

A SEMANTIC APPROACH TO THE RELATIONSHIP BETWEEN
BRAND IDENTITY AND EXTERIOR PRODUCT DESIGN
FOR VISUAL BRAND RECOGNITION,
THROUGH A CASE STUDY ON
LOCAL COMMERCIAL VEHICLE BRAND, TEMSA

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ABSTRACT

A SEMANTIC APPROACH TO THE RELATIONSHIP BETWEEN BRAND IDENTITY AND EXTERIOR PRODUCT DESIGN FOR VISUAL BRAND RECOGNITION, THROUGH A CASE STUDY ON LOCAL COMMERCIAL VEHICLE BRAND, TEMSA

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A corporation which is aiming to create a world class brand should evaluate its existing product portfolio as a first step to configure its future products better. Therefore, this study is performed with the collaboration of Temsa Global Company, who desires to create a global brand in the commercial vehicle area: Temsa. The aim of the study is to find out the relationship between the brand specific design characteristics and visual product design features with a semantic approach, through a case study on a local commercial vehicle manufacturer: Temsa Global Company.

Keywords: brand identity, design characteristics, product semantics, visual brand recognition

ÖZ

YEREL TİCARİ ARAÇ MARKASI TEMSA ÜZERİNDE YAPILAN ÇALIŞMA ÜZERİNDEN, MARKA TANINIRLIĞI İÇİN MARKA KİMLİĞİ VE ÜRÜN DIŞ TASARIMI ARASINDAKİ İLİŞKİYE YÖNELİK ANLAMBİLİMSEL BİR YAKLAŞIM

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Dünya standartlarında bir marka yaratma hedefindeki bir kurum, ilk adım olarak gelecek ürünlerini daha iyi kurgulamak için mevcut ürün yelpazesini farklı açılardan değerlendirmelere tabi tutmalıdır. Bu nedenle bu çalışma, ticari araç sektöründe Temsa ismiyle global bir marka olma amacıyla olan Temsa Global A.Ş. işbirliği ile hazırlanmıştır. Çalışmanın amacı, markaya özgü tasarım özellikleri ile görsel tasarım özellikleri arasındaki ilişkiyi tasarımın anlambilimi bakış açısından, yerli bir ticari araç üreticisi olan Temsa Global A.Ş. üzerinde yapılan çalışmayla ortaya çıkarmaktır.

Anahtar kelimeler: marka kimliği, tasarım özellikleri, ürün anlambilimi, görsel marka tanınırlığı

TO MY FAMILY

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CHAPTER 1

INTRODUCTION

1.1 Problem Definition

The global market conditions have started to change for the companies since a few decades. The main reasons for this inevitable change are the effect of developing technologies and communication availabilities. The new technologies which are the key subjects for competition within the companies started to spread in a very short period of time even to the remote places, therefore the dissimilarity between companies has started to diminish in course of time. Accordingly, the competition conditions evolved and companies started to need more permanent and prominent distinction and competitive advantage against each other. The solution for long term dissimilarity and competitive advantage was to create and feature the characteristics of the company to create "recognition" which is the key in an aggressive market. The formidable conditions of competitions are usually created by the messages of several brands. (Snelders et al., 2009) The "brand recognition" can be accomplished by a consciously and deliberately managed "brand identity," which is suitable and rooted from the company culture and range of activities. By the help of this brand identity creation for "brand recognition", companies started to communicate with their customers, they started to transmit some on purpose messages to their customers and express themselves with medium such as websites, commercials, advertisements, giveaway, services, logos, etc and the most importantly by their products. (Karjalainen, 2003)

The product itself might be accepted as one of the most essential media, which can create brand recognition, because it is accepted as a source of income for a corporation. (Schmitt and Simonson, 1997) However, the design of the product are usually the subject of "visual brand recognition". (Karjalainen, 2003) In other words, creating visual brand recognition with a product can be accomplished by creating rational connection within brand identity values and related merchandise in some way. (Borja de Mozota, 2004) A merchandise can only form this mentioned connection by its design. The design can be assumed as the source of first impression, which plays the most essential role to change and build ideas of people about the trade name and its merchandises. Since, the differences and superiority between engineering abilities of the companies have been diminishing; main interest is altering towards the representative character that embody the representative aspects of the product. (Karjalainen, 2003)

As mentioned earlier the design of a product is one of the most essential keys for brand recognition, to put differently; design is one of the strongest tools that can make the brand unique and identifiable. For instance, when a customer saw one of the globally known brand products such as a Sony TV, probably he distinguishes it as Sony, even the name and the logo of the product is removed. Moreover, he might also perceive some messages referring to the meaning of the Sony brand. He can feel these hidden messages by only looking at it. Therefore, it can be said that the design can communicate. (Aaker, 1996) In other words, it can be understood that a denotation referring to a brand can be transmitted to the people. It is also obvious that the identification and discrimination can be accomplished by conveying messages through the design and harmony in design language together. (Kreuzbauer and Malter, 2005) The design language of the product should be coherent with the past and the current product portfolio of the company; therefore creating a harmony in design language can be achieved in time and it results in well-built uniqueness of a brand name when it is used with consciously and deliberately for conveying denotation. (Karjalainen, 2003)

Turkey, as being a developing country with its growing economy is also noticed the importance of branding. Therefore, a few years ago Turkish Government started a branding project called "TURQUALITY®." The reason for the project is declared as "Because of the increasing competitive conditions and changing consumption patterns, it becomes heavy to participate in the international arena; therefore the companies should be encouraged to create stronger brands meaning more added value, more and more market share." The aim of the project is summarized under two titles for this program: The first one is; "Increasing the export rate by developing strong competitive global brands." The other one is; "Strengthening the reputation of Turkey and Turkish-made image by developing strong international brands." TURQUALITY® is the first and the only state-supported branding program and most of the domestic companies applied for the program, one of the candidates is Temsa Global Company who is the first accepted company to the program among the local automotive industry. (TURQUALITY® official homepage)

Temsa Global is the commercial vehicle manufacturer owned by the Sabanci Holding, which started its coach production activities at its Adana production facilities in 1987. Temsa Global continues its bus, midi bus and light truck production with the objective of, first becoming a regional power, then realizing its vision "to be a world class global brand," and fulfilling its mission: "As a commercial vehicle producer, together, we create innovative solutions for the customers."

In Temsa Global Production Facilities, different types and segments of coaches, and midi buses are produced for both Turkish and European market. These products are being exported to 46 countries.

Temsa Global, with new products, new businesses and new geographies, is going forward in its path of becoming a 'global brand', aiming to transfer its knowledge and experience in design, production and marketing to America, North Africa, the Middle East

and Gulf countries as well as the European countries. (Tems Global Company, official homepage)

Similar to other brands that achieved to be globally known, Temsa Global aims to create a new brand architecture around the brand name, "Tems." Within this new brand architecture for the future, one of the goals for Temsa Global is to generate a sensitive and logical link between the brand identity and the design of the products. However, before starting to modify the relationship within brand and product design, Temsa Global needs to evaluate the existing situation for the subject. In other words, there emerged a need of determining current Temsa brand design characteristics and their relationship level with the design of the Temsa products.

The aim of the study is to find out the relationship between the particular design characteristics and visual product design features with a semantic approach, through a case study on a local commercial vehicle manufacturer: Temsa Global Company. As a result, this study is performed with collaboration of Temsa Global Company, who desires to create a globally recognized brand and products in the automotive area: Temsa. Therefore, throughout the study the subjects of design strategy: Major design features, and intended design characteristics of the current Temsa products are identified, and then the semantic relationship between them determined and evaluated from a semantic and visual brand recognition point of view.

1.2 Scope of the Study

The study offers the semantic relationship between current Temsa intended product design characteristics and the identified exterior design features of the selected products from the visual brand recognition point of view. In the following chapters, definition of terms, concepts, measurement methods used, tools and factors related to brand-product

design relationship will be discussed according to related literature. Later, the exterior design features, their characteristics, the effect of their existence to the visual design of some chosen Temsa products will be underlined and discussed with the data acquired from empirical studies.

The primary research question of the thesis is:

- How can a brand improve its visual brand recognition through its product design?

The subject will also be investigated with the following secondary questions below:

- How can the message of a corporate identity be transmitted through product design features?
- How can a brand be recognized through its visual design features of the products?

1.3 Motivation of the Study

The main reason for choosing Temsa brand and products as a case is the researcher is one of the in-house designers of the company. Moreover, the general frame of the study was decided by the management of the company. The company started to build new brand architecture suitable with the mission and vision of the company and decided to make a preparation to reorganize all of the activities of the company according to the new brand architecture, including the product design. Then, it was decided together that creating a strategic link between the brand identity and the product design, -as most of the global brands have done- would be the most critical part of adjusting product design activities according to the new brand architecture. However, before starting to make such an adjustment, the current product was asked to be evaluated, in order to understand what was done right and wrong previously. Another reason

for current portfolio evaluation was not to neglect the past, while starting an approach for future of the company.

On the vehicle design, the first contact point with the customer is the exterior design, which means the first impression in the people's mind created by the exterior design. In addition, it can be seen and evaluated by more people than the interior design. Therefore, its effect to the visual brand recognition level is more than the interior design, and it is the main reason behind, this study is focused on the exterior design of the products.

1.4 Structure of the Thesis

In order to create a lean, consistent and compact subject flow, the structure of the literature of the thesis is built on a straight order manner, which is starting from the corporate identity definition, goes on with brand identity, and ends up with the product design as being a representative tool.

The thesis starts with a chapter covering the whole relationship chain starting from corporate identity to product design features. Each ring of this chain is handled by references from directly related literature, since each of them is very wide subjects and handled from different perspectives. However, for this study the semantic and visual recognition approaches to the subject are crucial.

The concept of representative product qualities, role of the brand for companies, strategic meaning creation with product design and semantic transformation, and other concepts thought to be related with subject will be discussed in this chapter in the light of the related literature.

The third chapter elaborates on the related literature in order to clarify existing methods and tools for measuring and evaluating symbolic representation and representative product qualities. In this chapter,

variety of methods, which were previously used in similar researches are mentioned. The handled methods were found to be used in similar measurements for exterior design of automotive products, previously.

The fourth chapter briefly has the aim of identifying the design features which will be evaluated throughout the study, spotting the "major design features" (Karjalainen, 2003) out of them, and finding out the intended design characteristics for Temsa products, and finally determining the relevance between intended Temsa design characteristics and Temsa product design features.

The final chapter evaluates and summarizes the outputs of the previous chapters and mentions the limitations of the study and suggestions for further research.

CHAPTER 2

THE WAY THROUGH CORPORATE IDENTITY TO PRODUCT DESIGN

2.1 Corporate Identity

The borders in marketing and markets have started to vanish because of the fast technology and information exchange coming with the globalization. Companies were not contented with the local markets and needed to walk into new and international arena for more profit; unlike it used to be in the past. The market globalization resulted in increasing competitive conditions, created various types of consumption forms, and diminishing in the engineering ability differences within the companies and their products and services. (Karjalainen, 2003) The competitive advantage against the rivals could be accomplished by originality. Under these circumstances of the markets and the competition for the companies, originality could be created with having distinctive individuality. Corporations may be described through particular characteristics, which are used to define people. (Krippendorf, 1989) characteristics signify the company and form a bond with some particular feelings, which are associated to the brand name. (Karjalainen, 2003)

Corporate identity may be considered as the individuality of a company. In other words, corporate identity is the symbolizes the qualities of the company. (Markkanen, 1998)

According to Eok et al. (2003) corporate identity should not be assumed as only graphic design, single activity or only a corporate public relations program. Moreover, corporate identity is related with all activities of a

company. Corporate identity can be transformed into a strong corporate image with a purposefully and tactically executed corporate interaction – the way the company presents itself through corporate design and is corporate personality. A strong image increases the company’s competitive advantage, since it provides credibility. Therefore, organizations with poor corporate image do not have long-term survival.

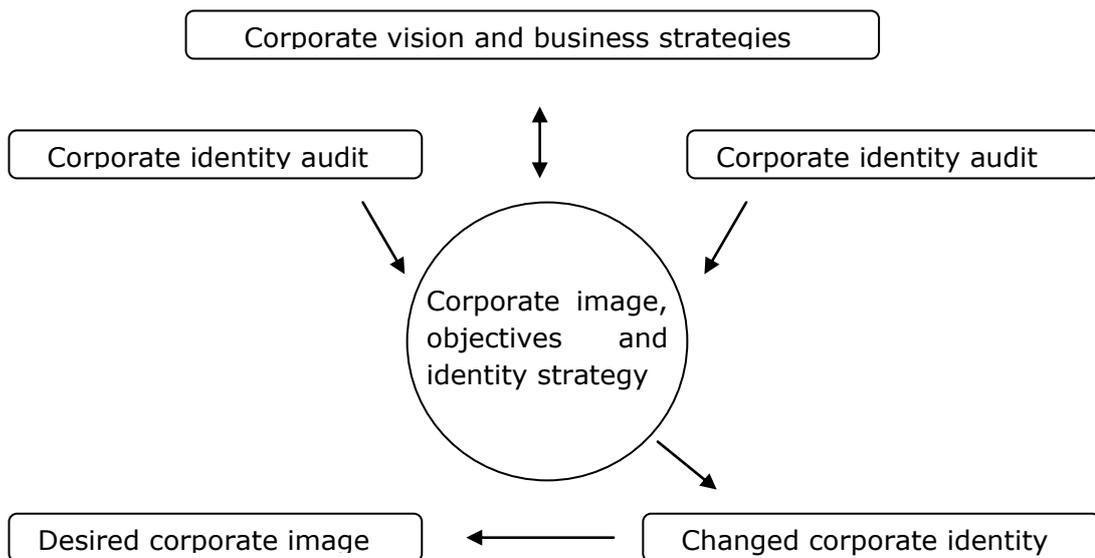


Figure 2.1 Creating Corporate Image (Eok and Young, 2003)

According to Eok and Young’s diagram, a corporation can design its corporate image and make adjustments based on:

- The corporate vision and business strategies for the organization
- Understanding of how the corporation is currently perceived by target audiences
- In-depth analysis identity strategy defines how the corporation needs to change its identity to realize the image it wants to create with its target customers.

The meaning of corporate identity concept, which is the source of the corporate image, is discriminated into three theories by Cornellißen and Harris: (2001)

- **Corporate Identity Meaning Corporate Individuality:** In this approach, corporate identity is defined as the representation of the company's ordinary nature, connection of that corporation with the environment and rooted from the foundation and history of the company. (Baker and Balmer, 1997; Bernstein, 1984)
- **Corporate Identity Meaning Executive Fact:** In this approach, corporate identity is assumed as a fact directed by a domestic executive organization; therefore it includes a purpose and a planned and tactical attitude in addition to the previous approach. The company is in communication with its environment with its particular features - its identity. The history, business scope, vision and mission, commercial tactics, beliefs, values, traditions, and the range and type of the products and services of the company commonly generate this identity. Since, they are parts of an executive organization; there is an external intervention to the identity. Therefore the identity can be assumed as man-made and not as pure as in the first approach. In order to give the intentional message right and clear enough, companies having this approach create a major message a stress on it.
- **Corporate Identity Meaning Manifestation for a Company:** According to this approach, corporate identity is not only the perception that is aimed to be created; moreover, it is about how the company is perceived by the environment. In other words, the perception of the company by the people is the real identity of that company, which means a company can be perceived with several identities, because of the personal viewpoints of various people. As a result, in this approach companies do not have the objective of transferring messages about their values and identity; instead, they create the identity tactically consistent with the circumstances they are living in. (Grinyer, 2002) The companies

who have the short life products, firmly different customers from various markets, mainly embrace this approach. For instance, Nokia is adopting this approach for these reasons and adapt its perceived identity according to current needs. (Karjalainen, 2003)

2.2 Brand Identity:

In order to create a direct and quality communication, companies should transmit their essential messages to their environment clearly and readily. The essential messages can be sourced from the major identity of the company. The major identity of the company is generally represented in the "brand identity", since the brand identity carries the essential message on behalf of the company. Therefore, the character or the message, which is intended to be reflected with the communication tools of the company, can be reflected easily and truly through the brand identity. (Karjalainen, 2003)

The brand name is the most significant tool that concretizes the identity, features and values in the audience's mind. It functions as an indication, signifying particular meanings. (Snelders et al, 2009)

On the other hand, for customers, brands originate preference, simplify purchasing evaluation and choice, offer quality promise, and diminish threats implicated in purchasing. (Kathman, 2002)

One of the most essential aims of the companies is to express them truly, simply and evidently, the interaction with the audience should source from the major identity characteristics, which are found in the brand identity. The brand identity conveys the essential message about the company and brand itself.

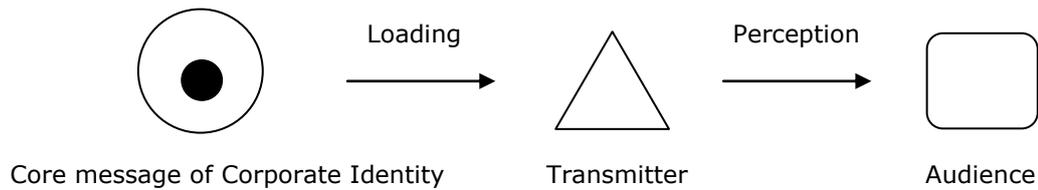


Figure 2.2 The core message (brand identity character) is loaded on a transmitter (tool like brand name), then it is perceived by the audience.

The communication with the audience generates a portrait in their minds about the brand, which is called brand image. To put differently; the brand image is a biased psychological portrait of the brand represents to a group of audience. The brand image is created by the media such as products of the brand. The integration of the brand and product identity is an essential part of the strategic executive system, because a brand that creates incorporated design includes the meanings, utilities, promises and processes represented by the product. (Eok and Young, 2003)



Figure 2.3 The logic of integration of the brand and product design. (Eok and Young, 2003)

Since the brand identity indicating both planned and innately created characteristics, sort and excellence of the brand identity message should be restrained and regulated according to the changes occurring in time. In fact, the brand identity needs also detailed executive organization with a planned and tactical approach. While the product itself and its visual design is one of the most important tools generating the communication

between the corporation and the audiences, product design is also the part of this tactical executive organization.

