?</p> <p>4.3. Sıze Türk otomotiv endüstrisinin gelişmesi, ilerlemesi için otomotiv tasarımcıları nasıl konumlandırılmalı ve hangi görevleri almalı?</p> <p>2.6. Sıze, otomotiv tasarımcısının sahip olması gereken nitelikler nelerdir? -Bu nitelikler sektöre mi ait yoksa başka sektörlerinde paylaşılabilecek nitelikler midir?</p> <p>2.7. Sıze otomotiv tasarımcısı olmak için nasıl bir süreçten geçilmeli? -Nasıl bir eğitim alınmalı? (Lisans, Y. Lisans, Doktora, Sertifika vs.)</p> <p>-Tasarım eğitimi almadıysa &gt; Otomotiv tasarımcısı olmak için tasarım eğitimi almak istediniz mi, sonradan gelişen bir istek mi veya ...?</p> <p>2.4. Geçmişteki çalışma hayatınızın veya başka tasarım alanlarındaki tecrübelerinizin ve bilgilerinizin otomotiv tasarıma yönünüzü bir etkisi oldu mu? (Moda Tasarımı, Ürün Tasarımı, Mobilya Tasarımı vs.)</p> <p>2.5. Genel olarak otomotiv endüstrisi veya Türk otomotiv endüstrisi ile ilgili, sizi veya tasarımcılarınızı etkileyen, takip ettiğiniz yayınlar (sanal/gerçek) veya katıldığınız etkinlikler neler?</p>	<p>4.2. Türk otomotiv endüstrisinin mevcut durumunu, genel olarak, nasıl değerlendiriyorsunuz? (başarılı, başarısız, ilerici, tutucu, koruyucu, modern, yatırımcı, risk alabilen, parazit, kopyacı)</p> <p>4.3. Sıze, idealde, otomotiv endüstrisini nasıl olmalı ve işlemeli? (Nedenler, diktaatler, kaygılar, riskler vs.)</p> <p>2.9. Genel olarak otomotiv endüstrisi veya Türk otomotiv endüstrisi ile ilgili, sizi veya bakış açınızı etkileyen, takip ettiğinizi yayınlar (sanal/gerçek) veya katıldığınız etkinlikler neler?</p> <p>3.1. Türk otomotiv endüstrisindeki firmalarda, "tasarım" kelimesi nasıl anlaşılıyor? -Nasıl anlaşılmalı? -Bu algılama, Amerika ve Avrupa örneklerine kıyasla nasıl? (Amerika/Avrupa örnekleri)</p> <p>4.3. Tasarım ve otomotiv tasarımcısı Türk otomotiv endüstrisinde nasıl konumlandırıldı? -Nasıl konumlandırılıyor? -Amerika ve Avrupa örneklerine kıyasla başarı ne derecede?</p> <p>2.2. Sıze, idealde, otomotiv endüstrisinde tasarım birimi nasıl olmalıdır? (Amerika/Avrupa örnekleri)</p> <p>2.8. Sıze otomotiv tasarımcı mesleği, Türk otomotiv endüstrisi için önemli bir meslek mi?</p> <p>2.5. Sıze, idealde, otomotiv endüstrisinde tasarım birimi nasıl olmalıdır? -İdeal tasarım birimine ulaşabildiniz mi? -Ulaşmak için neler yapılmalı?</p> <p>3.3. Firmamız bünyesinde tasarım yapıyor mu? (Orijinal ürün tasarımı, full-body tasarımı) -Ne tür tasarımlar yapıyor? (Fikir, Mühendislik, Tekstil vs.)</p> <p>3.4. Firmamızda tasarım süreci nasıl gelişiyor? (Tüm süreç ve iştirakçiler)</p> <p>2.7. Otomotiv tasarım sürecinde tasarım dışı meslekleri nasıl konumlandırıyorunuz? -Tasarım geliştirme sürecine etkileri nasıl olmalı? (Amerika/Avrupa örnekleri)</p> <p>2.3. Sıze, otomotiv tasarımcısının sahip olması gereken nitelikler nelerdir? -Bu nitelikler sektöre mi ait yoksa başka sektörlerinde paylaşılabilecek nitelikler midir?</p> <p>2.4. Sıze, otomotiv tasarımcı birimi yöneticisinin sahip olması gereken eğitim-öğretim ne olmalıdır? (Design Management hakkında görüş al)</p> <p>2.9. Genel olarak otomotiv endüstrisi veya Türk otomotiv endüstrisi ile ilgili, sizi veya kararlarınızın etkilediğinizi takip ettiğinizi yayınlar (sanal/gerçek) veya katıldığınız etkinlikler neler?</p> <p>3.5. Bu süreçte kimler katılıyor? (tasarımcılar, mühendisler, vs.)</p> <p>3.6. Endüstriyel tasarımcı bu sürecin hangi bölümünde/bölmelerinde yer alıyor?</p> <p>3.7. Firmamızın otomotiv tasarımcı olarak görevlerinizi biraz detaylandırabilir misiniz?</p> <p>3.10. Tasarım birimi yöneticisi olarak, otomotiv tasarımcıların beklentileriniz nelerdir? -Bahsettiğinizin dışında görevlendirmeleri oluyor mu?</p> <p>4.3. Sıze Türk otomotiv endüstrisinin gelişmesi, ilerlemesi için otomotiv tasarımcıları nasıl konumlandırılmalı ve hangi görevleri almalı?</p> <p>2.6. Sıze, otomotiv tasarımcısının sahip olması gereken nitelikler nelerdir? -Bu nitelikler sektöre mi ait yoksa başka sektörlerinde paylaşılabilecek nitelikler midir?</p> <p>2.7. Sıze otomotiv tasarımcısı olmak için nasıl bir süreçten geçilmeli? -Nasıl bir eğitim alınmalı? (Lisans, Y. Lisans, Doktora, Sertifika vs.)</p> <p>-Tasarım eğitimi almadıysa &gt; Otomotiv tasarımcısı olmak için tasarım eğitimi almak istediniz mi, sonradan gelişen bir istek mi veya ...?</p> <p>2.4. Geçmişteki çalışma hayatınızın veya başka tasarım alanlarındaki tecrübelerinizin ve bilgilerinizin otomotiv tasarıma yönünüzü bir etkisi oldu mu? (Moda Tasarımı, Ürün Tasarımı, Mobilya Tasarımı vs.)</p> <p>2.5. Genel olarak otomotiv endüstrisi veya Türk otomotiv endüstrisi ile ilgili, sizi veya tasarımcılarınızı etkileyen, takip ettiğinizi yayınlar (sanal/gerçek) veya katıldığınız etkinlikler neler?</p>

APPENDIX C

ANALYSIS OF THEMES BETWEEN PARTICIPANTS







## APPENDIX E

### AUTOMOTIVE DESIGNER INTERVIEW MANUAL

#### (Original Turkish)

#### Türkiye'deki otomotiv endüstrisinde firma bünyesinde çalışan endüstriyel tasarımcıların rolü

##### Görüşme Kılavuzu

Görüşmemize başlamadan önce size kendimle ve yaptığım araştırmayla ilgili biraz bilgi vermek istiyorum. Adım Barış Yazıcı. Ankara'da Orta Doğu Teknik Üniversitesi'nde doktora öğrencisiyim. Bu araştırmayı Türkiye'deki otomotiv endüstrisinde firma bünyesinde çalışan endüstriyel tasarımcıların rollerini saptamak ve raporlamak için yapıyorum.

Yapacağımız görüşmede size araştırma konusuyla ilgili bazı sorular soracağım. Görüşme sırasında anlattıklarınızı yalnızca bilimsel amaçlarla kullanacağım; kimliğinizle ilgili bilgileri saklı tutacağım. Konuştuklarımızı daha sonra tam olarak hatırlayabilmek ve gözden geçirebilmek için görüşmemizi sesli olarak kaydedeceğim. Görüşmemiz 1.5 saat kadar zaman alabilir.

Görüşmede kullandığım terminoloji ile ilgili bir açıklama yapmak istiyorum. Sorularda geçen "tasarım" kelimesi "endüstriyel tasarım" ve "otomotiv tasarımı" ile eş anlamlı olarak kullanılmıştır. Sorularda geçen "tasarımcı" kelimesi "endüstriyel tasarımcı" ve "otomotiv tasarımcısı" ile eş anlamlı olarak kullanılmıştır.

Görüşmemize başlamadan önce sormak istediğiniz herhangi bir konu var mı?

##### Giriş

- Otomotiv tasarımı ile ilişkiniz nasıl başladı, anlatır mısınız?
- Kaç yıldır bu sektöredesiniz?

##### 1. Bölüm

###### 1.1. Firmanızda "tasarım" denince ne anlaşılıyor?

- 1.1.1. Diğer firmalarda ve küresel otomotiv endüstrisinde bu anlayış nasıldır?

##### 2. Bölüm

###### 2.1. Firmanızın otomotiv tasarımına yaklaşımı nasıldır?

- 2.1.1. Diğer firmalar ve küresel otomotiv endüstrisiyle karşılaştırır mısınız?

##### 3. Bölüm

###### 3.1. Size göre otomotiv tasarımcısı kimdir?

- 3.1.1. Hangi alanda veya alanlarda eğitim görmüş olması gerekir?
- 3.1.2. Otomotiv tasarımcısı nasıl olunmalıdır?

###### 3.2. Otomotiv tasarımcısı başka hangi isimlerle anılmaktadır?

###### 3.3. Firmanızın otomotiv tasarımcılarına yaklaşımı nasıldır?

###### 3.4. Firmanızda otomotiv tasarımcıları nasıl konumlandırılıyor?

- 3.4.1. Otomotiv tasarımcılarının bağlı olarak çalıştıkları bir birim bulunuyor mu?

###### 3.5. Otomotiv tasarımcılarının firma içi kariyer gelişimi nasıldır?

##### 4. Bölüm

###### 4.1. Otomotiv tasarım süreci nedir ve firmanızda nasıl işlemektedir?

###### 4.2. Otomotiv tasarım sürecine kimler katılmaktadır ve ilişkileri nasıldır?

##### 5. Bölüm

- 5.1. Firmanızın otomotiv tasarımcısından beklentileri nelerdir?
- 5.2. Otomotiv tasarımcısının otomotiv tasarımındaki rolü nedir?
- 5.3. Firmanızda otomotiv tasarımından başka görevleriniz var mı?
- 5.4. İdeal koşullarda otomotiv tasarımcısının görevleri ne olmalıdır?
6. Bölüm
  - 6.1. Firma dışından otomotiv tasarım hizmeti alıyor musunuz?
    - 6.1.1. Evetse, süreci tanımlar mısınız?
    - 6.1.2. Bu süreçte firma içi tasarımcının rolü nedir?
7. Bölüm
  - 7.1. Firmanızda otomotiv tasarımı yöneticisinin görevleri nelerdir?
  - 7.2. Firmanızda otomotiv tasarımı yöneticisinin organizasyon şemasındaki yeri nedir?
  - 7.3. Firmanızda otomotiv tasarımı yöneticisinin firmada alınan üst düzey kararlarda etkisi var mıdır?
  - 7.4. Otomotiv tasarımı yöneticisinin eğitim aldığı alan veya alanlar ne olmalıdır?
  - 7.5. Tasarımcıların otomotiv tasarımı yöneticisinden beklentileri nedir?
8. Bölüm
  - 8.1. Firmanızın amaçları ve hedefleri nedir?
  - 8.2. Firmanızda otomotiv tasarımının gelişmesi için ne yapılmalıdır?
    - 8.2.1. Otomotiv tasarımcısı bu gelişim için ne tür roller oynamalıdır?
9. Bölüm
  - 9.1. Türkiye'deki otomotiv endüstrisinin mevcut durumunu değerlendirebilir misiniz?
  - 9.2. Türkiye'deki otomotiv endüstrisinin beş yıl ve yirmi yıl sonraki durumunu nasıl görüyorsunuz?
  - 9.3. Türkiye'deki otomotiv endüstrisinin gelişmesi/ilerlemesi için neler yapılmalıdır?
    - 9.3.1. Otomotiv tasarımcıları bu gelişimde/ilerlemede nasıl rol oynamalıdır?
10. Bölüm
  - 10.1. Küresel otomotiv endüstrisinin mevcut durumunu değerlendirebilir misiniz?
  - 10.2. Küresel otomotiv endüstrisinin beş yıl ve yirmi yıl sonraki durumunu nasıl görüyorsunuz?
  - 10.3. Küresel otomotiv endüstrisinin içinde Türkiye'deki otomotiv endüstrisinin daha başarılı yer alması için neler yapılmalıdır?
    - 10.3.1. Otomotiv tasarımcıları bu amaca yönelik nasıl rol oynamalıdır?
11. Bölüm
  - 11.1. Eklemek veya söylemek istediğiniz başka herhangi bir şey var mı?
  - 11.2. Sizce üzerinde yeterince konuşmadığımız veya eksik kaldığını düşündüğünüz bir konu var mı?
  - 11.3. Tezimle ilgili başka kimler ile konuşmamın faydalı olacağını düşünüyorsunuz?
  - 11.4. Tezimle ilgili bana tavsiye edebileceğiniz kütüphane, kitap, yayın veya internet sitesi var mı?

## **(English Translation)**

### **The role of in-house automotive designers in the automotive industry in Turkey**

#### **Interview manual**

I would like to give you some background information about myself and the research before we begin. My name is Barış Yazıcı. I am a Ph.D. student at Middle East Technical University in Ankara. This research is conducted to find out and report the roles of in-house automotive designers in the automotive industry in Turkey.



During our interview, I will be asking you questions about my research subjects. The explanations you make during the interviews will be solely used for scientific purposes. I will conceal all information relating to your identity. To recall and remember the interviews, I will record the interviews to a voice recorder. The interview may take up to 1.5 hours.

I would like to make a short explanation about the terminology I use during the interviews. The phrase “design” used during the interviews stands for “industrial design” or “automotive design”, in the same manner, the phrase “designer” stands for “industrial designer” or “automotive designer”.

Do you have any questions before we begin the interview?

#### Introduction

- How were you introduced to the field of automotive design, can you explain?
- How many years have you been in this sector?

#### 1. Part 1

- 1.1. What is understood in your firm when the word “design” is used?
  - 1.1.1. What is understood in other firms in Turkey or global firms?

#### 2. Part 2

- 2.1. What is the approach of your firm towards automotive design?
  - 2.1.1. How is this approach in other firms in Turkey or global firms?

#### 3. Part 3

- 3.1. In your point of view, who is an “automotive designer”?
  - 3.1.1. In what fields does an automotive designer need to be educated?
  - 3.1.2. How should one become an automotive designer?
- 3.2. What are the other names or phrases used to describe an automotive designer?
- 3.3. What is the approach of your firm towards automotive designers?
- 3.4. How are automotive designers positioned in your firm?
  - 3.4.1. Do automotive designers have a unit/department that they work under?
- 3.5. What are the career opportunities for an automotive designer in your firm?

#### 4. Part 4

- 4.1. What is an “automotive design process”, and how is it conducted in your firm?
- 4.2. Who attends the automotive design process and what are their relations?

#### 5. Part 5

- 5.1. What are the expectations of your firm from an automotive designer?
- 5.2. What are the responsibilities of the automotive designer during the automotive design process?
- 5.3. Do you have any other responsibilities in your firm other than automotive design?
- 5.4. What should be the responsibilities of an automotive designer under ideal conditions?

#### 6. Part 6

- 6.1. Are you outsourcing automotive design?
  - 6.1.1. If yes, can you explain the process?
  - 6.1.2. What are the roles of the in-house automotive designer during the outsourcing process?

#### 7. Part 7

- 7.1. What are the responsibilities of the automotive design manager in your firm?
- 7.2. What is the position of the automotive design manager in the company hierarchy?
- 7.3. What is the effectiveness of the automotive design manager in the decisions taken at the top of the company?
- 7.4. What should be education of an automotive design manager?
- 7.5. What are the expectations of the automotive designers from the automotive design manager?