2.3 Using Product Design to Communicate

“Using product design to communicate with the environment requires a certain knowledge about product functions”. (Karjalainen, 2004) The approaches to the product functions are quite similar in the literature. The product functions are divided into two main titles: “Practical functions” and “Language functions”. (Steffen, 2000 and Gros, 1983) On the other hand, according to another approach it is classified into two similarly but with different terminology: “Technical functions” and “Interactive functions”. (Warell, 2001)

When the message transmission through the product design is mentioned, “product design semantics” concept comes forward as a communication tool within brand identity and customers. Product design semantics is one of the product functions, which have direct relation with the physical properties of the product of the brand. Particular characters of man can also define products, similar to brand identity. (Krippendorf, 1989) These physical descriptions are consisting of qualitative identifications such as size, textures etc. These descriptions work as identifications that distinguish the product and the brand from others. (Karjalainen, 2003)

Table 2.1 Categories of product function

Function Class	Function type		Descriptive words
Technical Functions	Operative	Primary	Transforming Rotate Transform Transmit
		Secondary	Control Communication Interface Power Protection Convert Regulate Supply
	Structural		Connect Restrain Support
Interactive Functions	Ergonomic		Enable Facilitate Protect Suit
	Communicative	Semantic	Describe Express Exhort Identify
		Syntactic	Balance Connect Discern Refer

Therefore, the semantic functions of the product are essential for creating distinction from rivals and generating brand recognition and it creates a figurative communication between the customers and the product. (Krippendorf, 1989) In other words, The design can be assumed as the source of first impression and first contact point which plays the most critical role to change and build ideas of people about the trade name and its merchandises to recognition. (Berkowitz, 1987)

2.3.1 Product Design as an Instrument for Visual Brand Recognition

The visual design of the product needs to have the ability to create recognition of the brand, since one of the main goals of the companies is to create a distinctive perception of themselves among their rivals in order to gain a permanent competitive advantage with their unique corporate and brand identity individuality. The visual properties of the

product design plays a critical role for the personal opinion of the primary end-user, evaluation of products and final selection of the product purchased. (Veryzer, 1998)

Most of the products created by globally known brands are not only known for their high quality, but also for their identifiable design. Therefore, recognition of the design of product means recognition of the brand. The identifiable and distinctive design is accomplished by a steadiness in design language. Moreover, steadiness also helps brands create noticeable dissimilarity from their competitors. Hence, the product discrimination can be accepted as an activity what makes brands succeed or vice versa. (Karjalainen, 2007) For instance, the design language of the Peugeot products is noticeable among others, and somehow customers can recognize the Peugeot product from its visual design language. In addition, when customers see an Peugeot car in a showroom, they receive some messages about it and the Peugeot brand. These qualities are also considered for the brand of the product and results in a brand image, which creates recognition among customers.

There are two approaches for generating brand recognition with product design: (Karjalainen, 2007)

- **Creating Designs with High Aesthetic Value:** According to this approach, companies can create products with high aesthetic qualities and eye-catching designs, which probably results in a strong brand image for the company. In addition, there is no strong connection between the product design language and brand identity that can be easily perceived. The only strategy may be considered as taking the decision of creating good-looking designs to generate brand recognition with solid brand image. (Page and Herr, 2002) Therefore, this approach may lead companies to have more divergent look product portfolio, which may negatively affect the brand image, unless it is not adjusted strategically and accurately.

- **Product Design with Creating Deliberate Meaning:** In product design with creating deliberate meaning approach, companies transmit deliberately created meanings through visual product design to their customers. The meaning diffusion is between the brand identity and product design. When some of the design features selected strategically and used consistently, the companies reach a high level of brand recognition. The strength, success and permanency of the brand recognition are possible with product design with deliberate meaning creation approach and steady use of meanings and design features with a planned strategic attempt. In brief, design has a solid effect on transmitting major brand values. (Creusen and Schoormans, 2005) In short, product design can be used tactically to create a successful brand identity and visual recognition with value. (Stompff, 2003)

“On the other hand, when the relationship between design features and major brand identity is not existing, the design feature is called artificial. However, this kind of design features can also become influential marks for brands with steady use. BMW kidney shape grill is an example for this kind of artificial design features.” (Karjalainen, 2007)



Figure 2.4 The kidney-shape grill as an artificial design feature used steadily over the product portfolio. (BMW homepage: www.bmw.com.tr)

The steady use of the design features may improve the potency of the visual brand recognition, however too much strictness in use can result in unnecessary conservativeness and perceived negatively by the customers. (Pugliese and Cagan, 2002)

2.3.2 Types of Product Design Features for Creating Meaning

As mentioned earlier, design features are essential for creating meaning and its transition. They can be identified as form elements, detail treatments, materials, colors, and textures. (Chen and Owen, 1997) Design features are associated somatic domains; on the other hand, brand characteristics are associated verbal domains. The process, which results in a meaningful message between these two domains, is called "semantic transformation". In semantic transformation process, some specific characteristics are declared as core brand values as "adjectival words", which are specific for that brand and constitute brand or product characteristic. These definitive words are translated into physical, visual features and elements and used in the design of the product. In other

words, the brand characteristics get embodied in physical design features of the product. (Karjalainen, 2004)

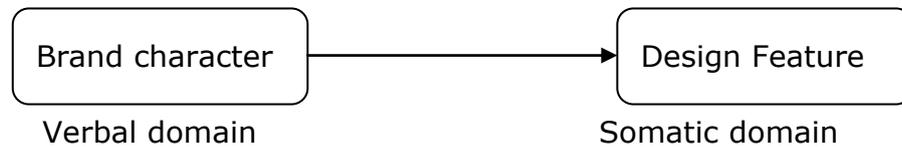


Figure 2.5 The Semantic Transformation (Karjalainen, 2004)

Volvo, since it takes its identity from “Sweedishness” concept, its brand characteristics are “safety, Scandinavian and dynamic”, however Nokia which is also a Scandinavian, aims to be perceived as personal, friendly, and human. The most important point is to translate these characteristics into physical design features. (Karjalainen, 2004)

The perception of the meaning through visual features is an personal matter that differs among various people. The subjectivity of the issue makes it a challenging job. However, among people, there are some globally accepted visual language references or signs referring to the similar meanings. For example, warm colors and rounded forms may be accepted as “approachable, friendly and domestic” by most of the people even from different cultures. (Janlert and Stolterman, 1997) If general visual verbal references can be used while semantic transformation the efficiency of the process will be increased probably. On the other hand, another significant point is to be understood by the target customer is sufficient for semantic transformation process. (Karjalainen, 2007)

Since the design features are the physical contact points with the customers for meaning translation, and meaning perception changes from one person to another, the scale of clarity and lucidity of both the design feature itself and the message transmitted becomes an essential subject. Therefore, design features can be divided into two according to their obviousness over the design of the product: (Crilly, 2005)

- Evident (Explicit) Design Features:** The designers use evident visual references intentionally, as explicit design features to be perceived directly and at moment by the target customers. These design features may be shapes, colors, materials, and textures, cut lines between the surfaces, surface geometries, and similar kind of physical elements. In addition, they must be used steadily and clearly over the product portfolio to create recognition. However, explicit design features should be balanced between constant, evolutionary and revolutionary design approaches. Explicit design features can be used as both artificial or identity based. "For instance, while the previous example for BMW kidney-shape grill is artificial and explicit, the V-shape bonnet of the Volvo car is identity based and explicit". (Karjalainen, 2003)



Figure 2.6 The explicit design features of Volvo cars (Karjalainen, 2003)

The "family look" concept is important for the companies since their intention is to create harmonious product families. (Warell, 2001) The explicit design features can be used for generating the family resemblance over the product portfolios with steady use and become major design features specific for those brand products. These major design features are the main agents those can create noticeable distinction, and recognition for the brands and products. However, the use of explicit design features is a challenging task. The overuse without

harmonizing the newness and similarity with the past and deciding the constant, revolutionary and evolutionary design approaches are essential to prevent unfavorable outcomes. The good design is not consist of set of design elements chosen from a pool. (Yamamoto & Lambert, 1994)

- **Obscure (Implicit) Design Features:** In order to create newness for visual design impression, designers should use obscure references. The implicit design features cannot be easily discriminated and perceived, however they are always value based and when used, they are useful for harmonious and accurate design language. The success of an implicit design feature can be measured by looking if it is communicating with brand characteristics and used harmoniously and precisely in the design of the product. The level of the brand/product recognition will be affected positively, if the implicit features are used harmoniously with rest of the features, but the implicit features are perceived and recognized unconsciously. In other words, these are the features that cannot be easily detected and understood by uninformed ordinary customers. (Snelders, 2009) The development of the identification of implicit references are comparable to the recognition of the man face, which is an unaware procedure. (Rakover et al., 2001)

The small bend in the rear window in the C-pillar called Hoffmeister kink of most of the BMW cars creates the impression that the back of the car sits precisely on the rear wheel axis since 1960s. Even after detecting it most people may still not be aware of how important the bend for their perception of powerful, rear-wheel drive car. (Snelders, 2009)



Figure 2.7 The Hoffmeister kinks of BMW saloon cars since 1961 to 2000s. (<http://www.newmediacampaigns.com/files/posts/hofmeister/hofmeister-history.jpg>)

Implicit design features usually interpreted and implemented as various features by the designers, referring to same characteristics and meaning. They are used for alternating design features and creating a fresh appearance for the design of the product by still communicating with brand identity. However, when they used repeatedly, they become explicit design features. (Karjalainen, 2007) However, their meaning may still remain obscure.

The meanings transferred by both the explicit and implicit design features are related with the deliberate communication of the brand with the outside world. Moreover, the representative indications used as design features reach their solid meaning within market aimed. Outside it, they may be perceived as illogical or pointless. On the other hand, the design language of a brand should include both explicit and implicit features. (Karjalainen, 2004) There should be a planned and tactical stability between implicit and explicit features, creating evolutionary and revolutionary for the design approach.

2.3.3 Product Design Approaches for Corporate Design

In order to set up the balance between explicit and implicit, innovative and conservative, evolutionary and revolutionary design approaches; product design type knowledge is needed. As previously set, it is the universal feeling which is crucial regarding communication and recognition. (Yamamoto & Lambert, 1995) So, design approaches can be discriminated into three types accordingly: (Eok and Young, 2003)

- **Convergent (Steady) Type Product Design Approach:** Steadiness and harmony are the key issues for creating steady type of product design and the meaning can be found in the definition of the recognition, which means "re-cognition, identifying something by its style". (Krippendorff, 2005). Some of the design features are used repeatedly without any extreme conversion, to create harmonious appearance over the product portfolio to create recognition. "For instance, Sony Flat TV designs are steady type, the style emphasizes the screen with separated different color frame and expresses silver metallic front image. These features can be seen in TV models and represented as Sony style".



Figure 2.8 Sony TV product family. (Eok and Young, 2003)

- **Divergent (Unsteady) Type of Product Design Approach:** The design language of unsteady type design approach does not have clearly perceived consistency relation with past and current product portfolio. The design of the products may be more innovative than the steady type. However, there is still a link between past and the new product even though it is weak. For instance, Sony AIBO style is an example of divergent type of design.



Figure 2.9 Sony AIBO (Eok et al., 2003)

- **Hybrid Type of Product Design Approach:** In the hybrid type of product design approach designers come up with a new, innovative product, but they put great energy to maintain steadiness of design with related to next coming products. B&O is an example that has the hybrid type of product design approach.



Figure 2.10 B&O product family as a hybrid design example. (B&O Official Homepage)

Since creating steadiness and variety within the product family is a very essential issue of the strategic design approach to accomplish the brand identity related product design and visual brand identity; the diversity and conversion classification must be set clearly.

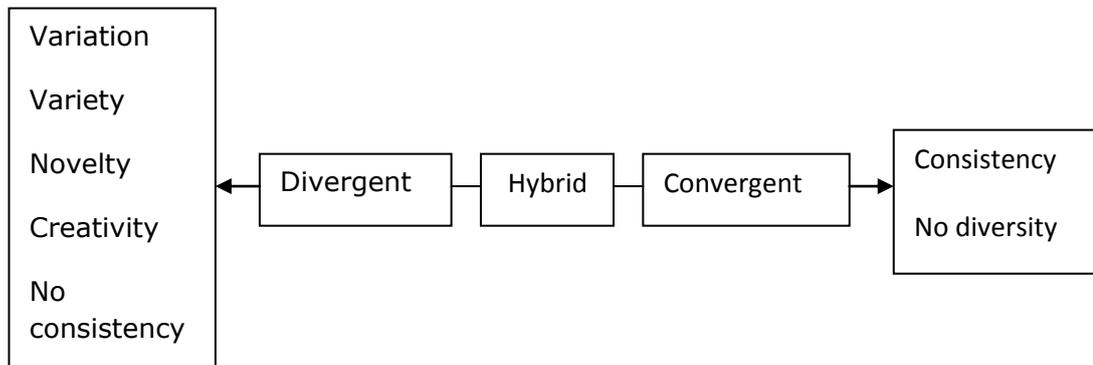


Figure 2.11 Diversity and conversion classification chart (Eok and Young, 2003)

2.4 A Brief Conclusion

In the market, the success of a product is one of the most essential issues for the performance and success of a company, and they can transmit the values, aims, culture, and most importantly the character of a company to the customers. They also generate an image on customers' mind with their performance and affect customer impression and future of the corporation. Design, which creates the first contact with customers and first impression on their minds, plays a critical role on increasing the success of the product. Design has also the role of communication with users, which means that the design of the product can transmit messages. This particular feature of the design lets companies to express themselves - their identity - as a company and a brand. The most critical issue of the process is to be specific with identity and transmit it with a particular design language, which mainly create the visual discrimination from rivals clearly more than the technical features. The planned and tactically executed product design process is an organization that aims to

create a positive recognition of the corporation, brand and the product. The management and application of such an organization within personality of brand field and product design field needs a well planned approach for both design management and corporate identity management issues. To put differently, the main task of the brand and product design managements is to create a beneficial message, which is deliberately prepared for target customers. (Conradi, 2001) In such a case, product design can be assumed as an fundamental part of brand identity. (Aaker, 1996)

In order to internalize such kind of system, companies may prepare "design guidelines". The design guidelines are a set of rules, examples and guiding principles for the design process. They aim to lead and inspire the visual design direction, as well as the approach, processes and decisions for product design. The guidelines assist to expand company's identity and values into 3-dimensional design identity and features. They also aim for a recognizable and family look over product portfolio, reflecting the brand identity and visual recognition.

CHAPTER 3

EVALUATION METHODS USED IN THE STUDY

Evaluating visual design properties is a difficult job, since the visual tastes and understandings can be very personal. Visual design is more related with feelings and intuitive subjects generated in people's minds. In other words, the image of the product has the ability to form the emotional requirements, more than the technological features of the product. (Baxter, 1995) According to this approach, the main subject influencing preferences of the people while giving the purchasing decision, is the aesthetic and representative features of the product design. These emotional qualities also have an effect on their satisfaction while using the product. (Chang et al, 2003) As stated previously, the success of a brand and the product is related with customer satisfaction for both technical and representative functions of the product. In addition, to create identification, representative qualities of the product generated from the brand values, with a specific design language is a crucial task for the designers, since for the companies it is an "issue of live or die" through the vast variety of the products. (Karjalainen, 2003)

The visual properties of a design of a product are commonly up to the preferences of a single designer. However, the successful design cannot be accomplished by single designer's individual preferences. In order to decrease the threats of disappointment of the product design, the information from customers' evaluations and preferences regarding the product design, should be included during the different stages of the design process. (Schütte, 2002)

Chang et al. (2006) lists the advantages of using evaluation and measurement tools during the design process as such:

- The availability to discriminate various aspects of a product such as usability or attractiveness,
- The benefit to represent the value of product characteristics in the sense of scientific indications,
- The benefit to distinguish the complete and fractional form.

To conclude, the evaluation of product design with customers and providing results for the design process before and during a new design project is a crucial task to increase the market success of a product and a brand. Therefore, in this chapter the methods that are used throughout the study will be mentioned: Design Format Analysis Method (Karjalainen, 2007) and Semantic Differential Method (Osgood, 1957) These methods are the only available methods previously used, directly for evaluating the exterior design of automotive products from a semantic and visual design recognition perspective. Other methods, which were not used for exterior design evaluation in the similar previous studies, will not be mentioned in this chapter.

3.1 Design Format Analysis Method

After a company defined its brand values, the link between brand values and product design should be created. As mentioned previously, the principles, the rules and the strategy of this link can be defined in the design guidelines. However, the companies should evaluate their current and previous portfolio before planning the next generation product portfolio and design strategy. The evaluation should be started with identifying the meaning in the explicit and implicit features of the visual design. After completing these studies, the results should be used as an input for visual design and design strategy processes.

In order to identify design features Design Format Analysis (DFA) (Warell, 2001) can be used. The occurrence of selected design features among the product portfolio can be determined and using DFA can state the level of explicitness of design features, which embody the visual recognition of the products. (Karjalainen, 2007)

At the beginning of the DFA application some of the design features should be selected according to their importance or appropriateness for visual recognition among the product portfolio. The in-house designers of the company should make the decision of selected features; otherwise it will not be objective enough. After the selection of the design features, products are tested with the users to determine whether or not they evidently integrate these features. The analysis can also start by inspecting the products separately, to define the different features they have and increase the variety of features involved in the examination. The design features analyzed through the DFA may be forms, materials, textures, lines etc.

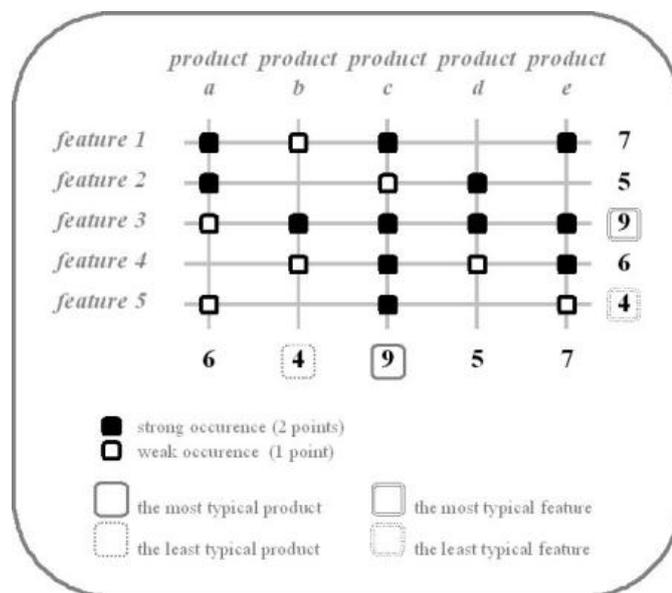


Figure 3.1 The application of the Design Format Analysis (Warell, 2001)

From the DFA, strong occurrence of a specific feature in a specific product can be marked, by summing up all the occurrences, design features and

products can be put in order in terms of their consequence for visual brand recognition. (Karjalainen, 2003)

At first glance, since the results are affected by the selection criteria of influenced features and products, the reliability can be seen as problem.

In addition, the decision for the occurrence of features in products can also change according personal preferences. However, the objectivity and reliability can be accomplished when the method is used among well-informed user groups such as designers or a variety of groups whose numbers are adjusted logically. (Karjalainen, 2007)

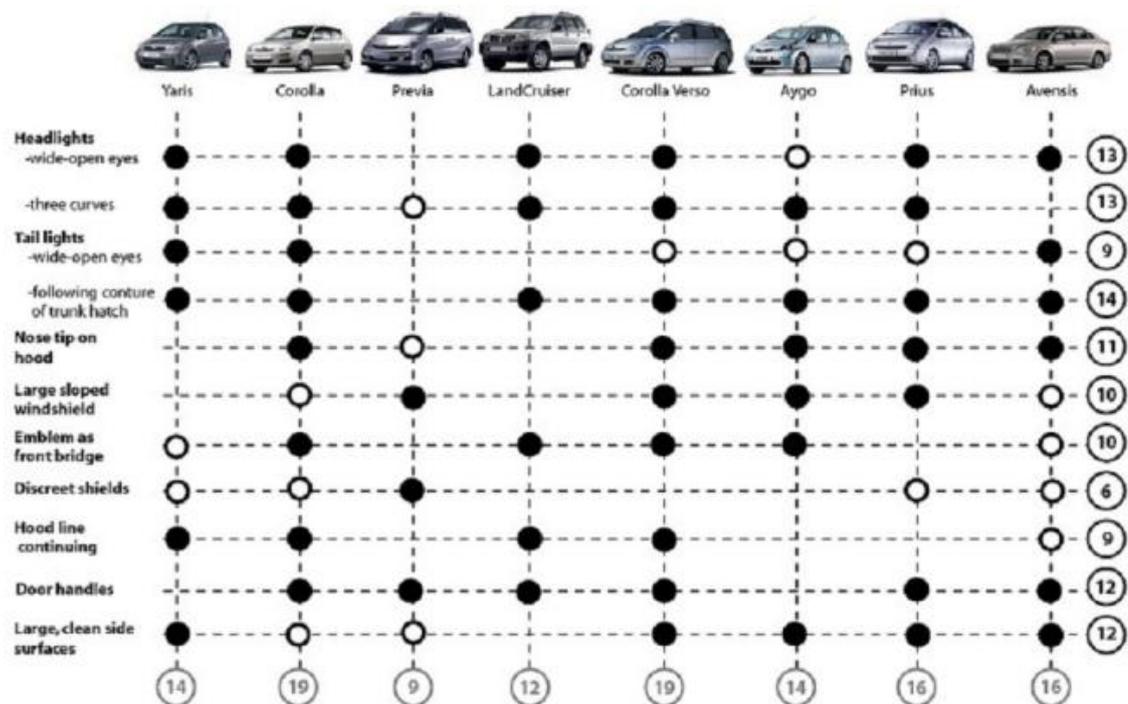


Figure 3.2 Design Format Analysis application layout. (Karjalainen, 2007)

3.2 Semantic Differential Method

The relationship between design features and brand values can be identified by using the Semantic Differential Method. The method is used for obtaining more unbiased assessments of design features. (Karjalainen, 2007)

Semantic Differential Method has been developed by Osgood et al. (1957) to analyze the meaning aimed to be created by the design features.

As mentioned previously, brand/product characteristics and product design features can be defined similar to the human characteristics. People use adjectival words to define or communicate their perceptions and emotions about an object. Therefore, semantic differentiation can be defined as a measurement instrument to question and explore the perception of customers between the products and adjectival words that people use to define them. (Alcantra, 2005) The adjectives should be given with their antonyms along a seven point scale during the application of the method. The aim of using such a scale is to make adjectives more evaluative for user tests. (Osgood, 1957) However, according to the Karjalainen et al. (2007) the seven point scale may be constructed along "not at all associated" and "strongly associated" ends. Constructing the scale with antonymous adjectives might be problematic, since the validation of word pairs is another subjective and a challenging issue. Therefore, seven-point scale similar to Karjalainen and his colleague's is more practical to apply.

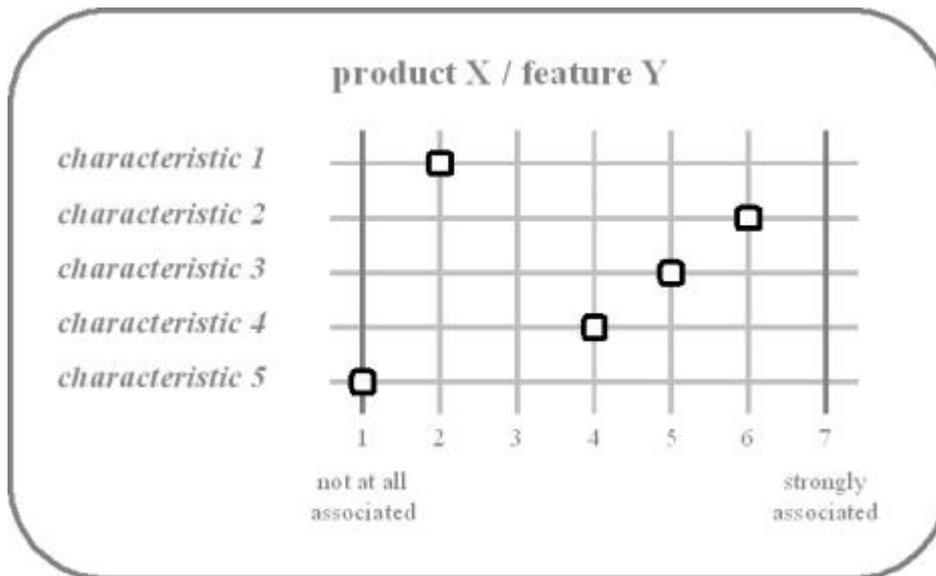


Figure 3.3 Semantic Differential Method layout (Karjalainen, 2007)

A semantic scale with numerous dimensions is used to evaluate the results obtained from the seven point quantitative scale. There are three dimensions of semantic scale according to Osgood et al. (1957): "Evaluation, Power and Activity". These three concepts are assumed as universal for any social environment, and the adjectives used in the seven point scale are classified according to these definitions:

Evaluative Dimensions: These are the adjectives used while making evaluations, i.e. good-bad, conservative - avant-garde

Power Dimensions: These are the adjectives associated with power and strength, i.e. powerful-weak

Activity Dimensions: These are the adjectives related with being active-inactive.

The evaluation of semantic is based on the two opposite ends of the scales. On one end of the scale unfavorable meanings, such as bad, weak inactive etc. are located. On the other end favorable meanings such as good, strong, active are located. To calculate the result, all ratings are summed for each scale, which represents a single person attended to the process. If 10 people attended, then 10 points will be the minimum (the

most unfavorable), 40 will be the neutral and 70 will be the maximum (the most favorable) scale for that scale. (Osgood, 1957)

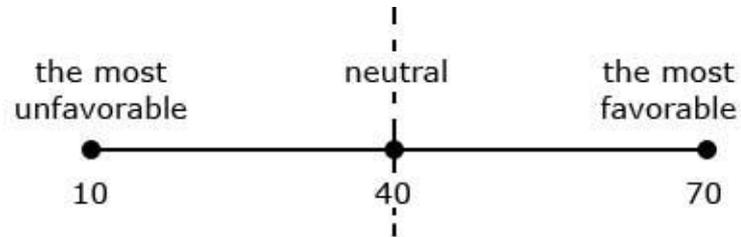


Figure 3.4 An example for the Semantic Differential evaluation scale.

The method serves advantages such as practical application, easy evaluation process; therefore, it is widely used on semantic researches. However, the perceptions and emotions are subjective concepts; therefore, the consistency in participating people is an essential issue to eradicate inconsistent outcomes. (Alcantara et al, 2005)

CHAPTER 4

A CASE STUDY ON A LOCAL COMMERCIAL VEHICLE BRAND, TEMSA

In this chapter, the following issues are assessed primarily through a set of quantitative studies, among some of the products of Temsa product portfolio: The intended product design characteristics of current Temsa products, the major design features of chosen products, and the semantic relation of major design features and intended product design characteristics. In this study, a design feature has no meaning without a design element or vice versa. The most typical and significant design features of Temsa products, the most typical product of Temsa product line-up with regard major design features, the product best reflecting the Temsa intended product design characteristic are also assessed secondarily throughout the study. In addition, through this chapter, details about the methods used during the survey, subjects to whom questionnaires were applied, the primary and secondary results, and the discussions of findings are mentioned.

4.1 Objective of the Study

The visual properties of a design of a product are generally up to the preferences of an individual designer. However, the successful design cannot be achieved by individual designer's subjective preferences. Therefore, in order to eliminate the disappointment probability of the next generation products in the current product portfolio should be evaluated. (Schütte, 2002) The perceptual results and effects of the

design features applied previously by the designers should be indicated to build up a strategic design process supporting the brand identity and vision and aims of the company.

As previously mentioned Temsa Global Company is aiming to be a global brand and starting to build up new brand architecture according to this desired aim. Therefore, the design process of Temsa Global Company should also accommodate the new brand strategies and architecture. In other words, The design can be assumed as the source of first impression and first contact point which plays the most critical role to change and build ideas of people about the trade name and its merchandises to recognition. (Berkowitz, 1987)

To summarize, this study has aimed to provide an evaluation of current product design and brand identity relationship for Temsa Design Team, Brand Management and Product Management units to be considered and used in the future generation product design processes in accordance with the new brand architecture. Additionally, the results of the study can also be used as reference while generating the strategic link between Temsa brand identity and Temsa design process in the near future.

4.2 Methodology

The exterior look of anything can be assumed as the thing that creates the first impression and the image about it on the audiences' minds. This universal preconception is also valid for the design of the products in automotive sector. People see a vehicle on the street or in a station and then, they can reach an idea very quickly, whether they like it or not. Certainly, this feature of the exterior design creates a significant role for it to generate a positive image about the product and the brand it belongs to. Therefore, if any study will be performed in this field about visual brand recognition and the semantic relation of the design with brand/product identity should definitely start with the exterior design,

which is the first touch point with the customers. As a result, a study structure consisting of three phases is proposed. (Figure 4.1)

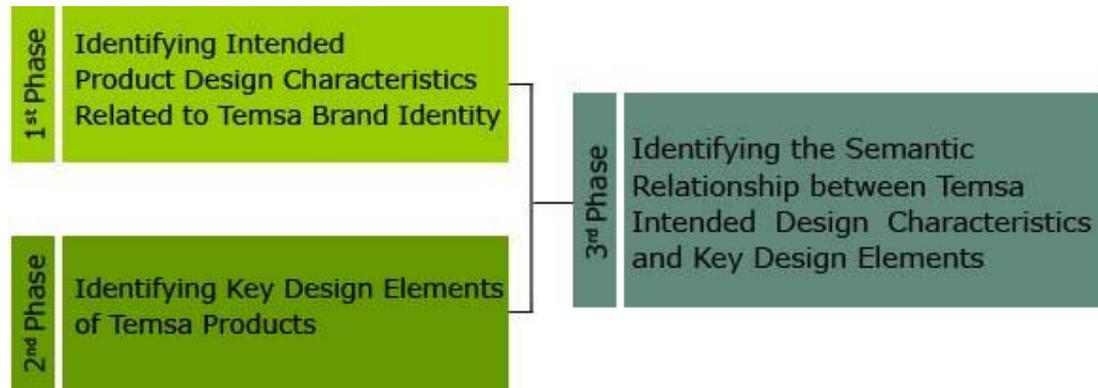


Figure 4.1 The main structure of the study.

For the first phase, since there is no available document specifically about the Temsa product design and brand identity, the intended Temsa design characteristics needed to be obtained. Therefore, this part of the study is performed with the involvement of the related Temsa Global Company personal who have the managerial and decision making authority for the design of the Temsa products. As a result of this part of the study, a list of Temsa intended product design characteristics appropriate with the vision, mission, aims, goals and the strategies of the company is obtained from the directly related source.

In the second phase, the aim was to obtain the major design features of current Temsa products; therefore, Design Format Analysis (DFA) (Warell, 2001) was used. However, four of the most essential products of Temsa product portfolio were used in this phase. (Figure 4.2) The first one is a coach, which is the high-end product for coach segment named model Diamond, the second one is the best selling Temsa coach named model Safari HD, the third one is the high-end product for the midi bus segment named model Opalin, and the last one is the best selling Temsa midi bus called model Prestij Super Deluxe. Models Diamond, Opalin and Prestij Super Deluxe were designed by a European consultant designer between the years of 2003 and 2006. The model Safari HD was designed

just after 2001, by the in-house engineers. These seem to be the main and key products of Temsa product family. (See Appendix A)



Figure 4.2 Four of the most essential products of Temsa product portfolio which were used in the study. (Product 1: Model Diamond, Product 2: Model Safari HD, Product 3: Model Opalin, Product 4: Model Prestij Super Deluxe)

In the last phase, the results of the first two steps are used to reach a semantic evaluation. The semantic relationship between Temsa intended product design characteristics appropriate with the vision, mission, aims, goals and the strategies of the company and the major design features of current Temsa products was aimed to be identified by using Semantic Differential Method (SDM), which has been developed by Osgood et al. (1957)

The second and the third phases are performed with the involvement of the design students since the participant needed to be well-informed about the design, design language, design semantics etc. to make accurate, reliable and unprejudiced evaluations. On the hand, design

students in the universities are commonly the users of these products. However, the most important reason behind using well-informed users is, the design features of the Temsa products were not separated as implicit and explicit ones. Therefore, only the well-informed users can understand and interpret the relationship within the design features and design characteristics, and possible implicit meanings that they have.

4.3 Identifying Intended Product Design Characteristics Related to Temsa Brand Identity

As mentioned previously, Temsa Global Company does not have any available document specifically prepared for the strategic design and brand management activities. Therefore, the most effective way to obtain the results for product design characteristic related to Temsa brand was to ask the managers and decision makers who have the authority and responsibility for the design of the Temsa products.

4.3.1 Data Collection Tool

In order to determine the Temsa product design characteristics for exterior design of the products a questionnaire was designed as data collection tool. (See Appendix B)

The questionnaire was designed by using a list of definitive words of design characteristics which are commonly used in the automotive design area. (Karjalainen, 2007) (See Appendix C) In the questionnaire, the question was asked very directly in both English and Turkish versions; moreover the words used as definitive words are also given in both languages to ensure the easy and common understanding. The evaluation was requested to make through a seven-point scale for each definitive word.

4.3.2 Sampling

Industrial design is a new in-house process for Temsa Global Company and it is not a separate departmental organization, which has its own strategies, rules, documentary system etc. The industrial designs of the products have been done by the in-house designers since 2007. Previously, consultant design companies and in-house engineers were used for the industrial design of the products. As a result, documents related with the industrial design, its strategy, product design approach, design story and history of any product designed before 2007 etc. were not available. Therefore, this phase of the study was performed with the involvement of the managers and decision makers who have the authority and responsibility for the design of the Temsa products, the attendants were consisting of three groups: Four employees from Export Marketing Group, three employees Domestic Marketing Group and seven employees R&D and Technology Group. (Figure 4.3) In other words, seven people each from Marketing Department and R&D and Technology Department participated in this phase of the study, who are accepted to be well-informed about Temsa brand identity, vision, mission, products, strategies and aims and goals and have similar and common approach to the product design characteristics of the brand. With equal number of participation from both departments, their effect to the total result of this phase was aimed to be obtained equal in ratio.

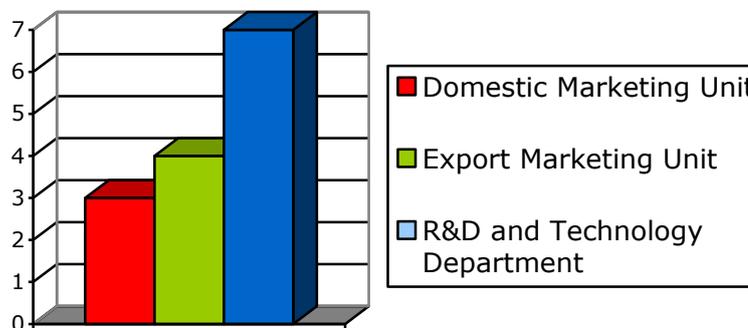


Figure 4.3 Distribution of number of participants in the first phase of the study.

4.3.3 Procedure

The questionnaire was sent through e-mail to all participants with a brief description of the study. The participants were first asked to read the brief description and the question in the questionnaire and understand the aim clearly. It was also reminded that the evaluation should be done by considering the Temsa brand identity, vision, mission, strategies and aims. The evaluation scale is designed as two ended: 1 point (not at all) and 7 points (definitely)

4.3.4 Results

In the results of the questionnaire, average Temsa (Figure 4.4) and separate approaches for the Temsa product design characteristics according to the departments (Figure 4.5, 4.6, 4.7) can be observed. The average approach refers to the result obtained from arithmetical average of the total points given. As secondary but important results, the Export Marketing Department approach vs. Domestic Marketing Department approach (Figure 4.8) can be obtained to see the common and differentiating points within marketing department. Additionally, average approach of marketing departments vs. R&D and Technology Department approach (Figure 4.9) can also be obtained to see if they have common understanding of product design identity or not. The similarity or dissimilarity within departments can be considered as an important issue; since, the understanding of product design identity may indicate, whether they have similar expectation from the visual characteristics output of the design and an agreement to communicate and manage the design according to the brand/product identity and strategies of Temsa or not.

Average Approach

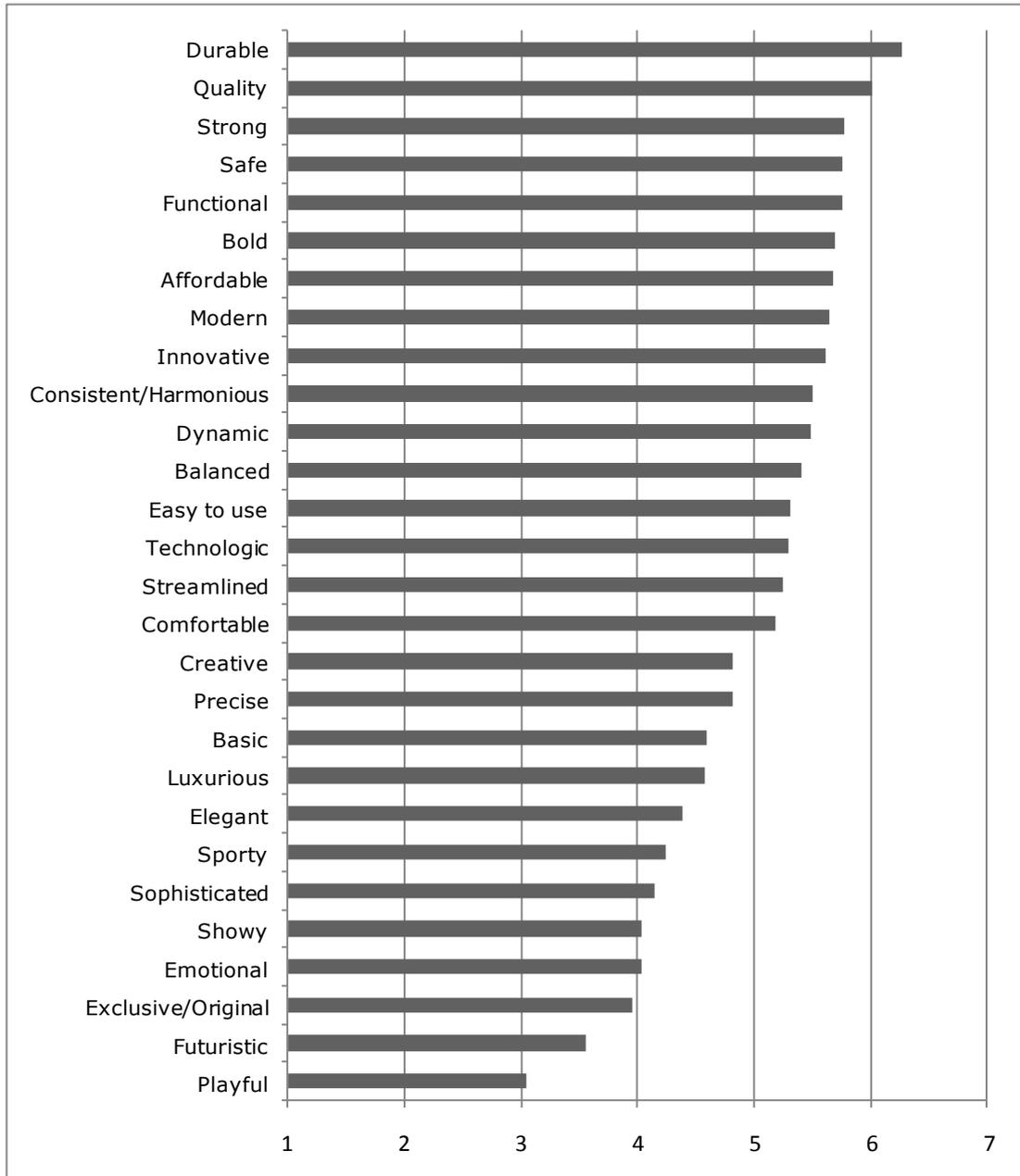


Figure 4.4 Temsa Intended Product Design Characteristics Average Approach.