#### 8. Part 8

- 8.1. What are the aims and goals of your company?
- 8.2. What should be done to improve automotive design in your company?
  - 8.2.1. What can the automotive designer do to help achieve this improvement?
9. Part 9
  - 9.1. Can you evaluate the current situation of the automotive industry in Turkey?
  - 9.2. Can you explain your foresights on the situation of the automotive industry in Turkey in five years and twenty years' time?
  - 9.3. What should be done to improve/progress the automotive industry in Turkey?
    - 9.3.1. What role can the automotive designers take to help achieve this improvement/progress?
10. Part 10
  - 10.1. Can you evaluate the current situation of the global automotive industry?
  - 10.2. Can you explain your foresights on the situation of the global automotive industry in five years and twenty years' time?
  - 10.3. What should be done to improve the situation of the automotive industry in Turkey in the global automotive industry?
    - 10.3.1. What role can the automotive designers take to help achieve this improvement?
11. Part 11
  - 11.1. Would you like to add anything?
  - 11.2. Are there any subjects that you believe we did not talk about or did not talk about enough?
  - 11.3. Who else do you think I should speak to for my research?
  - 11.4. Can you recommend any libraries, books, articles or web sites that I should look into related to my research?



## APPENDIX F

### AUTOMOTIVE DESIGN MANAGER INTERVIEW MANUAL

#### (Original Turkish)

#### Türkiye'deki otomotiv endüstrisinde firma bünyesinde çalışan endüstriyel tasarımcıların rolü

##### Görüşme Kılavuzu

Görüşmemize başlamadan önce size kendimle ve yaptığım araştırmayla ilgili biraz bilgi vermek istiyorum. Adım Barış Yazıcı. Ankara'da Orta Doğu Teknik Üniversitesi'nde doktora öğrencisiyim. Bu araştırmayı Türkiye'deki otomotiv endüstrisinde firma bünyesinde çalışan endüstriyel tasarımcıların rollerini saptamak ve raporlamak için yapıyorum.

Yapacağımız görüşmede size araştırma konusuyla ilgili bazı sorular soracağım. Görüşme sırasında anlattıklarınızı yalnızca bilimsel amaçlarla kullanacağım; kimliğinizle ilgili bilgileri saklı tutacağım. Konuştuklarımızı daha sonra tam olarak hatırlayabilmek ve gözden geçirebilmek için görüşmemizi sesli olarak kaydedeceğim. Görüşmemiz 1.5 saat kadar zaman alabilir.

Görüşmede kullandığım terminoloji ile ilgili bir açıklama yapmak istiyorum. Sorularda geçen "tasarım" kelimesi "endüstriyel tasarım" ve "otomotiv tasarımı" ile eş anlamlı olarak kullanılmıştır. Sorularda geçen "tasarımcı" kelimesi "endüstriyel tasarımcı" ve "otomotiv tasarımcısı" ile eş anlamlı olarak kullanılmıştır.

Görüşmemize başlamadan önce sormak istediğiniz herhangi bir konu var mı?

##### Giriş

- Otomotiv endüstrisi ile ilişkiniz nasıl başladı, anlatır mısınız?
- Kaç yıldır bu sektöredesiniz?

1. Bölüm
  - 1.1. Firmanızda "tasarım" denince ne anlaşılıyor?
    - 1.1.1. Diğer firmalarda ve küresel otomotiv endüstrisinde bu anlayış nasıldır?
2. Bölüm
  - 2.1. Firmanızın otomotiv tasarımına yaklaşımı nasıldır?
    - 2.1.1. Diğer firmalar ve küresel otomotiv endüstrisiyle karşılaştırır mısınız?
3. Bölüm
  - 3.1. Size göre otomotiv tasarımcısı kimdir?
    - 3.1.1. Hangi alanda veya alanlarda eğitim görmüş olması gerekir?
    - 3.1.2. Nasıl otomotiv tasarımcısı olunmalıdır?
  - 3.2. Otomotiv tasarımcısı başka hangi isimlerle anılmaktadır?
  - 3.3. Firmanızın otomotiv tasarımcılarına yaklaşımı nasıldır?
  - 3.4. Firmanızda otomotiv tasarımcıları nasıl konumlandırılıyor?
    - 3.4.1. Otomotiv tasarımcılarının bağlı olarak çalıştıkları bir birim bulunuyor mu?
  - 3.5. Otomotiv tasarımcılarının firma içi kariyer gelişimi nasıldır?
4. Bölüm
  - 4.1. Otomotiv tasarım süreci nedir ve firmanızda nasıl işlemektedir?
  - 4.2. Otomotiv tasarım sürecine kimler katılmaktadır ve ilişkileri nasıldır?
5. Bölüm

- 5.1. Firmanızın otomotiv tasarımcısından beklentileri nelerdir?
- 5.2. Otomotiv tasarımcısının otomotiv tasarımındaki rolü nedir?
- 5.3. Firmanızda otomotiv tasarımcılarının başka görevleri var mı?
- 5.4. İdeal koşullarda otomotiv tasarımcısının görevleri ne olmalıdır?
6. Bölüm
  - 6.1. Firma dışından otomotiv tasarım hizmeti alıyor musunuz?
    - 6.1.1. Evetse, süreci tanımlar mısınız?
    - 6.1.2. Bu süreçte firma içi tasarımcının rolü nedir?
7. Bölüm
  - 7.1. Firmanızda otomotiv tasarımı yöneticisinin görevleri nelerdir?
  - 7.2. Firmanızın otomotiv tasarımı yöneticisinden beklentileri nelerdir?
  - 7.3. Firmanızda otomotiv tasarımı yöneticisinin organizasyon şemasındaki yeri nedir?
  - 7.4. Firmanızda otomotiv tasarımı yöneticisinin firmada alınan üst düzey kararlarda etkisi var mıdır?
  - 7.5. Otomotiv tasarımı yöneticisinin eğitim aldığı alan veya alanlar ne olmalıdır?
  - 7.6. Tasarımcıların otomotiv tasarımı yöneticisinden beklentileri nedir?
8. Bölüm
  - 8.1. Firmanızın amaçları ve hedefleri nedir?
  - 8.2. Firmanızda otomotiv tasarımının gelişmesi için ne yapılmalıdır?
    - 8.2.1. Otomotiv tasarımcısı bu gelişim için ne tür roller oynamalıdır?
9. Bölüm
  - 9.1. Türkiye'deki otomotiv endüstrisinin mevcut durumunu değerlendirebilir misiniz?
  - 9.2. Türkiye'deki otomotiv endüstrisinin beş yıl ve yirmi yıl sonraki durumunu nasıl görüyorsunuz?
  - 9.3. Türkiye'deki otomotiv endüstrisinin gelişmesi/ilerlemesi için neler yapılmalıdır?
    - 9.3.1. Otomotiv tasarımcıları bu gelişimde/ilerlemede nasıl rol oynamalıdır?
10. Bölüm
  - 10.1. Küresel otomotiv endüstrisinin mevcut durumunu değerlendirebilir misiniz?
  - 10.2. Küresel otomotiv endüstrisinin beş yıl ve yirmi yıl sonraki durumunu nasıl görüyorsunuz?
  - 10.3. Küresel otomotiv endüstrisinin içinde Türkiye'deki otomotiv endüstrisinin daha başarılı yer alması için neler yapılmalıdır?
    - 10.3.1. Otomotiv tasarımcıları bu amaca yönelik nasıl rol oynamalıdır?
11. Bölüm
  - 11.1. Eklemek veya söylemek istediğiniz başka herhangi bir şey var mı?
  - 11.2. Sizce üzerinde yeterince konuşmadığımız veya eksik kaldığını düşündüğünüz bir konu var mı?
  - 11.3. Tezimize ilgili, başka kimler ile konuşmamın faydalı olacağını düşünüyorsunuz?
  - 11.4. Tezimize ilgili bana tavsiye edebileceğiniz kütüphane, kitap, yayın veya internet sitesi var mı?

## **(English Translation)**

### **The role of in-house automotive designers in the automotive industry in Turkey**

#### **Interview manual**

I would like to give you some background information about myself and the research before we begin. My name is Barış Yazıcı. I am a Ph.D. student at Middle East Technical University in Ankara. This research is conducted to find out and report the roles of in-house automotive designers in the automotive industry in Turkey.