R&D and Technology Department Approach

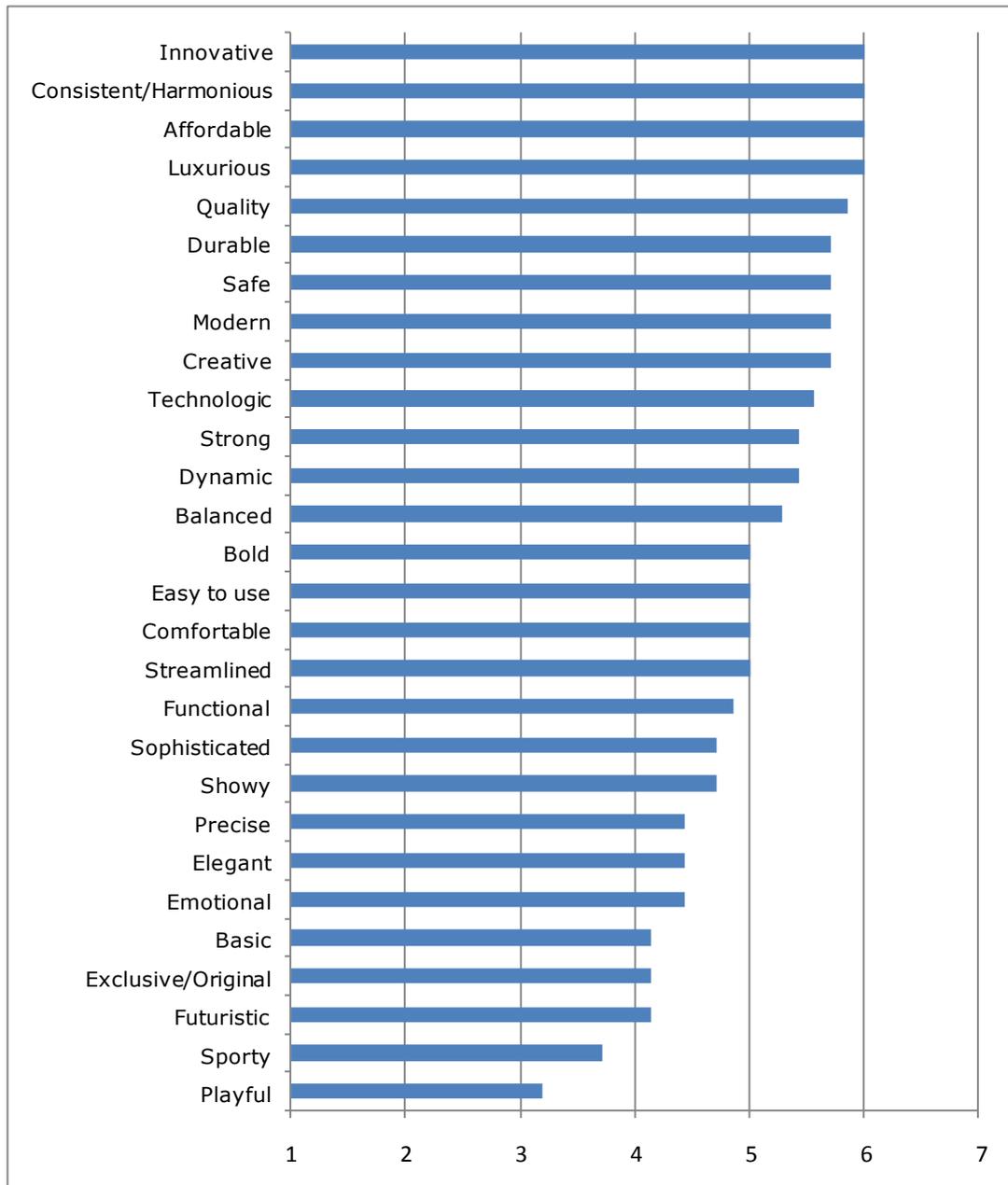


Figure 4.5 Temsa Intended Product Design Characteristics R&D and Technology Department Approach.

Domestic Marketing Department Approach

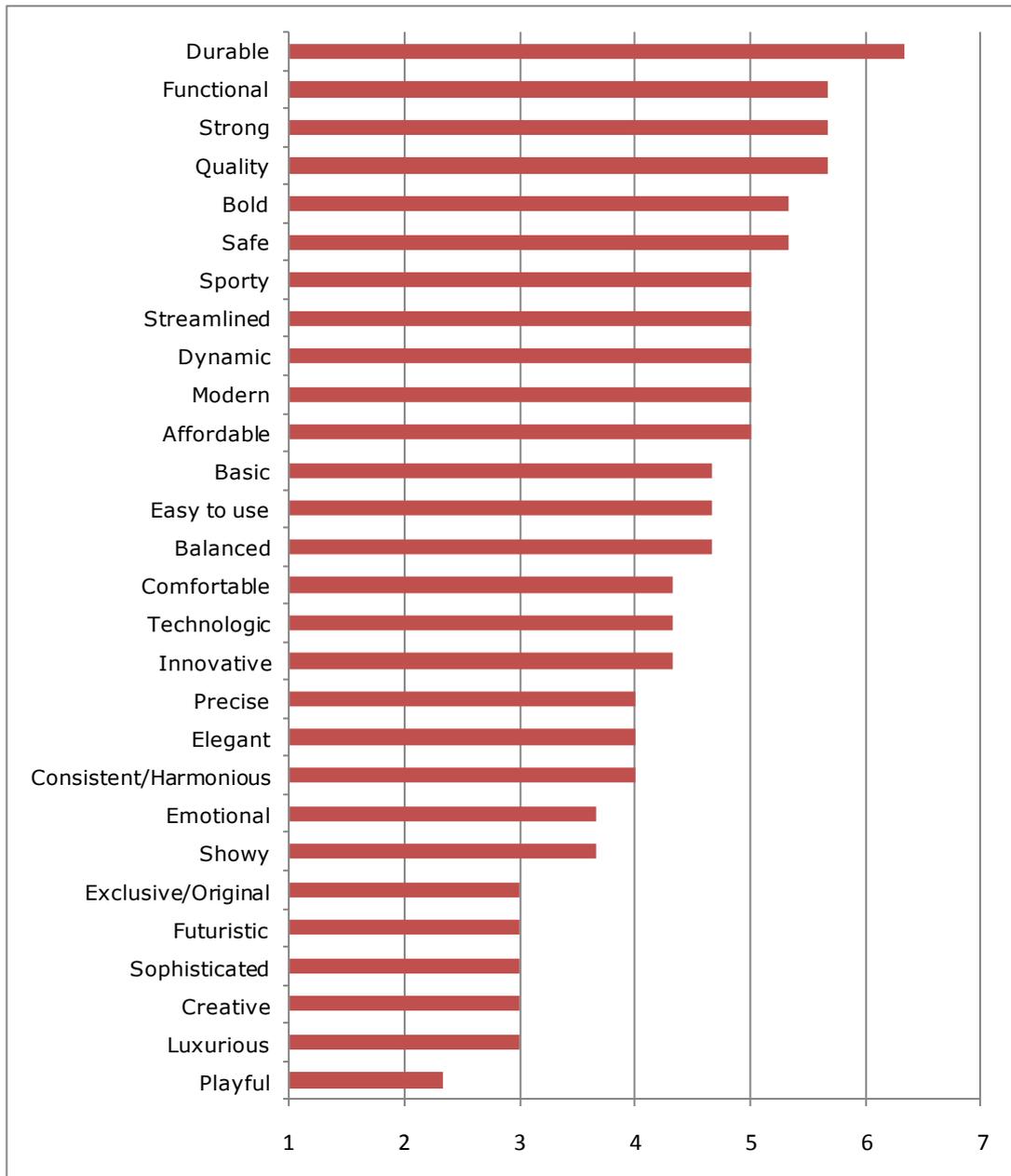


Figure 4.6 Temsa Intended Product Design Characteristics Domestic Marketing Department Approach.

Export Marketing Department Approach

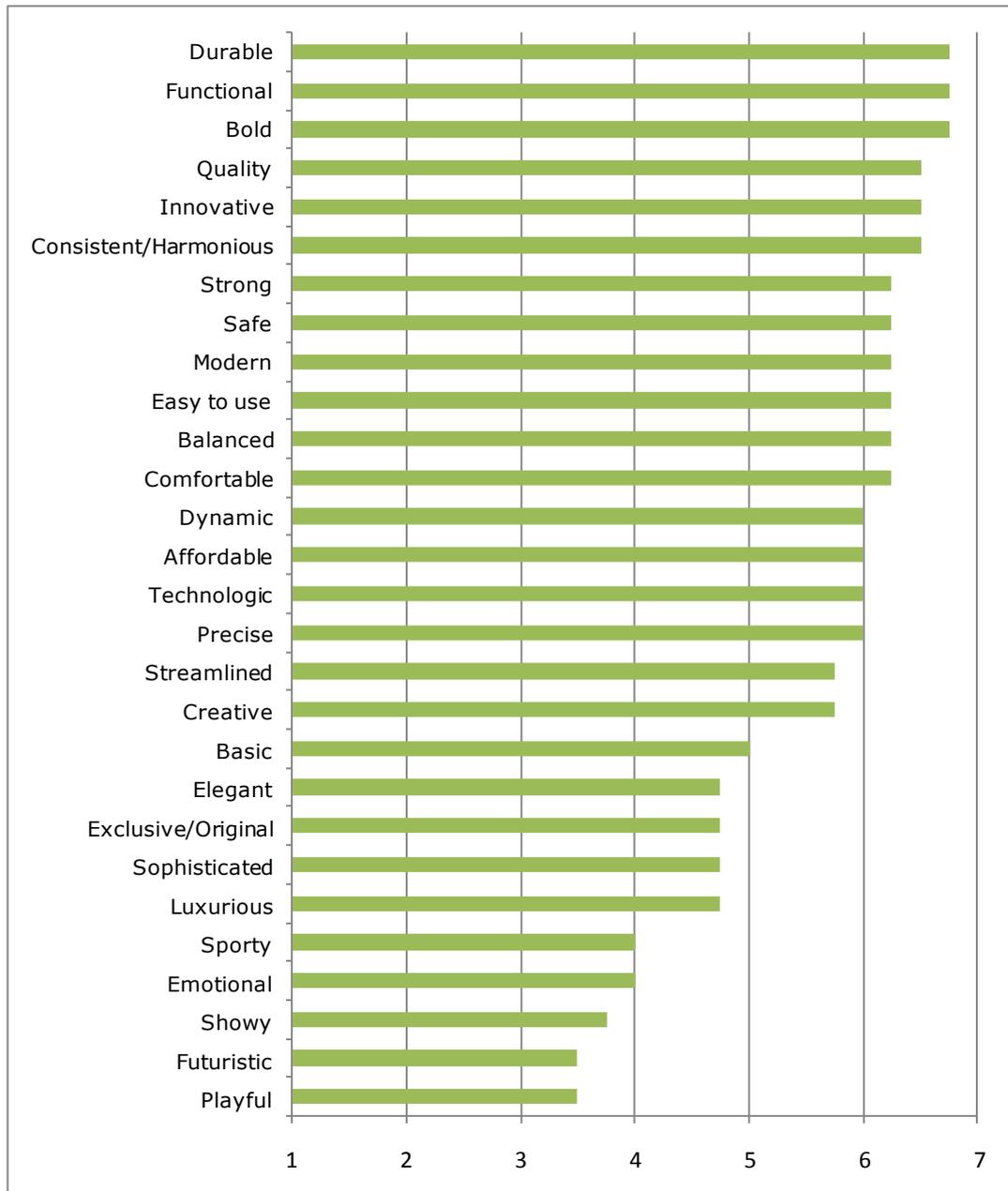


Figure 4.7 Temsa Intended Product Design Characteristics Export Marketing Approach.

**Export Marketing Department vs.
Domestic Marketing Department Approach**

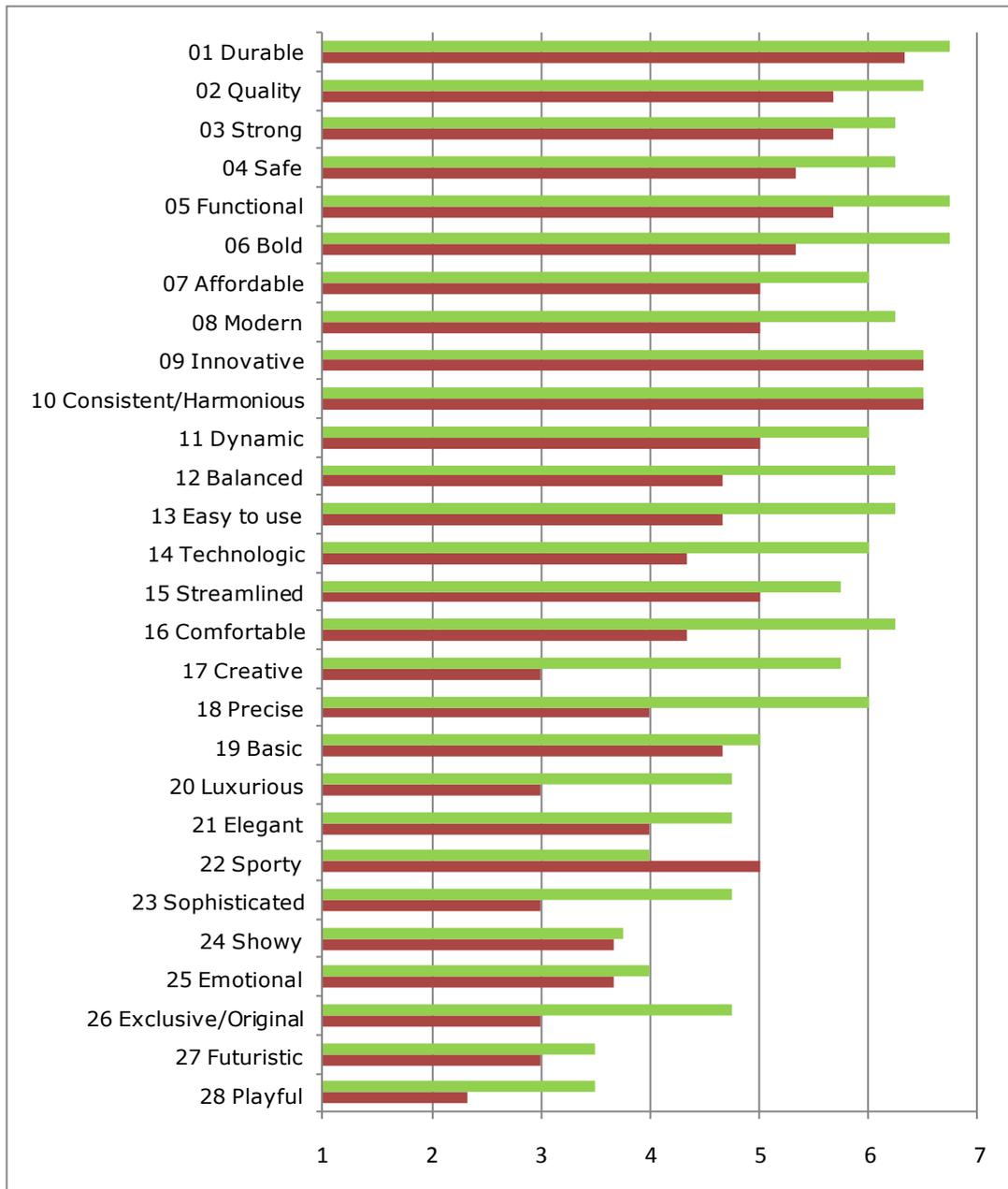


Figure 4.8 Temsa Intended Product Design Characteristics Export Marketing Department vs. Domestic Marketing Department Approach.

**R&D and Technology Department Approach vs.
Average Marketing Department Approach**

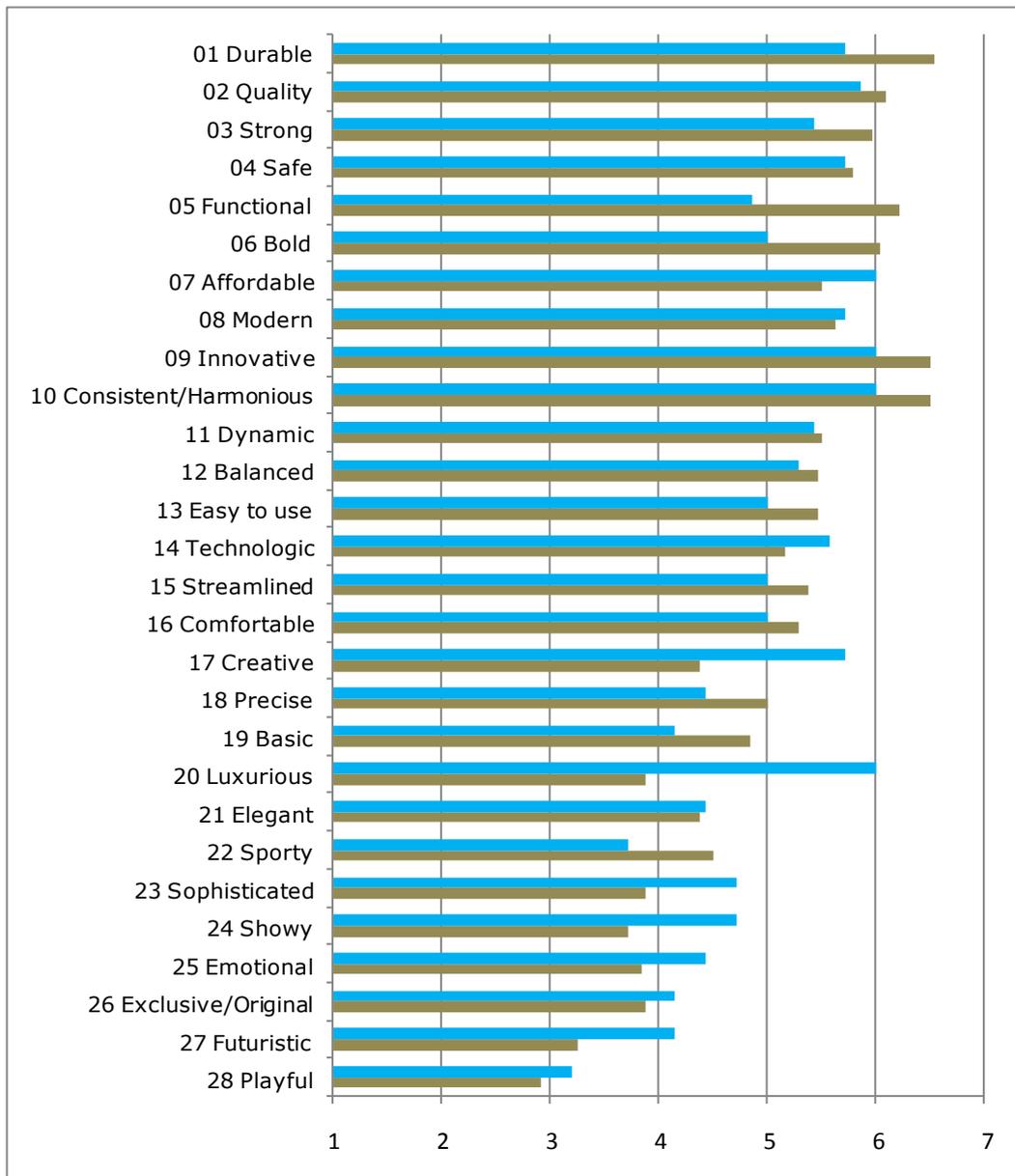


Figure 4.9 Temsa Intended Product Design Characteristics R&D and Technology Department Approach vs. Average Marketing Approach

In addition to these direct results for each department and average of the company approach for the Temsa product design characteristics, when the final list of product design characteristics constituted, the frequency of choice should be considered.

The first ten choice of each department is listed below:

- **Export Marketing Department List:** Functional, Bold, Durable, Innovative, Consistent/Harmonious, Quality, Easy to use, Strong, Comfortable, Modern
- **Domestic Marketing Department List:** Durable, Functional, Strong, Quality, Bold, Safe, Dynamic, Streamlined, Modern, Sporty
- **R&D and Technology Department List:** Innovative, Consistent/Harmonious, Luxurious, Quality, Creative, Modern, Durable, Safe, Technologic, Dynamic

Table 4.1 Comparison table of average list order and frequency order

Characteristic	Frequency Chosen in Top Ten	Order in the Average List
Durable	3	#1
Bold	2	#6
Functional	2	#5
Innovative	2	#8
Consistent/Harmonious	2	#9
Quality	2	#2
Dynamic	2	#10
Strong	2	#3
Safe	2	#4
Modern	2	#7

Comfortable	1	#15
Easy to use	1	#12
Streamlined	1	#14
Sporty	1	#21
Luxurious	1	#19
Creative	1	#16
Technologic	1	#13

The table shows that how many times the design characteristics were chosen in the top ten of each department's list, and the order of them in the average list.

According to this table, it can be seen that the characteristics of those that were chosen more than once, are the same ones in the average list. Therefore, the characteristics in the first ten of the average list can be used in the further steps and accepted as the intended Temsa Product Design Characteristics. However, "being affordable" was removed from the list; since, some of the participants of the study declared that it has a negative meaning in it and it can be interpreted as "being cheap". Therefore, instead of "being affordable", being dynamic is included to the list.

4.4 Identifying Major Design Features of Temsa Products

Major design features can be assumed as the design features, which are explicitly perceivable and significant for the design language of the products. Moreover, they should have distinctive visual features, and preferably, communicate with the brand/product characteristics. (Karjalainen, 2007) These design features are crucial, since the communication within brand identity and product design is generated

through them. Therefore, identifying Temsa major design features as the second phase, measuring and evaluating their representative features is an important task for the aims of this study.

4.4.1 Data Collection Tool

The second phase of the study was consisted of two steps. In the first step, the design features that should be evaluated in such a study were asked to the in-house industrial designers of Temsa Global Company. In the second step, the chosen design features selected from the four vehicles, which were seemed to be essential for Temsa product line-up because of the reasons previously mentioned are evaluated according to "their being explicit" or in other words "strength of occurrence" in the whole design of each vehicle. The method used for the second step was Design Format Analysis. (Warell, 2001)

In the first step, two in-house industrial designers were asked for their individual ideas to find out the design features among four products that considered to be evaluated in such a study. Then, they are asked for come up with a final list of design features that they commonly decided. The aim of first asking for an individual list, then asking for a common one was to obtain much more variety of design features to be considered; then, narrowing it down from a wider list to decrease the probability of omitting any important design features. (See Appendix D and Appendix E)

In the second step, the DFA method was applied with a questionnaire booklet including questions and 2D photographs of each four products, with mentioned design features indicated on each photo. (See Appendix F 1) In addition, a digital video of four vehicles showing the whole exterior look and each mentioned design features of the vehicles in 3D was used during the application, in order to help participants to comprehend the

vehicles and design features better and obtain more precise results. (See Appendix F-2)

4.4.2 Sampling

In order to ensure the objectivity of the study, the first step of the second phase was performed with the participation of the two in-house industrial designers of Temsa Global Company except from the researcher. For the application of the second step, a group of well-informed participants was needed, since the reliability of the results is directly related to the level of information of the participant about the design, design semantics, design features, product visual properties etc. Furthermore, the participants should not have strong prejudice about the brand and its products. The most important reason behind choosing design students is the design features of the Temsa products were not separated as implicit and explicit ones. The customers can only be used while explicit features are evaluated. Therefore, the second step of this phase of the study was performed with the participation of 3rd and 4th degree students of Middle East Technical University (METU), Department of Industrial Design. (ten students from each grade)The participant students were selected according to availability sampling principle.

4.4.3 Procedure

As mentioned previously, the first step of the second phase of the study was performed with the participation of two in-house designers. As the beginning, each of them was informed about the aims of the study and some critical definition of terms such as definition of design features etc. Then, the 2D visuals of the selected four products from Temsa product portfolio were given with the question about selecting the design features

that should be evaluated through such a study. After they constituted their lists individually, a single common list of design features selected was requested.

In the second step of this phase, the DFA was applied to the industrial design students from METU. In order to increase the efficiency and reliability of the results the analysis performed with both 3D and 2D visuals of the products. Each vehicle was recorded from a circular path with a camera; therefore the vehicle and the design features which were asked to be evaluated were shown in detail. Without any time limitation, the participants freely watched the video for each design features asked, examine and evaluate them by also seeing them on the question and evaluation booklet in 2D. They gave 0 point for "not applicable", 1 point for "not enough strongly occurred", 2 points for "strongly occurred" and 3 points for "very strongly occurred" design features. In addition, the participants used 30 minutes as an average, for this part of the study.

4.4.4 Results

For the first step of the second phase, a common list of the design features that would be used in the following step is obtained from the in-house designers of Temsa Global Company. (See Appendix D) As a result of the second step of this phase, strength of the occurrence of each design feature is obtained for each product. (Figure 4.12, 4.13, 4.14, 4.15) In addition, the strength order of the strongest design features of Temsa product portfolio, are obtained as average. (Figure 4.11) However, the major design features are decided not be chosen from the average order list, since some of the strong design features specific to a vehicle might be neglected. Therefore, the first three strongest features of each product were selected as major design features of Temsa products. In addition, the feature "symmetrical rear view mirrors according to the vertical axis" was included since it is in the second place in the average order list. The "front body contour" is one of the most

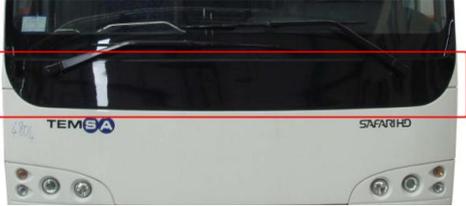
essential design features that specify the general exterior view of the vehicle in the bus and midi bus design. It is decided at the very beginning of the design process; therefore its accuracy and effect on the further engineering process is important. As a result; “the front body contour narrowing in the lower & higher ends” is added intentionally to evaluate its effect to the design of the whole vehicle.

As a result, the list of the major design features of Temsa products is:
 (The visuals belong to major design features can also be seen in Appendix G)

Product-1 (Model Diamond):

<p>1. Panoramic windshield</p>	
<p>2. The transition recessed surface surrounding the tail lamps</p>	
<p>3. Horizontally assembled circular headlamps</p>	

Product-2 (Model Safari HD):

<p>1. The engine compartment air outlet on the rear face</p>	
<p>2. Vertically assembled tail lamps</p>	
<p>3. The black painted region below the windshield</p>	

Product-3 (Model Opalin):

<p>1. The metallic colored recess on the front face where the headlamps positioned</p>	 A close-up photograph of the front of a white bus. A red line highlights a metallic-colored recessed area on the front face, which houses the headlamps. The word "OPALIN" is visible on the upper part of the front panel.
<p>2. The line lying horizontally on the front bumper</p>	 A photograph showing the front view of a white bus bumper. A red line highlights a horizontal line running across the width of the bumper, positioned below the headlamps.
<p>3. The lower cut line on the rear glass composed of angular lines</p>	 A photograph showing the rear view of a white bus. A red line highlights the lower cut line on the rear glass, which is composed of angular lines. The text "Manufactured by TEMSA" is visible on the glass, and "OPALIN" is visible on the rear panel below the glass.

Product-4 (Model Prestij Super Deluxe):

<p>1. Metallic colored front air inlet</p>	
<p>2. Rectangular engine service door</p>	
<p>3. The metallic colored recess on the front face where the headlamps positioned</p>	

From Average Order List:

1. Symmetrical rear view mirrors according to the vertical axis



2. Front body contour narrowing in the lower & higher ends



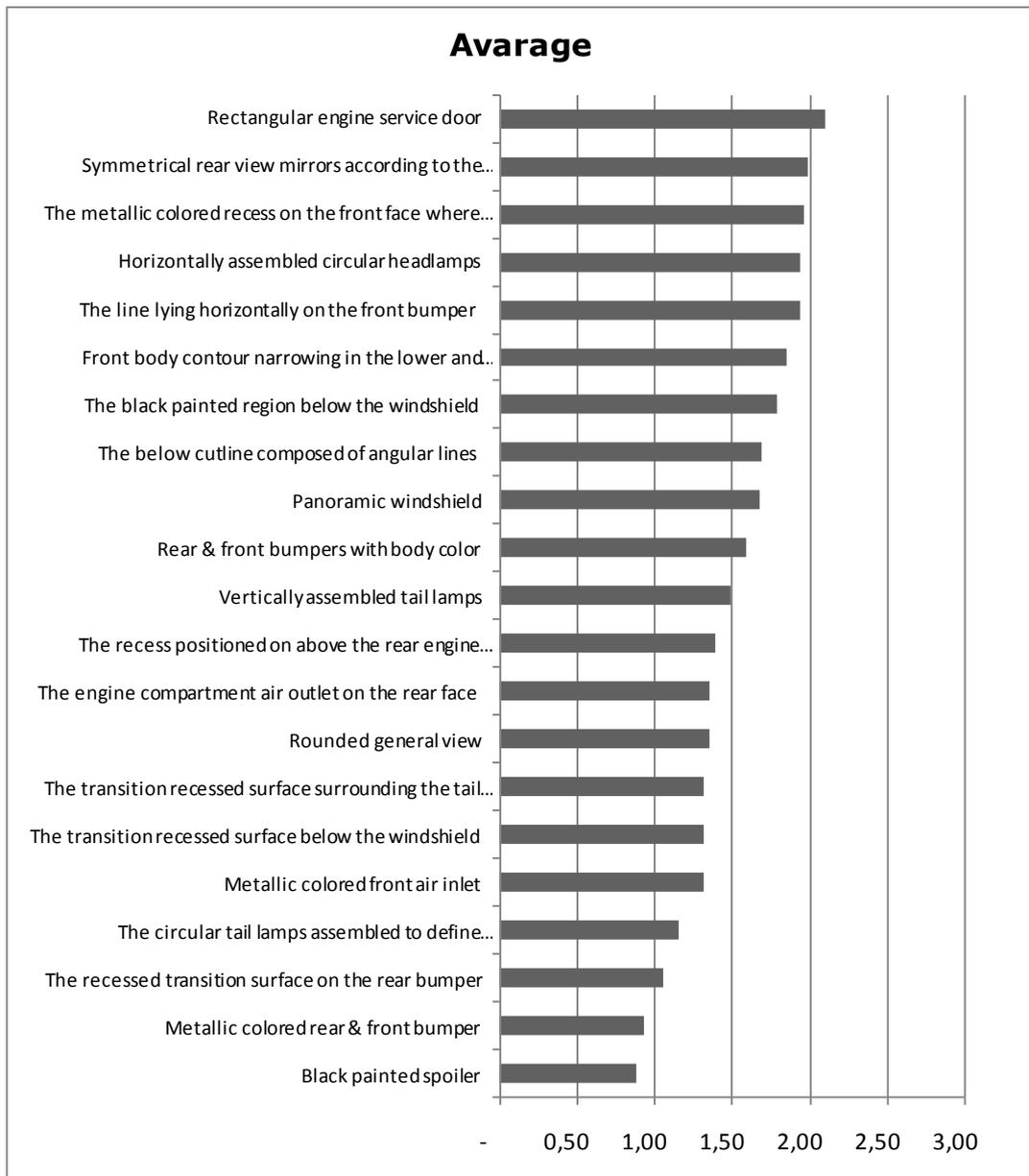


Figure 4.10 Temsa design features average order list according to their strength of occurrence on the design.

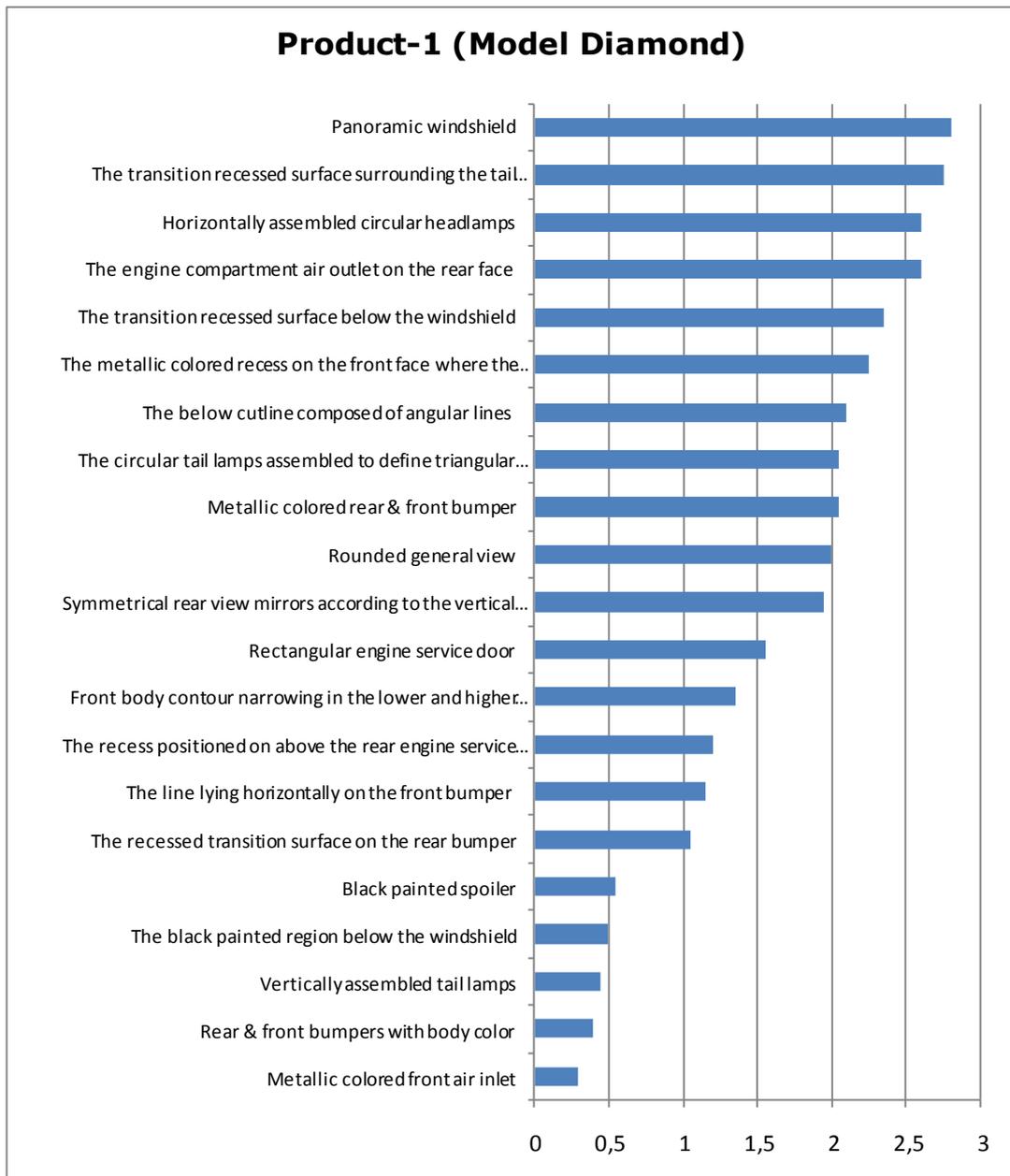


Figure 4.11 Temsa design features order list according to their strength of occurrence on the design, for model Diamond.