During our interview, I will be asking you questions about my research subjects. The explanations you make during the interviews will be solely used for scientific purposes. I will conceal all information relating to your identity. To recall and remember the interviews, I will record the interviews to a voice recorder. The interview may take up to 1.5 hours.

I would like to make a short explanation about the terminology I use during the interviews. The phrase “design” used during the interviews stands for “industrial design” or “automotive design”, in the same manner, the phrase “designer” stands for “industrial designer” or “automotive designer”.

Do you have any questions before we begin the interview?

#### Introduction

- How were you acquainted with the automotive industry, can you explain?
- How many years have you been in this sector?

#### 1. Part 1

1.1. What is understood in your firm when the word “design” is used?

1.1.1. What is understood in other firms or global firms?

#### 2. Part 2

2.1. What is the approach of your firm towards automotive design?

2.1.1. How is this approach in other firms in Turkey or global firms?

#### 3. Part 3

3.1. In your point of view, who is an “automotive designer”?

3.1.1. In what fields does an automotive designer need to be educated?

3.1.2. How should one become an automotive designer?

3.2. What are the other names or phrases used to describe an automotive designer?

3.3. What is the approach of your firm towards automotive designers?

3.4. How are automotive designers positioned in your firm?

3.4.1. Do automotive designers have a unit/department that they work under?

3.5. What are the career opportunities for an automotive designer in your firm?

#### 4. Part 4

4.1. What is an “automotive design process”, and how is it conducted in your firm?

4.2. Who attends the automotive design process and what are their relations?

#### 5. Part 5

5.1. What are the expectations of your firm from an automotive designer?

5.2. What are the responsibilities of the automotive designer during the automotive design process?

5.3. Do the automotive designers have any other responsibilities in your firm other than automotive design?

5.4. What should be the responsibilities of an automotive designer under ideal conditions?

#### 6. Part 6

6.1. Are you outsourcing automotive design?

6.1.1. If yes, can you explain the process?

6.1.2. What are the roles of the in-house automotive designer during the outsourcing process?

#### 7. Part 7

7.1. What are the responsibilities of the automotive design manager in your firm?

7.2. What are the expectations of the company from the automotive design manager?

7.3. What is the position of the automotive design manager in the company hierarchy?

7.4. What is the effectiveness of the automotive design manager in the decisions taken at the top of the company?

7.5. What should be education of an automotive design manager?

7.6. What are the expectations of the automotive designers from the automotive design manager?

8. Part 8
  - 8.1. What are the aims and goals of your company?
  - 8.2. What should be done to improve automotive design in your company?
    - 8.2.1. What can the automotive designer do to help achieve this improvement?
9. Part 9
  - 9.1. Can you evaluate the current situation of the automotive industry in Turkey?
  - 9.2. Can you explain your foresights on the situation of the automotive industry in Turkey in five years and twenty years' time?
  - 9.3. What should be done to improve/progress the automotive industry in Turkey?
    - 9.3.1. What role can the automotive designers take to help achieve this improvement/progress?
10. Part 10
  - 10.1. Can you evaluate the current situation of the global automotive industry?
  - 10.2. Can you explain your foresights on the situation of the global automotive industry in five years and twenty years' time?
  - 10.3. What should be done to improve the situation of the automotive industry in Turkey in the global automotive industry?
    - 10.3.1. What role can the automotive designers take to help achieve this improvement?
11. Part 11
  - 11.1. Would you like to add anything?
  - 11.2. Are there any subjects that you believe we did not talk about or did not talk about enough?
  - 11.3. Who else do you think I should speak to for my research?
  - 11.4. Can you recommend any libraries, books, articles or web sites that I should look into related to my research?

## APPENDIX G

### AUTOMOTIVE INDUSTRY EXPERT INTERVIEW MANUAL

#### (Original Turkish)

#### Türkiye'deki otomotiv endüstrisinde firma bünyesinde çalışan endüstriyel tasarımcıların rolü

##### Görüşme Kılavuzu

Görüşmemize başlamadan önce size kendimle ve yaptığım araştırmayla ilgili biraz bilgi vermek istiyorum. Adım Barış Yazıcı. Ankara'da Orta Doğu Teknik Üniversitesi'nde doktora öğrencisiyim. Bu araştırmayı Türkiye'deki otomotiv endüstrisinde firma bünyesinde çalışan endüstriyel tasarımcıların rollerini saptamak ve raporlamak için yapıyorum.

Yapacağımız görüşmede size araştırma konusuyla ilgili bazı sorular soracağım. Görüşme sırasında anlattıklarınızı yalnızca bilimsel amaçlarla kullanacağım; kimliğinizle ilgili bilgileri saklı tutacağım. Konuştuklarımızı daha sonra tam olarak hatırlayabilmek ve gözden geçirebilmek için görüşmemizi sesli olarak kaydedeceğim. Görüşmemiz 1.5 saat kadar zaman alabilir.

Görüşmede kullandığım terminoloji ile ilgili bir açıklama yapmak istiyorum. Sorularda geçen "tasarım" kelimesi "endüstriyel tasarım" ve "otomotiv tasarımı" ile eş anlamlı olarak kullanılmıştır. Sorularda geçen "tasarımcı" kelimesi "endüstriyel tasarımcı" ve "otomotiv tasarımcısı" ile eş anlamlı olarak kullanılmıştır.

Görüşmemize başlamadan önce sormak istediğiniz herhangi bir konu var mı?

##### Giriş

- Otomotiv endüstrisi ile ilişkiniz nasıl başladı, anlatır mısınız?
- Kaç yıldır bu sektör ile ilişkiyorsunuz?

1. Bölüm
  - 1.1. Türkiye'deki otomotiv endüstrisinde "tasarım" denince ne anlaşılıyor?
    - 1.1.1. Küresel otomotiv endüstrisinde bu anlayış nasıldır?
2. Bölüm
  - 2.1. Türkiye'deki otomotiv endüstrisindeki firmaların otomotiv tasarımına yaklaşımı nasıldır?
    - 2.1.1. Küresel otomotiv endüstrisiyle karşılaştırır mısınız?
3. Bölüm
  - 3.1. Size göre otomotiv tasarımcısı kimdir?
    - 3.1.1. Hangi alanda veya alanlarda eğitim görmüş olması gerekir?
    - 3.1.2. Nasıl otomotiv tasarımcısı olunmalıdır?
  - 3.2. Otomotiv tasarımcıları başka hangi isimlerle anılmaktadır?
  - 3.3. Türkiye'deki otomotiv endüstrisindeki firmaların otomotiv tasarımcılarına yaklaşımı nasıldır?
  - 3.4. Türkiye'deki otomotiv endüstrisindeki firmalarda otomotiv tasarımcıları nasıl konumlandırılmaktadır?
    - 3.4.1. Otomotiv tasarımcılarının bağlı olarak çalıştıkları birim bulunmakta mıdır?
  - 3.5. Türkiye'deki otomotiv endüstrisindeki firmalarda otomotiv tasarımcılarının kariyer gelişimi nasıldır?
4. Bölüm