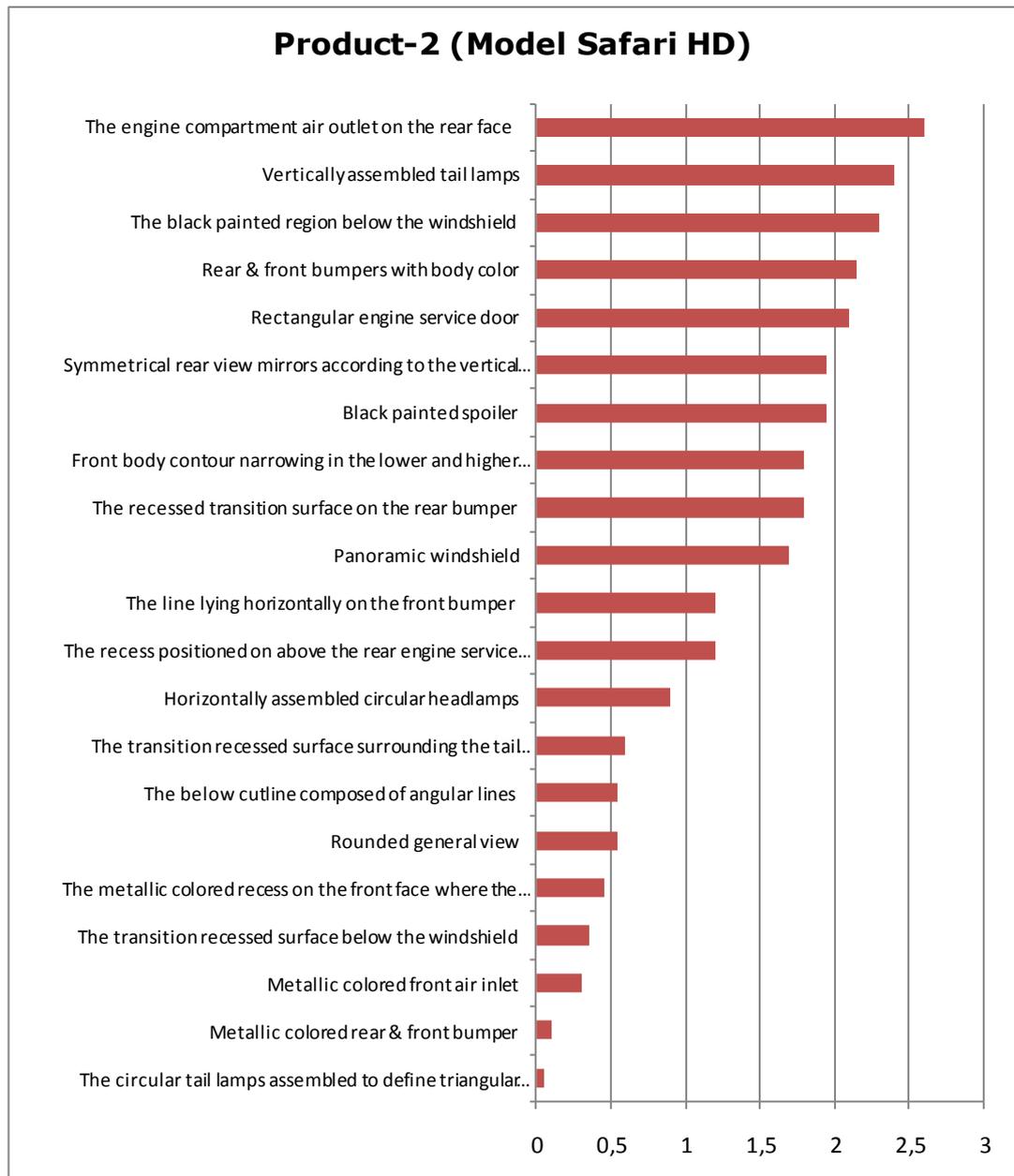


Figure 4.12 Temsa design features order list according to their strength of occurrence on the design, for the model Safari HD.

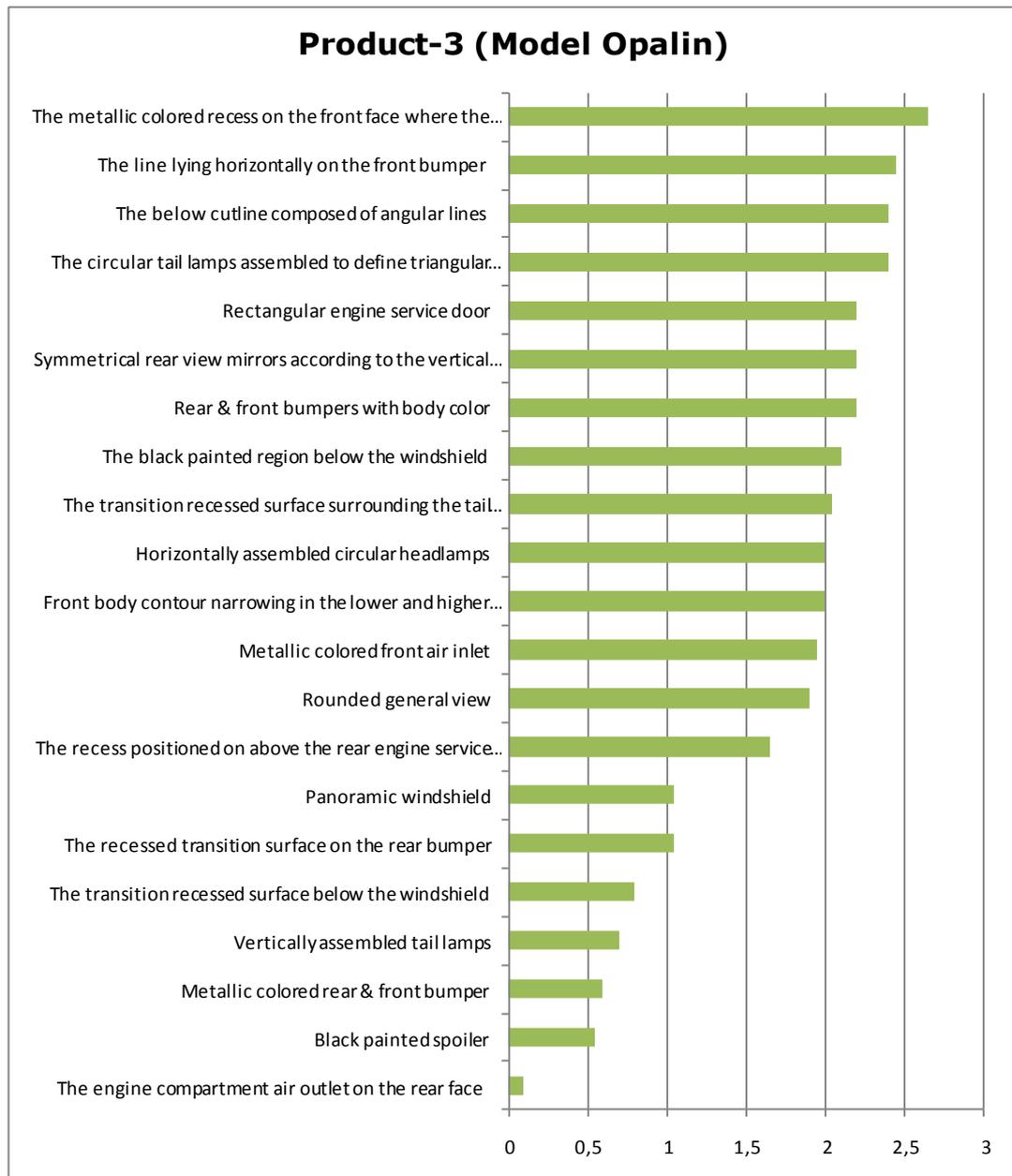


Figure 4.13 Temsa design features order list according to their strength of occurrence on the design, for the model Opalin.

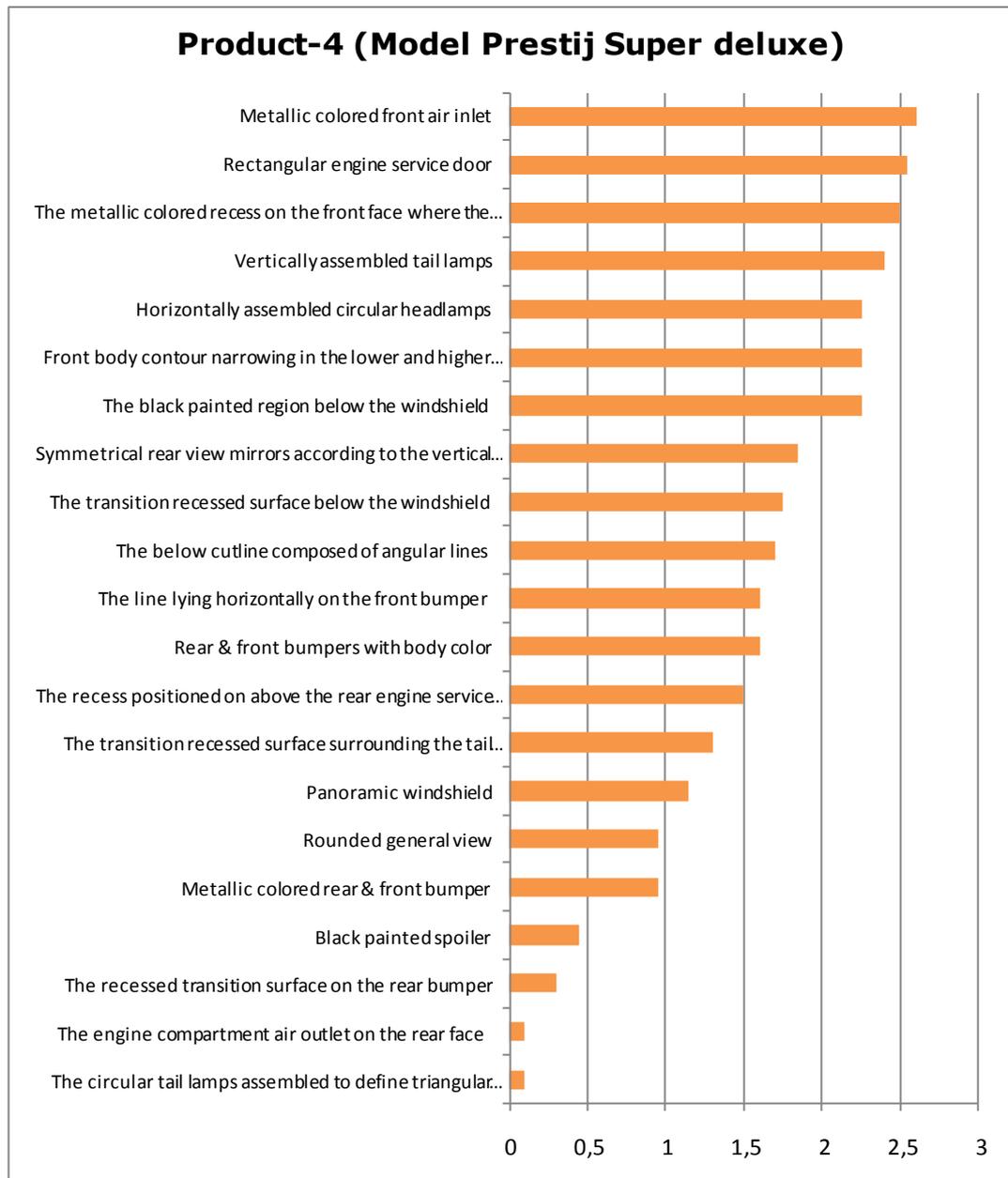


Figure 4.14 Temsa design features order list according to their strength of occurrence on the design, for the model Prestij Super Deluxe.

On the other hand, as a secondary result the order of the typicality of the evaluated Temsa products was obtained. This result should also be used as an input for the design process of new generation products, by Temsa Global designers and product design authorities. (Figure 4.16) This information is obtained by simply summing up all the points for all design features for each product.

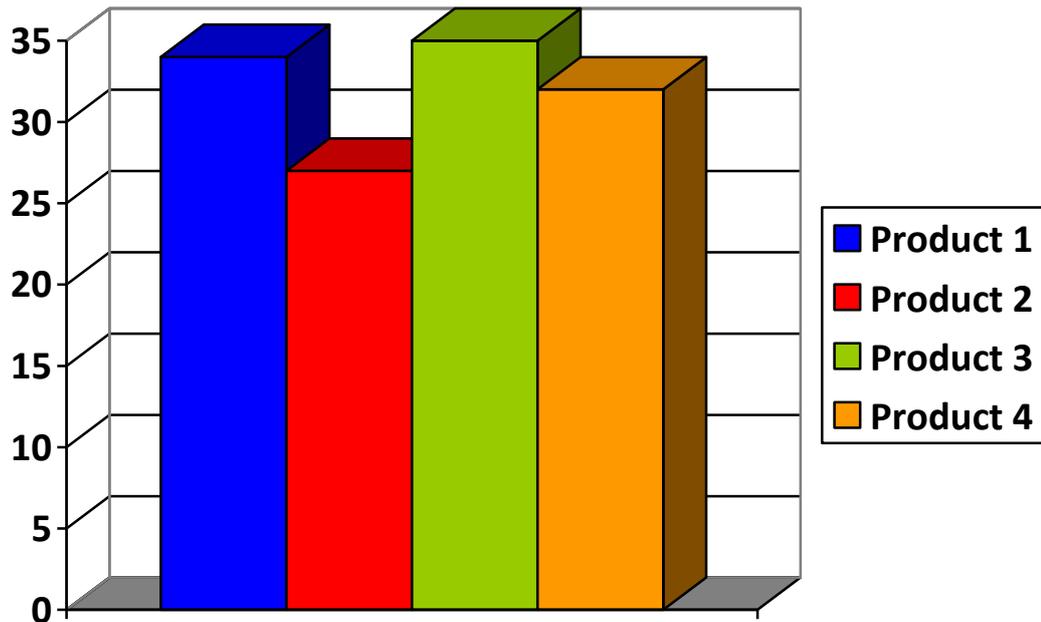


Figure 4.15 the order of typicality of products as a secondary result for second phase of the study. The most typical Temsa product is Product 3 with 35 points; the less typical one is Product 2 with 27 points.

4.5 Identifying the Semantic Relationship between Temsa Intended Design Characteristics and Major Design Features

In the final phase of the study, the results of first two phases were evaluated from a semantic perspective. To put differently, the semantic relationship between Temsa intended product design characteristics and the major design features of Temsa products were evaluated. The aim of this phase was to reveal the existence and success of any strategically

generated link between Temsa product design characteristics and the product design itself. As mentioned previously, the having such a link is very essential situation to communicate strategically with customers about the brand/product identity on the way to be a global brand. Since the product is one of the media, which generates an image on people's minds about the brand and itself. Having such a link is also crucial for positive recognition, which makes brands and products prosper. From the Temsa brand perspective this phase of the study is important; since, it is a kind of self evaluation. By using the results of this self evaluation as input for the design process, Temsa may prepare itself for future generation products more accurately.

4.5.1 Data Collection Tool

In the last phase of the study, the previously mentioned semantic relationship was evaluated by using the Semantic Differential Method (SDM) of Osgood et al. (1957)

The design features obtained in the previous step of the survey are assumed as major design features of current Temsa product portfolio; therefore, these features were evaluated in this phase of the study. In addition, the major design features were evaluated according the intended product design characteristics of Temsa products by using Semantic Differential Method. (See Appendix H)

4.5.2 Sampling

Similar to the second phase of the study, participants should not have strong prejudice about the brand and its products. In addition, semantically evaluating and interpreting design features need a specific level of design knowledge. The most important reason behind choosing

design students is the design features of the Temsa products were not separated as implicit and explicit ones. The customers can only be used while explicit features are evaluated. Therefore, the final step of this phase of the study was also performed with the participation of 3rd and 4th degree students of Middle East Technical University (METU), Department of Industrial Design, which are also the users of the evaluated products. (ten students from each grade) Similarly, the participant students were selected according to their availability.

4.5.3 Procedure

In the last phase, the SDM was applied to the industrial design students. Similar to the second step, in order to increase the efficiency and reliability of the results, the analysis performed with both 3D and 2D visuals of the products. (See Appendix H) Each vehicle was recorded from a circular path with a camera; therefore the vehicle and the design features, which were asked to be evaluated were shown in detail. Without any time limitation, the participants freely watched the video for each design feature asked, examine and evaluate them by also seeing them on the question and evaluation booklet in 2D. In addition, the participants used 30 minutes as an average, for this part of the study. Each Temsa major design feature was evaluated for each Temsa intended product design characteristic from a semantic point of view. The evaluation scale was a seven-point scale: 1 point for "the design feature is not associated with the design characteristics" and 7 points for "the design feature is strongly associated with the design characteristic".

4.5.4 Results

As a result, each design feature was evaluated according to the intended design characteristics and the degrees of their reflecting each product design characteristics were obtained. The most and the least associated design features and the most and the least reflected characteristics were also identified as an output of this final phase of the study. (Figure 4.18) According to Osgood et al. (1957) the evaluation scale of this phase is shown in the Figure 4.17. Since the number of the participants was 20, the top score (most favorable) can be 140, the bottom score (the most unfavorable) can be 20, and the neutral score can be 80 points.

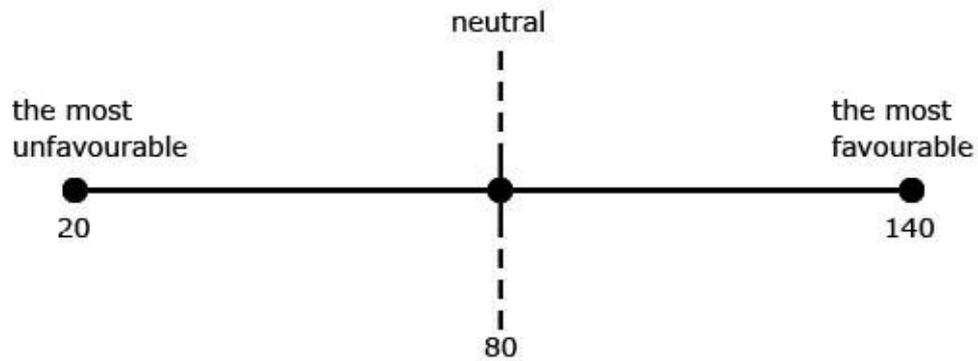


Figure 4.16 The evaluation scale for the third phase of the study.

	Durable	Quality	Strong	Safe	Functional	Bold	Modern	Innovative	Harmonious	Dynamic
Rectangular engine service door	80	57	81	85	100	46	38	34	59	38
Symmetrical rear view mirrors according to the vertical axis	84	91	88	79	109	86	81	66	74	86
The metallic colored recess on the front face where the headlamps positioned	95	91	82	83	90	82	77	67	83	75
The line lying horizontally on the front bumper	79	90	82	76	68	77	82	65	87	89
Front body contour narrowing in the lower & higher ends	82	87	90	84	77	86	92	70	87	98
The black painted region below the windshield	81	91	85	81	61	77	78	65	86	85
The lower cut line on the rear glass composed of angular lines	86	83	90	76	58	83	88	68	79	80
Metallic colored front air inlet	76	80	73	72	83	63	56	45	47	59
Panoramic windshield	80	93	88	83	94	94	95	77	89	95
The transition recessed surface surrounding the tail lamps	83	76	77	78	69	67	67	56	61	70
The engine compartment air outlet on the rear face	90	75	76	76	101	59	51	46	55	58
Vertically assembled tail lamps	80	71	71	72	86	51	46	40	77	50
Horizontally assembled circular headlamps	81	74	69	70	88	54	57	46	74	56

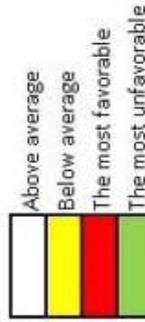


Table 4.2 Semantic relationship between Temsa intended design characteristics and Temsa major design features

4.6 Discussions

In this chapter, the major design features of current Temsa product design and the design characteristics of current Temsa product portfolio and the semantic relationship between major design features and product design characteristics were assessed through a set of empirical studies. In order to identify the aimed data questionnaires supported with both 2D and 3D visuals of the products were conducted.

- **As the first step**, the intended Temsa product design characteristics were identified through a questionnaire with participation of Temsa Global staff that are responsible and have the authority about the design of the products. Before the questionnaire was applied, the literature was searched for the available definitions used for defining product design characteristics in automotive sector, in order to be asked in the questionnaire. (See Appendix C) Then, the participants were asked to evaluate and give points to each characteristic considering Temsa brand identity, strategies, aims and goals, vision and mission. At the end of this phase, the intended product design characteristics were obtained as: the approaches of each department separately, the average approaches of Temsa Global Company and the comparative results within the departments. When all kind of results were examined, there were differences between the departments. For the R&D and Technology Company the first characteristic for Temsa product design was "being innovative", which can be assumed as natural. However, innovative was in the fourth place in Export Marketing unit approach, and fifteenth place in Domestic Marketing unit approach. The order of characteristics differs a lot from one approach to another. Therefore, it can be declared that Temsa Global Company responsible departments do have even a verbal strong common understanding of product design characteristics according to the Temsa brand identity, visions, missions, aims and goals and

strategies of the company. As a result, for the further phases of the study the results of average approach was not accepted as the product design characteristics approach of Temsa Global Company. The sequence of the characteristics according to their being in the top ten of each department is considered with average approach together. However, "being affordable" was removed from the list; since, some of the participants of the study declared that it has a negative meaning in it and it can be interpreted as "being cheap". Therefore, instead of "being affordable", being dynamic is included to the list. Then, the list is finalized like in the following: **Durable, Quality, Strong, Safe, Functional, Bold, Modern, Innovative, Harmonious** and **Dynamic**.

Being Durable, Quality, Strong, Safe, Innovative and Functional as characteristics are not only related with visual design and representative function of the product. They can also be related with the technical functions of the products. Since, the "honesty" in characteristics is the most essential aspect to be successful in visual recognition through semantic meanings. The product must behave as it is perceived from its visual design to generate the honesty perception. As a result of the honesty a positive brand and product image can be created easily and this can create a visual recognition, customer loyalty and prosperous brand and product. However, the rest of the characteristics: Being Bold, Modern, Harmonious and Dynamic are mostly related with the visual properties of the product; in other words they are related with representative functions of the product more than the technical functions. The real competitive advantage in the market can be accomplished by realizing characteristics, which have both technical and representative functions together. Therefore, having these characteristics with both technical and representative function aspects on the top of the list can be assumed as positive for Temsa.

In the final Temsa intended design characteristics list, having “Being Innovative” in the list is essential, since it is emphasized in the mission of the company.

- **In the second phase of the study**, as the first step, the design features, which would be evaluated in the study, were identified with the in-house designers of Temsa Global Company. The design features were selected from the previously selected four products which seemed to be the most essential products of Temsa product portfolio. The personal selection of the designers was asked to be prepared as a single list of design features, which would be evaluated in such a study. The selection was done by the participation of the in-house designers except the researcher because of the objectivity reasons.

In the second step of this phase, the DFA method was used to identify the major design features of Temsa current product portfolio according to the strength of the occurrence of each in the design. The 3rd and 4th grade industrial design students were participated, since the participants needed to be well-informed about design, design semantics, design language etc. and with an unprejudiced motivation to the brand evaluated. In addition, as mentioned previously, the most important reason behind choosing design students is the design features of the Temsa products were not separated as implicit and explicit ones. The questionnaire was supported both 2D and 3D visuals of the four products. According to evaluation results, the strongest design feature of Product 1 was the “panoramic windshield”. For the Product 2 the strongest design feature was “the engine compartment air outlet on the rear face”, for Product 3 the strongest design feature was “the metallic colored recess on the front face where the headlamps are positioned”, and finally the strongest design feature for the Product 4 was “metallic colored front air inlet”. When these four strongest design feature are examined, each design feature is the most distinctive feature

of the product they belong to. However, one of the most important ways of creating distinction from rivals and visual brand recognition was mentioned as using some design features consistently through the design of the products in the portfolio. "The indentation on the front body where the headlamps are positioned" feature was common in three of the products except the Product 2. In addition, "using deterrent design features" seem to be very critical for creating easily perceivable design features: "A recess should be a recess". This kind of design features should be used more dominantly through the design to generate a strong distinction and visual recognition effect.

The order of the design features was differing from one product to another. None of them seemed to be used strategically enough to create a consistent distinction and recognition. When the average list is examined, "the rectangular engine service door" was the strongest design feature of current Temsa product portfolio. This kind of ordinary design feature's being first indicates clearly the design features were not used strategically and in a logical order of strength in current Temsa product portfolio to create a more distinctive and recognizable design. Similarly, the "the symmetrically positioned rear view mirrors according to the vertical axis" is not a very distinctive design features among rival buses and midi buses. However, the order in the average list was not used in the further phase, instead, the strongest design features from each product were used since, not to neglect any design feature, which is "strongly occurred" on the product it belongs to.

In addition, as secondary result, order of typicality of the products for Temsa was obtained: Product 3 with 35 points, Product 1 with 34 points, Product 4 with 32 points and Product 2 with 27 points. Except the Product 2, the remaining three products can be accepted as visually resembling to each other. Therefore, Product 2 is not as typical as others.

- **In the last phase**, the association of Temsa product design characteristics and major design features identified were analyzed from a semantic perspective. Therefore, for this part of the survey, the Semantic Differential Method was used, and the participants were the 3rd and 4th grade students who are well-informed about the design, design semantics, product design language etc.

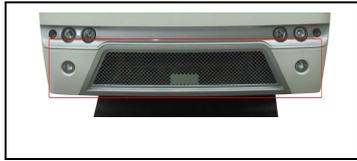
According to results obtained from this phase approximately 50 percent of the design characteristics, major design features couplings were below the neutral level (80 points over 140 points), which means 50 percent of the couplings were not successfully associated.



- The best associating coupling was the “symmetrical rear view mirrors according to vertical axis” and “being functional” with 109 points over 140. Even it generated the best semantically associated coupling, when this design feature examined with other characteristics, it could be identified that the other associations were not strong enough.



- However, the least associated coupling was “rectangular engine service door” and “being innovative” with 34 points over 140. Even though the innovation is emphasized in the mission of Temsa Global Company, none of the major design features perceived as “innovative”.

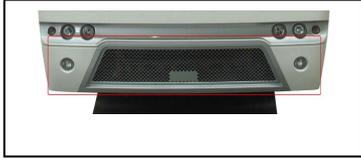


○ The rectangular engine service door, metallic colored front air inlet, and the engine compartment air outlet design features are accepted to be related with “strength”; however, these features are not reflecting the strength characteristic enough to create an explicit meaning.

○ Front body contour narrowing in the lower and higher ends of the vehicle is the feature that gives the most dynamism to the product. Therefore, using the potential of this design feature for the vehicles dynamic look should be considered in the design process.

○ The black painted region below the windshield leads to the most quality perception. The black paint results in illusion of a wider glass area. Having wider glass on the front face may increase the quality perception.

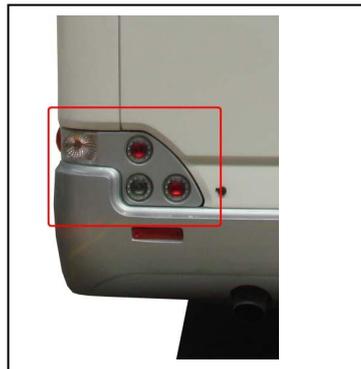
○ The metallic colored recess on the front face where headlamps are positioned seems to be perceived as the most durable design feature. Being in metallic color of an object may increase the durability perception. On the other hand, the metallic front air inlet is not perceived as durable as the metallic colored recess on the front face where headlamps are positioned, because it is perforated. The holes



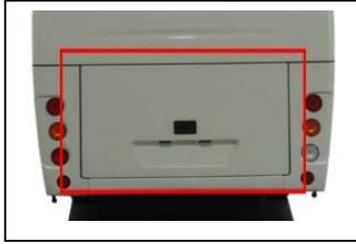
on the air inlet may cause a perception of weakness for the design feature.



○ Panoramic windshield found the most innovative design feature. The reason behind this may be the distinctive characteristic because such a windshield for a bus is rarely used and surprising. Therefore, being innovative in the visual design can be thought as “using rarely used”, “being surprising”. In addition, this design feature is above average nearly in all characteristics. The panoramic windshield is perceived as the boldest and the most modern design feature. The design characteristics of being bold, being innovative may be thought together, an innovative design feature may be perceived as bold, if it is distinctive and unusual.



○ The transition recessed surface surrounding the tail lamps seemed to be not related with most of the design characteristics; therefore it is the most artificial design feature of Temsa products without any essential meaning. This kind of design features are better to use in design to create harmony and consistency in design of the other products of portfolio.



- Rectangular engine service door is mostly perceived as functional. The reason may be the simple and basic geometry of the design feature. Using simple and basic geometry may result in a better functionality perception and assures users that it is going to function properly or it has less probability of failure.

Temsa Global Company is also very ambitious to be a world class global brand, and started to rebuild its brand architecture. Therefore, all of the activities of the company should be reorganized according to the outcomes of the new brand architecture, including the design process. However, before creating the new architecture and adapting it, a self evaluation should be performed. The aim of the self evaluation for design activity should be to recognize itself and noticing the issues going wrong and right in the process and the application continuing currently.

To conclude, the outputs of the study conducted is showing that Temsa brand do not have strongly and strategically generated and adjusted semantic link between its product design characteristics and major design features. The existing links seems to be weak and not strategically adjusted. However, the results of the study will be beneficial while adapting Temsa design process to the new brand architecture. In addition, the results can also be used as an input to the design process of the new generation products.

CHAPTER 5

CONCLUSION

The final chapter includes a brief review of answers to the research questions, which are obtained from literature review and empirical studies conducted. In addition, the chapter also refers to limitations of the study, and provides suggestions for further research.

The primary and secondary research question of the thesis, which will be answered through this chapter were:

- How can a brand improve its visual brand recognition through its product design?
- How can the message of a corporate identity be transmitted through product design features?
- How can a brand be recognized through its visual design features of the products?

5.1 Concluding Remarks

Product design is one of the tools that generate the communication between brand/product identity and customers. The quality of communication and the messages transmitted is directly affecting the image of the company, which is the most essential issue for the companies either to live or die through the way. Therefore, product design should be managed and performed strategically to create such a

semantic link between these two points. On the other hand, product design should have a high level of aesthetic value while having design features transmitting intentional messages both explicitly and implicitly – semantic dimension of the design. However, strategically managing the product design process cannot be sufficient to be successful for a successful strategic design process and outputs. The brand identity of the company should also be managed with a similar manner. The Global brands such as Apple, BMW, Volvo and Nokia etc. have been using this modern approach and constantly increase their strength, prosperity of brand, positive recognition in the market and distinctive characteristic of brand and product design identity. Therefore, the proposed subjects in this conclusion part of the study are for the use of Temsa or any brand, aiming to create positive visual recognition.

The interaction between the particular design characteristics and visual design features of a brand product can be effective and strong, if there is a strong compromised marketing and design strategy. The strategy should be created with a common understanding of both marketing and product development departments. In the organization, it would be better to have an industrial design as a free organizational unit. The industrial design unit should take an active role while defining a new product design strategy, design projects and any related subjects concerning visual design of the products. The industrial design unit should have a design guideline and should have full accountability for all design-related product aspects. The design guidelines are a set of rules, examples and guiding principles for the design process. They aim to lead and inspire the visual design direction, as well as the approach, processes and decisions for product design. The guidelines assist to expand company's identity and values into 3-dimensional design identity and features. They also aim for a recognizable and family look over product portfolio, reflecting the brand identity and visual recognition.

Creating positive and effective visual brand recognition seems to be accomplished by creating a strategic link between brand identity and values, and the product design. The corporate identity message

transmitting through the design can be accomplished by semantic design approach. The visual product recognition principles which will be mentioned later, should be adopted and combined with strategic semantic link between corporate, brand and product design identity. Defining and deciding the link between corporate identity and brand identity is the task of brand management system. Therefore, for the following proposed process, this information is assumed to be ready from the beginning.

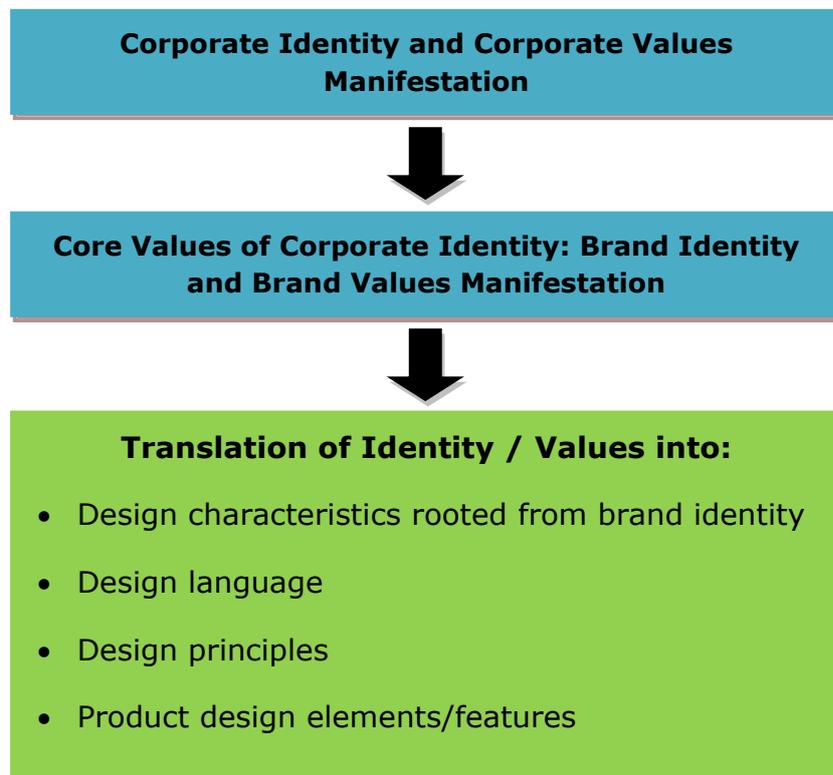


Figure 5.1 The flow of strategic link from corporate identity to product design.

In order to increase the visual recognition of a brand/product, the design features should be strategically selected. The main rule for creating the design features easily recognizable, they should first be “distinctive” in character, it should be considered as specific to that brand’s products, meaning “being original”. The unordinary panoramic windshield of the model Diamond is a good example of creating such a distinctive characteristic. In addition, the design features should be created in a

"determined" manner: "A recess should be a recess, nothing between a recess and a flat or smooth single surface". Using determined design features probably makes it easy to be perceived by the users. "Being honest" is another principle for the visual design: The material, shape or any feature of a product should not be considered as "like something": Glass should be glass: If a glass area of the front face of vehicle is desired to be increased, it should not be an imitation or illusion. For instance, painting a part of the front face to black to create such a wide windshield illusion as in the model Safari HD is not honest and has probably have a negative effect on visual recognition. In addition, honest relationship between the technical properties and the representative properties of the product is also an important aspect: "A product should work, act or behave as it is appeared, it must be honest to its users." For instance, "Symmetrical rear view mirrors" of the model Opalin is less functional than "Asymmetrical rear view mirrors" of model Diamond, in reality. The long arm of the Opalin mirror is problematic and causes vibration on the mirror, which decreases the functional performance of the it. Therefore, it can be declared that the message in the model Opalin is not honest enough, and the disappointment that the users meet will probably be more than the model Diamond; since, they expect more and better performance from Opalin. Creating determined, distinctive and honest design features means creating and using explicit design features. Therefore, it can be said that the explicit design features specific to a brand is the way to obtain effective visual brand recognition. Using explicit design features should also be a part of the design strategy. The "steadiness" or using a feature in the design of other products of the product portfolio will also increase the visual brand recognition. Therefore, design projects should not be considered as single, separate projects. The implicit design features should be used supplementary for design. The major design features, which should be dominant features of the design should be selected by the designer strategically to create distinction from rivals, but consistency in the product family. Being steady or unsteady for product design approach or being evolutionary or revolutionary for new generation design of the product families should be

considered and decided according to the defined marketing and product design strategy, in order not to lose the steadiness for visual brand recognition. In addition to these principles, the design of product should also have a specific level of aesthetic value to create a positive image, which would also result in positive brand/product recognition. The visual recognition of brand/product can be evaluated by using Design Format Analysis. (Warell, 2001)

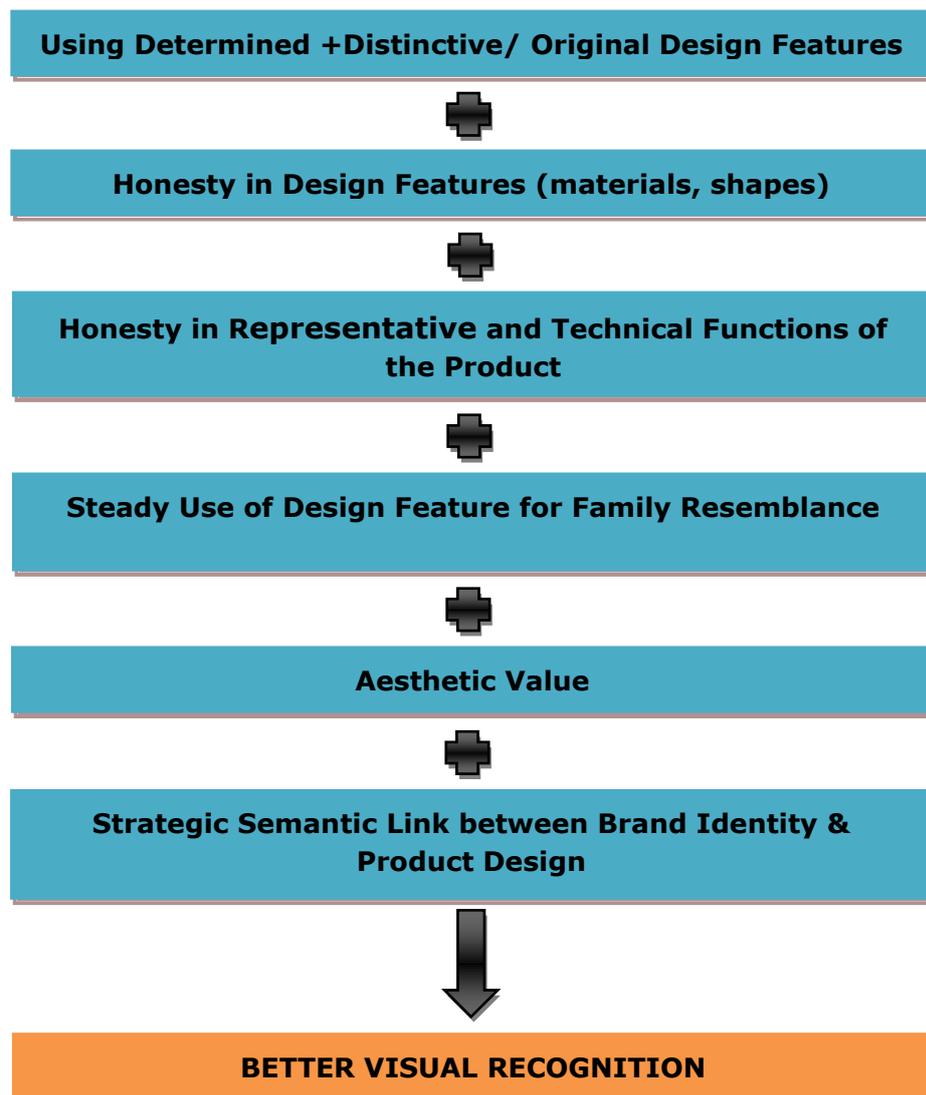


Figure 5.2 The key factors for reaching a better visual recognition of a brand.