- 4.1. Otomotiv tasarım süreci nedir ve Türkiye'deki otomotiv endüstrisindeki firmalarda nasıl işlemektedir?
- 4.2. Otomotiv tasarım sürecine kimler katılmaktadır ve ilişkileri nasıldır?
5. Bölüm
  - 5.1. Türkiye'deki otomotiv endüstrisindeki firmaların otomotiv tasarımcısından beklentileri nelerdir?
  - 5.2. Sizce, otomotiv tasarımcısının otomotiv tasarımındaki rolü nedir?
  - 5.3. Türkiye'deki otomotiv endüstrisindeki firmalarda otomotiv tasarımcılarının başka görevleri var mıdır?
  - 5.4. İdeal koşullarda otomotiv tasarımcısının görevleri ne olmalıdır?
6. Bölüm
  - 6.1. Firmaların bünyeleri dışında otomotiv tasarım hizmeti almaları konusundaki düşünceleriniz nelerdir?
7. Bölüm
  - 7.1. Firmalarda otomotiv tasarımı yöneticisinin görevleri nelerdir?
  - 7.2. Türkiye'deki otomotiv endüstrisindeki firmalarda, firmanın otomotiv tasarımı yöneticisinden beklentileri nelerdir?
  - 7.3. Firmalarda otomotiv tasarımı yöneticisinin organizasyon şemasındaki yeri ne olmalıdır?
  - 7.4. Firmalarda otomotiv tasarımı yöneticisinin firmada alınan üst düzey kararlarda etkisi var mıdır?
  - 7.5. Sizce, otomotiv tasarımı yöneticisinin eğitim aldığı alan veya alanlar ne olmalıdır?
8. Bölüm
  - 8.1. Türkiye'deki otomotiv endüstrisindeki firmaların amaçları ve hedefleri nelerdir?
  - 8.2. Türkiye'deki otomotiv endüstrisindeki firmalar, firmalarındaki otomotiv tasarımının gelişmesi için ne yapılmalıdır?
    - 8.2.1. Otomotiv tasarımcısı bu gelişim için ne tür roller oynamalıdır?
9. Bölüm
  - 9.1. Türkiye'deki otomotiv endüstrisinin mevcut durumunu değerlendirebilir misiniz?
  - 9.2. Türkiye'deki otomotiv endüstrisinin beş yıl ve yirmi yıl sonraki durumunu nasıl görüyorsunuz?
  - 9.3. Türkiye'deki otomotiv endüstrisinin gelişmesi/ilerlemesi için neler yapılmalıdır?
    - 9.3.1. Otomotiv tasarımcıları bu gelişim/ilerlemede nasıl rol oynamalıdır?
10. Bölüm
  - 10.1. Küresel otomotiv endüstrisinin mevcut durumunu değerlendirebilir misiniz?
  - 10.2. Küresel otomotiv endüstrisinin beş yıl ve yirmi yıl sonraki durumunu nasıl görüyorsunuz?
  - 10.3. Küresel otomotiv endüstrisinin içinde Türkiye'deki otomotiv endüstrisinin daha başarılı yer alması için neler yapılmalı?
    - 10.3.1. Otomotiv tasarımcıları bu amaca yönelik nasıl rol oynamalıdır?
11. Bölüm
  - 11.1. Ekleme veya söylemek istediğiniz başka herhangi bir şey var mı?
  - 11.2. Sizce üzerinde yeterince konuşmadığımız veya eksik kaldığını düşündüğünüz bir konu var mı?
  - 11.3. Tezimle ilgili başka kimler ile konuşmamın faydalı olacağını düşünüyorsunuz?
  - 11.4. Tezimle ilgili bana tavsiye edebileceğiniz kütüphane, kitap, yayın veya internet sitesi var mı?

**(English Translation)**

**The role of in-house automotive designers in the automotive industry in Turkey**

## Interview manual

I would like to give you some background information about myself and the research before we begin. My name is Barış Yazıcı. I am a Ph.D. student at Middle East Technical University in Ankara. This research is conducted to find out and report the roles of in-house automotive designers in the automotive industry in Turkey.

During our interview, I will be asking you questions about my research subjects. The explanations you make during the interviews will be solely used for scientific purposes. I will conceal all information relating to your identity. To recall and remember the interviews, I will record the interviews to a voice recorder. The interview may take up to 1.5 hours.

I would like to make a short explanation about the terminology I use during the interviews. The phrase “design” used during the interviews stands for “industrial design” or “automotive design”, in the same manner, the phrase “designer” stands for “industrial designer” or “automotive designer”.

Do you have any questions before we begin the interview?

### Introduction

- How were you introduced to the field of automotive design, can you explain?
- How many years have you been in this sector?

#### 1. Part 1

- 1.1. What is understood in the automotive industry in Turkey when the word “design” is used?
  - 1.1.1. How is this understanding in the global automotive industry?

#### 2. Part 2

- 2.1. What is the approach of companies in the automotive industry in Turkey towards automotive design?
  - 2.1.1. Can you compare this to the approach in the global automotive industry?

#### 3. Part 3

- 3.1. In your point of view, who is an “automotive designer”?
  - 3.1.1. In what fields does an automotive designer need to be educated?
  - 3.1.2. How should one become an automotive designer?
- 3.2. What are the other names or phrases used to describe an automotive designer?
- 3.3. What is the approach of the companies in the automotive industry in Turkey towards automotive designers?
- 3.4. How are automotive designers positioned in the companies in the automotive industry in Turkey?
  - 3.4.1. Do automotive designers have a unit/department that they work under?
- 3.5. What are the career opportunities for an automotive designer in the automotive industry in Turkey?

#### 4. Part 4

- 4.1. What is an “automotive design process”, and how is it conducted in the companies in the automotive industry in Turkey?
- 4.2. Who attends the automotive design process and what are their relations?

#### 5. Part 5

- 5.1. What are the expectations of the companies in the automotive industry in Turkey from an automotive designer?
- 5.2. What should be the responsibilities of the automotive designer during the automotive design process?
- 5.3. Do the automotive designers have any other responsibilities other than automotive design in the companies in the automotive industry in Turkey?
- 5.4. What should be the responsibilities of an automotive designer under ideal conditions?

6. Part 6
  - 6.1. What are your thoughts on outsourcing of automotive design in the companies in the automotive industry in Turkey?
7. Part 7
  - 7.1. What are the responsibilities of the automotive design manager in the companies in the automotive industry in Turkey?
  - 7.2. What are the expectations of the companies from the automotive design managers in the automotive industry in Turkey?
  - 7.3. What is the position of the automotive design manager in the company hierarchy in the automotive industry in Turkey?
  - 7.4. What is the effectiveness of the automotive design manager in the decisions taken at the top of the company in the automotive industry in Turkey?
  - 7.5. What should be education of an automotive design manager?
8. Part 8
  - 8.1. What are the aims and goals of the companies in the automotive industry in Turkey?
  - 8.2. What should be done to improve automotive design in the companies in the automotive industry in Turkey?
    - 8.2.1. What can the automotive designer do to help achieve this improvement?
9. Part 9
  - 9.1. Can you evaluate the current situation of the automotive industry in Turkey?
  - 9.2. Can you explain your foresights on the situation of the automotive industry in Turkey in five years and twenty years' time?
  - 9.3. What should be done to improve/progress the automotive industry in Turkey?
    - 9.3.1. What role can the automotive designers take to help achieve this improvement/progress?
10. Part 10
  - 10.1. Can you evaluate the current situation of the global automotive industry?
  - 10.2. Can you explain your foresights on the situation of the global automotive industry in five years and twenty years' time?
  - 10.3. What should be done to improve the situation of the automotive industry in Turkey in the global automotive industry?
    - 10.3.1. What role can the automotive designers take to help achieve this improvement?
11. Part 11
  - 11.1. Would you like to add anything?
  - 11.2. Are there any subjects that you believe we did not talk about or did not talk about enough?
  - 11.3. Who else do you think I should speak to for my research?
  - 11.4. Can you recommend any libraries, books, articles or web sites that I should look into related to my research?



## APPENDIX H

### TRANSLATIONS OF QUOTES FROM THE INTERVIEWS

- (1) Firmamda genel olarak, tasarım denince çok fazla şey anlaşılıyor. Bunun içinde mühendislik kısmı da anlaşılıyor ya da araçla ilgili bir problem çözmeye anlaşılıyor, yeni bir hat inşaat etme de anlaşılıyor, o yüzden tasarımcı deyince kimse anlamıyor.
- (2) Design ile styling in arasındaki farkı çok fazla anlamış değiller [...] styling ile engineering arasındaki farkı çok anlamıyorlar.
- (3) Tasarım denince mekanik tasarım anlaşılıyor [...] bizim yaptığımız işe stil tasarımı deniliyor.
- (4) İtalya'da [...] üniversitedeyken okuyup, öğrenciyken hayal ettiğimiz kıvamdaki çalışmalar devam ediyor, burası biraz daha mühendisler tarafından kuşatılmış durumda.
- (5) [...] üretim gözüyle veya kalite gözüyle veya satın alma gözüyle baktığınızda, onlar tamamen mühendislik tasarımı anlıyorlar.
- (6) [...] tasarımcının yaptığı işin yalnızca styling olduğu yaygın bir kanı.
- (7) [...] yavaş yavaş mühendislik tasarımının tanımını değiştirmeye doğru gidiyoruz son yıllarda, buda devam edecek diye düşünüyorum
- (8) Tasarım, bizde, yaklaşım farklılığı dışında, çabuk hayata geçebilir, fark yaratabilecek bir durum.
- (9) [Tasarım] ürünü gösteren, ürünü diğerlerinden ayıran, kimliğini veren olgu.
- (10) Avrupa da bu iş tamamdır, yani, tasarım gerekli lüzumunu, gerekli görevini, gerekli fonksiyonunu yerine getiriyor
- (11) Styling ekibinin, endüstri tasarım ekibinin, ağırlık sahibi olduğu şirketlerin sayısı çok çok düşük.
- (12) [...] yaklaşım adına baktığımız zamanda burada tasarımı genellikle üretim ve mühendislik yönlendiriyor ve istediğiniz şeyleri yapamıyorsunuz, kısıtlanıyorsunuz çok.
- (13) [...] [tasarımda] var olan yeteneklerimizin hepsini yansıtamadığımızı ve müdahale edemediğimiz, bu hem kişi sayısının azlığından var hem kaynak olarak eksikiz hem de algı olarak bu [tasarım] oluşmamış.
- (14) Büyük küresel oyuncuların Türkiye'deki operasyonlarında ürün hakları Türkiye'de olmadığı için burada yapılan tasarım işi daha küçük detaylarda kalıyor.
- (15) Bu rekabet, tabii bir farklılık getirmeniz gerekiyor, tasarımın önemi burada ortaya çıktı.
- (16) Araçların geliştirilmesindeki ilk ve yaratıcı aşama olarak bakıyorlar; projelerin ilerlemesindeki kritik nokta ve de araçların satışlarını sağlayacak olan etken gözüyle.

- (17) [...] geçtiğimiz yıllarla beraber gelişen endüstri ürünleri tasarımının, mühendislik tasarımının önüne konmasıyla beraber gelişen süreçte, artık tasarım dendiğinde, ki bizde bunu daha fazla ortaya koyuyoruz ve geliştirmeye çalışıyoruz, endüstriyel tasarımı yavaş yavaş mühendislik tasarımının tanımını değiştirmeye doğru gidiyoruz
- (18) [...] bir araç, öncelikle mekanik olarak tasarlanır, işte yürür aksamı, iskeleti vs. yapılır, otomotiv tasarımı sonradan üstüne giydirilen bir kabuktan ibarettir.
- (19) [...] net talebi biz genellikle öğrenemiyoruz. Biz talebin bir kısmını, duyduğumuz, öğrendiğimiz kadarıyla başlıyoruz ve ilerleyen süreçlerde aslında şuda gerekiyordu, aslında şuda olması gerekiyordu gibi sonradan işin içine katılan tasarım sürecinde bir takım aksaklıklara neden oluyor.
- (20) [...] bu daha önceleri biraz daha sonradan geliyordu, yani önce arabanın boyutları şeyi ne yapılacağı çıkıp şimdi buna bir de yüz uyduralım [...]
- (21) Arabanın styling'i ile ilgili tüm onaylarda en tepeden, yani şirketin genel müdürüne sunulup onun onayıyla hayata geçiriliyor.
- (22) Benim fikrim, akademik bir kadroyla oluşmuş tasarım grubunun, hatta içinde gelecek bilimcilerle beraber yoğrulmuş bir ekibin, bu sürecin başını oluşturması gerekiyor.
- (23) [...] bunların değerlendirilmesi de tabii ki onların dışındaki bir konsorsiyum diyelim isterseniz, veya bir yönetim diyelim, bunun her yerde olması lazım, çünkü hem hakim hem savcı olunmaz, endüstriyel tasarımcının da üzerinde, bir geri besleme olması lazım.
- (24) Ürün toplantısında, bütün üst düzey müdürlerin katıldığı bir toplantıda, ana hatlarıyla spesifikasyonları belirleniyor. Bu bir brief olarak algılanabilir belki, yazılı anlamda sadece toplantı tutanağı oluyor.
- (25) Tabii, burada biz endüstriyel tasarımcıları, ben özellikle, şu şekilde baskı altına alıyorum, diyorum ki "arkadaş, sizin tasarladığınız otobüs yapılıyor, her türlü baskıyı [mühendislere] yapma hakkınız var".
- (26) [...] aynı dili konuşmuyoruz mesela, onu birazcık çevirmemiz gerekiyor.
- (27) [...] sistematik bir global bir sistem ki son 10 yılın sistemidir, paylaşımcı katılımcı bir sistemdir. tasarımcı verilen pazarlamanın getirmiş olduğu öneriler veya istekler çerçevesinde bütçesi ve zamanı bellidir.
- (28) [...] şirket imajına direk hitap edecek olan şeyi, out-source etmemenizde gerekir prensip olarak.
- (29) [...] yurtdışından bir teklif verildi, Belçika'dan ama, oda çok büyük maliyetler getiriyordu, böyle bir maliyet olunca bundan vazgeçildi.
- (30) Böyle bir düşünce olamaz [...] Şirket kimliği diye bir şey var.
- (31) Kesinlikle yapmaları lazım, tabii, bu yenilik devreye, farklı bir bakış, insan hep aynı ortam içinde olduğu zaman körleşir, görmez, devamlı aynı şeyi tekrarlar, yenilikçi olmaz, onun için dışarıya çıkıp oradan bir şeyler almakta büyük yarar var

- (32) İçeride tabii ki tasarım yaptırılmalı, asıl bilgi birikimi içeride toplanmalı ama dışarıdan destek alınmalı.
- (33) Otomotiv tasarımcı, her şeyi takip eden, mesela, her konu hakkında biraz fikri olan, çünkü, otomotiv tasarımı içerisinde moda da var, işte malzeme bilgisi, mühendislikte var, yani, bir aracın hızlı gidecekse onu yansıtacak bir aerodinamik bilgisi var, bütün bu konular hakkında full bilgi değil de biraz bilgisi olan ve hani küçük yaşlardan itibaren bu konuya eğilmiş bir insan olması gerektiğini düşünüyorum.
- (34) [...] çok değişik bir vizyonu olan, diğer tasarımcılardan birazcık daha farklı bir vizyonu olan [insan].
- (35) Otomotiv tasarımcısı, mesleğinin stil kısmına odaklanmışsa, hacim, dünyanın gittiği artistik ve görsel trendleri ve de insanlara hoş gelen şeyleri çok iyi anlayan, görebilen, yorumlayan ve netice çıkartabilen [bir insandır].
- (36) Otomotiv tasarımcısı öncelikle sosyal bir insan olmak zorunda, sosyal bir yapının olması gerekiyor.
- (37) Ürüne kurumsal kimliği yedirmektir
- (38) Tasarım dendiğinde, aracın en sonunda geri kazanıldığı noktaya kadar geçen sürecin tamamını görebilen, tasarlayabilen, müşteriyi de, müşterinin o araçtan kazanımını da, o araca yaptığı total maliyeti de hesaba katan, yine çevreyi, çevre gibi unsurları hesaba katan bütüne demek gerekiyor.
- (39) [...] tasarım sözcüğünün yerine mühendisleri koyması, bu geleneği şimdi yeni kırıyoruz ama bu nedenle o da büyük bir hataydı.
- (40) Mimarlığın altında değil de, mühendisliğin altında gelişmesi biraz daha dilin aynı olması, disiplinin aynı olması, farklı disiplinler ama aynı dili konuşmak adına doğru buluyorum.
- (41) [...] ne yazık ki sektörün içine girdikten sonra öğrenilen filan bir şey şu anda Türkiye’de.
- (42) [...] Dört senelik eğitim yetmez. Hayatta yetmez, zaten yetmediği için de Türkiye’de tasarımcı yetişmiyor.
- (43) [...] karşıma gelen talebelere görüyorum, çok fazla mühendisin işini üstlenme eğilimi var.
- (44) Endüstriyel tasarımda hala üniversite sanayi işbirliği fazla yok, ben otomotiv konuşuyorum tabii.
- (45) Eskiden daha yalnızca çizen ama çizdiği üretilmeyen, sadece güzel şey yapabilen, şık, oda iyi bir tasarımcıysa, yapabilen ama onun üzerine büyük oranda mühendislik katkısı gerektiren, yeterli düzeyde olmayan olarak bakılıyordu [...] farkettiler ki, otomotiv tasarımcısı yalnızca şekil yapan kişi değil, inovasyon anlamında da yepyeni malzeme üretim yöntemleri vs. keşifde yapabilen kişi olduğunu yavaş anlamaya başladılar.
- (46) [...] bu sistematik içerisinde buranın nasıl işlediği konusunda hala kafalarında soru işaretleri olduğunu düşünüyorum.
- (47) Bir şekilde orada asalak olarak bulunan bir mahluk olarak görülüyor

- (48) Son derece saygılı, son derece koruyucu, bunu gururla söyleyebilirim
- (49) [...] çalışırsan, bir gayret gösterirsen, çabaladığını görürlerse destek veriyorlar.
- (50) Endüstriyel tasarımcının yeteneğine göre hangi grupta yer alacağı biraz da onun performansı ile şekilleniyor.
- (51) [...] her işi yapabilecek eleman olarak bakılıyor daha doğrusu.
- (52) Benim tanıdığım firmaların içerisinde, otomotiv tasarımcıları genelde mühendislik veya Ar-Ge departmanlarının altında bir en fazla şeflik olarak bulunuyorlar.
- (53) [...] doğal olarak mühendisliğin ve ARGE'nin bir parçası, mühendisliğin içindiler.
- (54) [...] en alt mühendisin arasında bir şeyden başlayıp, sonra insanlar bizim yaptığımız işin ne olduğunu anladıkça ilerleyip, belli bir yere geldik.
- (55) Kariyer gelişimi yok, kariyer değişimi gibi bir şey var.
- (56) [Firmanın] konumundan dolayı bu şehire çok fazla kimse de gelemiyor.
- (57) Endüstriyel tasarımcı burada, mesela, ARGE birimi yönetici olabilir, daha yüksek de olur.
- (58) Ucuz olsun ama yine de şık görünsün. Yani, müşterinin çok pahalıymış algısına kapılması temel hedef.
- (59) [...] bir yanlış var, kendilerinin beğeneceği aracı istiyorlar.
- (60) Maliyetlerini, elimizden geldiğince, düşük tutabileceğimiz, karlılığı yüksek olabilecek, bakımı kolay olabilecek gibi teknik özellikleri de tabii, doğru malzemelerin seçileceği gibi şeyler özellikleri içeren bir aracın tasarımını da tabii ki bizden istiyorlar.
- (61) Firmamız, otomotiv tasarımcısını tam olarak kavrayamadığı için bence şu anda için bir beklentisi yok hani, biz ne veriyorsak.
- (62) [...] tamamen yenilikçi olmaları (tasarımcılar), bana proje getirmeleri [...] hep yeni arayışlar içinde olmaları.
- (63) [...] tasarımcının buradaki en önemli rolü araca o kişiliği vermek [...] oran, proporsiyon, denge ve trendleri çok iyi takip ediyor olması lazım.
- (64) [...] araçta tüketiciye bir his, bir experience sunacağım. Onu tasarlamam gerekiyor [...].
- (65) [...] bütün bu süreçlerde otomotiv tasarımcısının elinin olması, çıkan aracın bütünlüğü, her açıdan doğru tasarlanmış olması için önemli.
- (66) [...] müşteri beklentileri ile de uyumlu olmak kaydıyla, o ürünün veya o şirketin imajına uygun farklılığı ve yaratıcılığı içinde barındıran ama bunu en ekonomik ve diğer tüm mühendislik şartnameleriyle birlikte uyumlu olarak yapabilecek bilgi ve birikime ve o uzmanlığa sahip olan tasarımcı bizim için en ideal tasarımcıdır
- (67) [...] disiplinler arası iletişimi sağlayacak çok çok ciddi bir bilgi sahibi insanlar olmak zorunda ve şirketin belki geleceğine bir şekilde yönlendirebilecek konumda olması lazım.

- (68) [...] ana firmaya support vermek.
- (69) Biz kendi işlerimizle ilgili kritikleri yurt dışındaki birimden alıyoruz, burada sadece yönetsel anlamda ki şeyleri yöneticimi takip ediyor.
- (70) Otomotiv gibi binlerce parçanın bir araya geldiği, çok farklı beklentilerin olduğu bir üründe, herkesin hayatını biraz zorlaştırmak gerekiyor.
- (71) Müşterinin veya şirket hedeflerinin belirlediği beklentiler doğrultusunda, yapılması gereken ürünleri belirlemek ve bu ürünlerin de bütün diğer şartnameleri sağlayacak şekilde, buna görsellik ve stüdyo dahil, yapılmasını sağlayacak tedbirleri, organizasyonu, ekibi kurmak, bunu yönetmek.
- (72) [...] artık bizim önceden aracı biçimlendirmemiz ve ona göre iskeletin yapılması.
- (73) [...] önümü aç, bizim yaptığımız şeylerin altına kendi imzamız ve motivasyonumuz olsun, yapılan doğru şeyleri tasarıma kesinlikle uygulat.
- (74) [...] yani teknik anlamda, benim yaptığım tasarıma kritik verebilecek nitelikte olması lazım, aynı şeyi konuşuyor, aynı şeyi görebiliyor olmamız lazım.
- (75) Tasarımcı tabii kendisine ürünün geliştirme sürecinde tamamlayıcı değil tanımlayıcı bir noktada bir rol bekliyor ki doğrudan bekliyor ve yaratıcılıklarını daha fazla ortaya koymak istiyorlar.
- (76) [...] muhakkak bir tasarım kökeni gerekiyor. Mühendislik kökeni ile çok bağdaşmıyor çünkü, fikirsel olarak, şu an biz, onu, projelerimizde hissediyoruz, kritik almıyor olsak bile, yaptığımız işte o bakış açısının eksikliğini hissediyoruz.
- (77) Tasarım yöneticisi benim anladığım tasarımcıdan çıkan yöneticidir.
- (78) [...] kuvvetler ayrılığı gereği, mutlaka onların bulunduğu ekibin başında endüstriyel tasarımcı olması gerekiyor.
- (79) [...] burası kesinlikle ve kesinlikle bir fabrika ve üretim odaklı, yani burada malzeme ucuz, burası stratejik bir noktada, buradan Orta Doğu ya ve şeye, dağıtım daha kolay.
- (80) Türkiye'deki otomotiv endüstrisindeki firmaların amaçları ve hedefleri bir ölçüde ana merkezin doğrultusunda hareket etmek, onun dışında bir şey değil [...]
- (81) Türkiye'nin bekası için bizim markamız olmalı, aracımız olmalı, çünkü olmazsa, Türkiye'nin ekonomisi zora girer.
- (82) [...] otomotiv ölçeğinde küçük firmalar genellikle daha çok hem kendi tasarımlarını yapıp bunun mühendisliklerini, çözümlüyüp, kendi araçlarını yapan firmalar daha çok küçük firmalar, büyük ve uluslararası ortaklı firmalar da, genelde, Türkiye'de fason üretim gibi işte üretim üsleri kuruluyor.
- (83) Avrupa'nın pazarının beklediği, büyük oyuncuların beklediği kalitede ürünleri, Türkiye'deki imalat avantajları dolayısıyla, çok daha rekabetçi fiyatlara verme peşindeyiz. Yerli rakiplerimizden Avrupa pazarında da ciddi bir şekilde ayrışıyoruz. Burada da endüstriyel tasarımın çok ciddi rolü var

- (84) [...] sadece sizin söz sahibi olabileceğiniz, sizin pazarınıza kendi öngörülerinizle sunacağınız bir ürünün olması aslında tasarımı gerçekten geliştirecek bir olaydır.
- (85) Bizim Sanayi Bakanlığı'nın bunu otomotivde yapması lazım, bana bir hafif ticari ve hafif ticari tasarla, bir konsept yarat demesi lazım.
- (86) [...] otomotiv tasarımına çok hakim olan bir yöneticinin import edilmesi gerekir, firma içinden yetiştirilmiyorsa eğer.
- (87) Yöneticilerin bir kere endüstriyel tasarım konusunda bilgili olmalı. Biz ne iş yapıyoruz tam olarak onu anlamaları lazım.
- (88) Design Manager Türkiye için gerekli değil banan göre, bu işi yapan profesyonel İngiltere de Almanya da insanlar var, geliyorlar, 7 gün 24 saat bu desteği veriyor.
- (89) [...] bazen neyin doğru olduğu değil de kimin daha çok sesinin çıktığı kabul edilir ya, bizde şu an öyle.
- (90) Sadece styling değil de, ergonomik ya da kullanıcı ile ilişki açısında da değerlendirilebilmemiz lazım.
- (91) Türkiye de bölüm açılması lazım üniversitelerde, uzmanlaşmış insanlar olması lazım.
- (92) Kendini geliştirmesi lazım [...] sınırları biliyor olması lazım, nerelerde ne kadar ne yapabildiğini bilmesi lazım.
- (93) [...] burada en önemli ve en kritik rol, Türkiye de henüz tam olarak var olduğunu iddia edemeyeceğimiz yetkinlik seviyesi.
- (94) [...] yetişmiş insanların, 10 senenin üstünde insanların üniversitede eğitim vermesini çok mantıklı buluyorum.
- (95) Türkiye'nin kendi pazarına gerçekten cevap verebilecek çözümleri aslında Türk tasarımcıları sunabilecektir.
- (96) Hiç bir rolü yok çünkü ipler başkasının elinde.
- (97) [...] kendi yarattığınız ürünlere mutlaka geçmeniz lazım, bu kendi yarattıklarınız sadece endüstriyel tasarım değil tabii, tamamıyla kendi sorumluluğunu ve lisansını elinde bulundurduğunuz ürünler olması lazım. Bugünkü ortaklık yapısı içerisinde bunları yapabilmek zor demeyim ama kısıtlı, çeşitli engeller teşkil edebilir
- (98) [...] firmalar dışarıya bağımlı kaldıkça, kendi içine, Türkiye içinde o bölümün açılıp da o bölümden mezun olacak insanların yetişmesini tetikleyemiyoruz [...] firma bu sefer yine kendi içini pas geçip, yurt dışına açılmaya başlıyor, yani, şu an böyle bir kısır döngü var.
- (99) [...] bize şunu yap derler, yaparız, öyle yapma şöyle yap derler, öyle yaparız, yapıyorlar yani ve bunlar bize tecrübe olması gerekirken, Biz şu an yanlış yoldan gidiyoruz, biz yapıları yapıyoruz ama know how ı kabul etmiyoruz, tekrar bir şey gelsin tekrar biz onu yapalım diye bakıyoruz.

- (100) [...] support verirken, bir takım şeyleri doğru düzgün yaptığını gösterirsen adamlara, adamlar yavaştan yavaştan sana başka şeyler söylemeye başlıyorlar [...]
- (101) Türkiye montaj ülkesi olamaya devam ediyor.
- (102) Yazılımın, malzemenin, başka şeylerin geliştirilmediği, onun bedelinin ödenmediği, yaşanmadığı, hissedilmediği ortamda insanlar tasarımın değerini nasıl anlarsın ki?
- (103) Ciddi detay var ve dışarıya bağımlılık kesinlikle yok, tamamıyla kendi bünyende çözebiliyorsun ki, zaten ekonomi globalleşti.
- (104) Okullarımız böyle giderse hiç bir değişiklik olacağını düşünmüyorum.
- (105) [...] bir marka oluşturulmadığı sürece, kendine ait bir marka olmadığı sürece, gelişmesi, üretim aşamasında daha çok olacaktır
- (106) Devlet politikası olmayanı yapmaya niyetli bir yapı ben görmüyorum. Zaten çok çok da zor, ciddi yatırım gerektiren şeyler.
- (107) Okullara el atılmalı, okuldaki hocalara el atılmalı, onda daha vizyon yokken o çocuğun yetiştirdiği çocuğun efektif olacağına inanmıyorum.
- (108) [...]size şehre gitmeniz için gereken araba bu, dağa bayıra gitmeniz için gereken taşıt bu deyip, onu bize söyleyecek insanın alt yapısını oluşturmaktır.
- (109) Bence bizim mesleğe biraz daha değer verirseler [...] Her şey o kadar ortak ki, fark yaratabileceğiniz tek şey tasarım.
- (110) [...] bu otomotiv sektöründe en kaliteli olan şeylerimizden birisi tasarımcılarımız.
- (111) Biz kendi markamızla yaptığımız araçları yurtdışına vermeye başladığımız sürece, bunların takibini yapıp o ülkelere göre o araçlarda revizyonlar yaptığımız sürece biz seviyemizi arttırmış olacağız.
- (112) [...] kolaylıklar sağlansın ki herkes cesaret edebilsin, cesaret ettikçe burada bir sürü yenilik olsun, yenilik olsun ki, bu sefer biz dışarıya hizmet verebilmeye başlayalım.
- (113) Çok büyük bir katkısı yok, bunlar hani, parayla ve politikayla ilgili durumlar olduğu için, onları etkilemesi [tasarımcıların] biraz zor.
- (114) [...] bu işte rol almış, tecrübe edinmiş, belli projeleri, belli aşamalarında çalışmış ya da hepsini yapmış varsa eğer, insanlar, belli koşullar altında bir araya toplanıp, bir şeyler yapabilirler.





## CURRICULUM VITAE

### PERSONAL INFORMATION

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### EDUCATION

#### Degree Institution Year of Graduation

MID	Pratt Institute, Industrial Design, New York, USA	2004
	Graduated with Award of Excellence	
BID	Pratt Institute, Industrial Design, New York, USA	2001
	Graduated with Award of Excellence	
High School	Gazi Anatolia High School, Ankara, Turkey	1996

### WORK EXPERIENCE

#### Year – Enrollment

2012	Speaker- 6. Ankara Design Week, Ankara.
2012	Chairperson- ETMK (Industrial Designers Association of Turkey), Ankara.
2012	Jury Member –7. FIRST Lego League, Ankara.
2011	Jury Member –6. FIRST Lego League, Ankara.
2010 – 2011	Industrial Designer/Consultant, Designnobis, Ankara.
2010	Jury Member –5. FIRST Lego League, Ankara.
2009	Digitization of archived products, Ay Tasarım, Vitra A.Ş., Ankara.
2009	Jury Member –National Packaging Design Competition, 2009, İstanbul.
2009	‘EAS Dinler’ Search and Rescue Device, Ay Tasarım, Tübitak MAM, Kocaeli.
2009 -	Instructor –Industrial Design Department, METU, Ankara.
2008	Jury Member - Bosch Toy Design Competition, İstanbul.
2008 - 2009	Television Accessories Design- Eliz Tic. A.Ş., Ankara.
2006	Speaker- 2. Industrial Engineering and Industry Summit, Bursa.
2006 - 2008	Chairperson- ETMK (Industrial Designers Association of Turkey), Ankara.
2005	Park meter Design-Aktema, Ankara.
2005	Seating Design- Levent Optik, Ankara.
2004 - 2009	Instructor –Interior and Environment Design Department, Başkent Uni., Ankara.
2003 - 2004	Assistantship - Pratt Institute, New York, ABD. (Teaching assistant and Research assistant)
2002 - 2003	Master Level Assistant - Pratt Institute, New York, ABD.
2000 - 2002	Design and Manufacturer - Sempliner Design & Development, New York, ABD. (Product development and prototype design and manufacturing)
2000 - 2001	Machine and Workshop Responsible - Pratt Institute, New York, ABD. (Helping student and running the workshop)
1998 - 1999	Computer Technician - Pratt Institute, New York, ABD. (Helping students with software and hardware problems)
1994 – 1995	Secretary - Verify Technology and information, Ankara.