Throughout this study, it seems to be obvious that, even though the proposed approaches are applied, the design of the products needed to be evaluated periodically in the design process to assure the desired

result for the visual recognition and the relationship between the brand and product design. The set of analysis methods used in this study are easy and practical enough to apply and evaluate. If the proposed models and evaluation methods are used as a part of the design process both visual recognition and semantic relationship between brand identity and product design domains may be reached more easily. Temsa should generate a strategic design process which results in product designs strategically communicating and reflecting brand identity. Therefore, considering the results of this study, Temsa should create design guidelines which are a set of rules, examples and guiding principles for the design process and aiming to lead and inspire the visual design direction, as well as the approach, processes and decisions for product design. The guidelines assist to expand company's identity and values into 3-dimensional design identity and features. They also aim for a recognizable design and family look over the product portfolio, and reflecting the brand identity strategically with set of rules.

5.2 Limitations of the Study

There was a lack of documents about the industrial design in the company, since the industrial design is a very recently built organization. Therefore, in order to answer each research question a separate study was conducted.

In addition, since the concepts which are related with the industrial design were also unfamiliar to the staff, the specific definitions, expectations and aims of the study declared in detail.

The lack of agreement on product design identity within different related and responsible departments, and also within themselves was another essential limitation. Because of the lack of the mentioned agreement, none of the characteristics were significantly coming forward among others. Therefore, the number of the selected characteristics was

specified according to the point they had, and the number to perform the further phases efficiently.

The dimension and transportation of the products evaluated were limitations, because of their sizes and organizing them to be at the same place and at the same time. The video recording was done for each product and used to overcome this limitation.

5.3 Further Research

The study is only performed for the exterior design of the most significant products of Temsa product portfolio. However, the interior design is also an important part of the whole design which also should be evaluated separately.

Following these evaluation studies, for the new generation of product design of Temsa products, a new design guidelines booklet can be prepared by using the new brand architecture brand identity items. The guideline can also include, strategic design principles for generating the semantic link between the product design and brand identity.

The new generation products can be designed according to the guidelines and may be evaluated similar to the application performed during this study.

Finally, "A New Methodology of Meaning Transformation" within the brand identity domain and product design features domain can be studied. With this new methodology the gap and operational steps between these two domains can be defined as a process for real life applications. The main outline of this methodology is considered to be as below and it would be researched deeply as a doctoral study in the near future:



Figure 5.3 The proposed model for creating the semantic link between brand identity and product design features (A new methodology proposal for meaning creation between brand identity and product design features domains).

Using such a model and creating a design guideline at the beginning of a design project will assure the semantic and strategic link with brand identity domain and the product design domain. The design of the product will not change dramatically according to the tastes of individual designers in the design team: consistency is assured more. Therefore, the companies aiming to increase its visual brand recognition should use such a process systematically. The semantic relationship between the product design and brand identity can be evaluated with the Semantic Differential Method (Osgood et al., 1957)

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APPENDIX A

TEMSA PRODUCT FAMILY



APPENDIX B

PARTICIPANT QUESTIONNAIRE FOR IDENTIFYING INTENDED TEMSA PRODUCT DESIGN CHARACTERISTICS

Identifying Core Design Characteristics for Visual Design of Temsa Products

This survey is performed to identify the **Visual Core Design Characteristics and their order of importance** for Temsa products. Which characteristics should be perceived most by the customers as a first impression, when they look at the **visual exterior design of Temsa products**?

Please consider the identity, vision, mission, main long and short term objectives of Temsa brand while evaluating and grading each value.

Thank you for your help.

Name:
Department:
Position:

Temsa Ürünlerinin Kendine Özgü Tasarım Özelliklerinin Belirlenmesi

Bu araştırma Temsa markalı ürünlerin **kendine özgü tasarım özelliklerini ve bunların önem sırasını** tespit etmek amacıyla yapılmaktadır. Temsa markalı ürünlerin **dış tasarımına** bakıldığında, müşteriler tarafından en çok hangi özellikler ilk bakışta algılanmalı?

Lütfen değerlendirme yaparken Temsa markasının kimliğini, vizyon, misyon, uzun ve kısa vadeli hedeflerini göz önüne alınız.

Yardımlarınız için teşekkürler.

İsim:
Bölüm:
Görev:

	Not at all						Definitely
	1	2	3	4	5	6	7
Futuristic Çağın Ötesinde	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innovative Yenilikçi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Elegant Şık, Zarif	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exclusive / Original Eşi Olmayan / Özgün	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Functional İşlevsel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dynamic Dinamik	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bold Cesur, Çarpıcı	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emotional Duyulara hitap eden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easy-to-use Kolay kullanılabilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Showy Gösterişli, Havalı	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playful Neşe dolu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creative Yaratıcı	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basic Fazlalıksız, Sade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Affordable Fiyatı karşılanabilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Streamlined Akıcı hatlara sahip	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strong Güçlü	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comfortable Konforlu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Modern	Çağdaş	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Balanced	Dengeli	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consistent / Harmonious ...	Uyumlu, Tutarlı	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Durable	Dayanıklı	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Luxurious	Lüks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Kaliteli	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sophisticated	İncekikli, Teferruatlı	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sporty	Spor görünümü	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Precise	Hassas, Kusursuz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safe	Emniyetli	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technologic	Teknolojik	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX C

THE LIST OF DESIGN CHARACTERISTICS USED IN THE AUTOMOTIVE DESIGN

Nissan	Futuristic, Innovative
Mercedes-Benz	Elegant Exclusive
Toyota	Functional, Affordable
Jaguar	Elegant, Dynamic
Cadillac	Bold, Premium
Alfa Romeo	Dynamic, Emotional
Volkswagen	Functional, Easy to use
Lamborghini	Exclusive, Showy
Citroen	Playful, Creative
Hyundai	Basic, Affordable, Easy to use
Chrysler	Streamlined, Bold, Premium
Skoda	Basic, Affordable, Functional

(Karjalainen, 2007)

APPENDIX D

COMMON LIST OF DESIGN FEATURES DECIDED BY IN-HOUSE DESIGNERS

Identifying Design Features for the Temsa Product Models:

“Diamond, Safari HD, Opalin, Prestij Super Deluxe”

Brief information: The basic definitions for the workout:

Design elements, are the parts of a design which build up the whole product picture. Design elements can be defined with colors, shapes, forms, materials, surfaces, textures, graphical elements etc. The definition of a design element with words is called **design feature**.

- **Kidney-shape grille** of a car: Grille → design element
Kidney-shape → design feature (the definition for the element)
- Silhouette with round corners: Corners of the silhouette → design element
Round → design feature
- Matt aluminum bumper: Bumper → design element
Matt aluminum → design feature
- Large sloped windshield: Windshield → design element
Large sloped → design feature

In the first step of the workout; you are expected to list the design features/elements with their features for each four Temsa product models separately. You may examine the high resolution pictures from the computer monitor or from the projection wall. You do not have any time limitation to complete the workout. It is also suggested to keep in mind the definitions mentioned above.

You can draw an outline if you cannot define the design elements/features with words.

Identifying Design Features for the Temsa Product Models:

“Diamond, Safari HD, Opalin, Prestij Super Deluxe”

In second and the last step of the workout, you are expected to decide and create a final list together. You do not have to select only the common ones, as being the designers of the brand products you can also choose the ones that you want to test within such a work. You do not have any time limitation also for this step of the study.

PRODUCT 1 (MODEL DIAMOND):



- Panoramic windshield
- Metallic colored recess where the headlamps are positioned
- Horizontally assembled circular headlamps
- Corner signal lamps fitting to corner radius
- The recess on lying horizontally on the front and rear bumpers
- The transition surface below the windshield
- Metallic colored front and rear bumpers
- The body contour narrowing on the top and lower end of the vehicle
- Rounded geometry
- Triangular and metallic colored tail lamp region
- The mirror lines of the rear glass and air outlet region according to the horizon
- The shape of the air ventilation outlet of the engine compartment
- Circular tail lamps in the triangular area
- Asymmetrically positioned rear view mirrors
- The rectangular red reflectors on the rear bumper
- The rectangular third brake lamp on the rear face
- Rectangular engine service door

PRODUCT 2 (MODEL SAFARI HD):



- The black colored region below the windshield
- Circular headlamps positioned horizontally
- The recessed line lying horizontally on the front and rear bumpers
- The recessed air inlet on the front bumper
- Black colored rear spoiler
- The shape of the air ventilation outlet of the engine compartment
- Vertically assembled tail lamps.
- The recessed line as an offset of the circular tail lamps
- Symmetrical rear view mirrors
- Horizontally wide windshield
- The shoulder type form of the rear mask top corners
- Rectangular engine service doors
- The antenna on the top left of the vehicle

PRODUCT 3 (MODEL OPALIN):



- The black colored region below the windshield
- The angular line below the corners of the black painted region below the windshield
- Metallic colored recess where the headlamps are positioned
- Metallic colored front air ventilation inlet
- The body contour narrowing on the top and lower end of the vehicle
- Black colored rear spoiler
- The angular cutline of the rear glass on the lower side
- The recessed surfaces above the service door on the rear body
- Triangular and red colored tail lamp region
- Symmetrical rear view mirrors
- Rectangular rear engine service door
- Horizontally wide windshield
- The tail lamps are positioned on the rear service door
- The antenna is on the top left of the vehicle
- The line lying horizontally on the front bumper

PRODUCT 4 (MODEL PRESTIJ SUPER DELUXE):



- The black colored region below the windshield
- The angular line below the corners of the black painted region below the windshield
- Metallic colored recess where the headlamps are positioned
- Metallic colored front air ventilation inlet
- The body contour narrowing on the top and lower end of the vehicle
- The recessed surfaces above the service door on the rear body
- The tail lamps assembled horizontally
- Symmetrical rear view mirrors
- The top side of the rear glass following the ceiling contour
- The license plate surface on the front air ventilation inlet
- Rectangular engine service door
- The arched side of the rear glass
- The trapezoidal camera cover assembled on the air conditioner cover

APPENDIX E

THE DESIGN FEATURES USED IN THE DFA

1. Symmetrical rear view mirrors according to the vertical axis

Product-1:



Product-2:



Product-3:



Product-4:



2. Horizontally assembled circular headlamps

Product-1:



Product-2:



Product -3:



Product-4:



3. The metallic colored recess on the front face where the headlamps positioned

Product-1:



Product-2:



Product-3:



Product-4:



4. The transition recessed surface below the windshield

Product-1:



Product-2:



Product-3:



Product-4:



5. The line lying horizontally on the front bumper

Product-1:



Product-2:



Product-3:



Product-4:



6. Metallic colored front air inlet

Product-1:



Product-2:



Product-3:



Product-4:



7. Panoramic windshield

Product-1:



Product-2:



Product-3:



Product-4:



8. The black painted region below the windshield

Product-1:



Product-2:



Product-3:



Product-4:



9. Metallic colored front bumper

Product-1:



Product-2:



Product-3:



Product-4:



10. Front bumpers with body color

Product-1:



Product-2:



Product-3:



Product-4:



11. Front body contour narrowing in the lower & higher ends

Product-1:



Product-2:



Product-3:



Product-4:



12. Rounded general view

Product-1:



Product-2:



Product-3:



Product-4:



13. Vertically assembled tail lamps

Product-1:



Product-2:



Product-3:



Product-4:



14. The circular tail lamps assembled to define triangular area

Product-1:



Product-2:



Product-3:



Product-4:



15. The transition recessed surface surrounding the tail lamps

Product-1:



Product-2:



Product-3:



Product-4:



16. The engine compartment air outlet on the rear face

Product-1:



Product-2:



Product-3:



Product-4:



17. The recess positioned on above the rear engine service door

Product-1:



Product-2:



Product-3:



Product-4:



18. The lower cut line on the rear glass composed of angular lines

Product-1:



Product-2:



Product-3:



Product-4:



19. Black painted spoiler

Product-1:



Product-2:



Product-3:



Product-4:



20. Rectangular engine service door

Product-1:



Product-2:



Product-3:



Product-4:



21. The recessed transition surface on the rear bumper

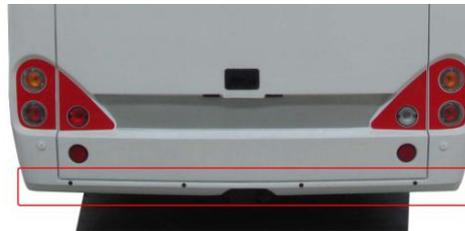
Product-1:



Product-2:



Product-3:



Product-4:



APPENDIX F-1

PARTICIPANT QUESTIONNAIRE FOR DFA

Tasarım Format Analizi Çalışması:

Bu çalışma ile "Tensa ürünlerine özgü tasarım elemanları ve tasarım özellikleri" tespit edilecektir.

Aşağıdaki dört farklı ürün üzerinde kullanılan tasarım elemanlarını, her bir ürün için genel tasarım üzerinde ne derece etkili ve belirgin olduğunu puanlayınız.

Açıklama: Her tasarım özelliği ya da elamanı için dört farklı model aracın resmi üzerinde, o elaman ya da özellik **kırmızı** renk ile işaretlenmiştir. Her resim üzerinde ise puanlama kutucukları yer almaktadır.

Üründe böyle bir özellik yok : (0 puan)
Yeteri kadar etkili ve belirgin değil : (1 puan)
Etkili ve belirgin : (2 puan)
Çok etkili ve belirgin : (3 puan)

GENEL GÖRÜNÜMLER:

ÜRÜN 1:



1. Dikey eksenle simetrik geri görüő aynaları:

Lütfen her ürün için kutucukları uygun rakamla yazın.

- Üründe böyle bir özellik yok : (0 puan)
- Yeteri kadar etkili ve belirgin değil : (1 puan)
- Etkili ve belirgin : (2 puan)
- Çok etkili ve belirgin : (3 puan)

Ürün-1:



Ürün-2:



Ürün-3:



Ürün-4:



APPENDIX F-2

DFA VIDEO SNAPSHOTS

Tasarım Format Analizi Çalışması

Bu çalışma ile “Temsal ürünlerine özgü tasarım elemanları ve tasarım özellikleri” tespit edilecektir.

Video da görülecek olan dört farklı ürün üzerinde kullanılan tasarım elemanlarının, her bir ürün için genel tasarım üzerinde ne derece **etkili ve belirgin** olduğunu puanlayacağız.

Açıklama:
Her tasarım özelliği ya da elemanı için dört farklı model aracın resmi üzerinde, o eleman ya da özellik **kırmızı** renk ile işaretlenmiştir. Her resim üzerinde ise puanlama kutucukları yer almaktadır.

Puanlama:
Üründe böyle bir özellik yok : (0 puan)
Yeteri kadar etkili ve belirgin değil : (1 puan)
Etkili ve belirgin : (2 puan)
Çok etkili ve belirgin : (3 puan)

Dikey eksende simetrik gori görüő aynalarının gösterilecek dört ürün için genel tasarım üzerindeki kullanımlarının “**etkinliğini ve belirginliğini**” puanlayınız.



Dairesel kuyruk lambalarının etrafını çevreleyen kademeli geçiş yüzeyinin gösterilecek dört ürün için genel tasarım üzerindeki kullanımlarının “etkinliğini ve belirginliğini” puanlayınız.



APPENDIX G

MAJOR DESIGN FEATURES OF TEMSA PRODUCTS

1. Panoramic windshield:

Product-1



2. The transition recessed surface surrounding the tail lamps:

Product-1



3. Horizontally assembled circular headlamps:

Product-1



4. The engine compartment air outlet on the rear face:

Product-2



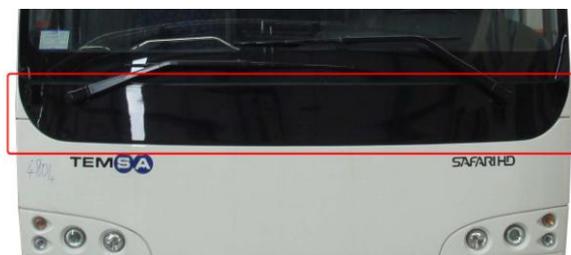
5. Vertically assembled tail lamps:

Product-2



6. The black painted region below the windshield:

Product-2



7. The metallic colored recess on the front face where the headlamps positioned:

Product-3



8. The line lying horizontally on the front bumper:

Product-3



9. The lower cut line on the rear glass composed of angular lines:

Product-3



- 10. Metallic colored front air inlet:**

Product-4



- 11. Rectangular engine service door:**

Product-4



- 12. Symmetrical rear view mirrors according to the vertical axis:**

Product-3



13. Front body contour narrowing in the lower & higher ends:

Product-4



APPENDIX H

PARTICIPANT QUESTIONNAIRE FOR IDENTIFYING THE RELATIONSHIP BETWEEN THE DESIGN FEATURES AND THE INTENDED DESIGN CHARACTERISTICS OF TEMSA PRODUCTS

Tasarım Karakter Analizi

Bu çalışmada sorgulanan dört farklı model ürün için belirlenmiş olan **tasarım elemanları**nın herbirinin, bu ürünler için önceden belirlenmiş **tasarım karakteristiklerini** ne ölçüde **yansıttıkları** ölçülecektir.

Tasarım elemanları ürünlere ait fotoğraflar üzerinde **kırmızı** çerçeve ile işaretlenmiştir. **Tasarım karakterleri** ise aşağıdaki gibidir ve her sayfada karşılardaki ölçü skalası ile birlikte verilmiştir.

Durable / Dayanıklı
Quality / Kalite
Strong / Güçlü
Safe / Emniyetli
Functional / İşlevsel
Bold / Cesur, Çarpıcı
Modern / Çağdaş
Innovative / Yenilikçi
Consistent, Harmonious / Uyumlu, Ahenkli
Dynamic / Dinamik

Bu çalışmada incelenecek olan dört farklı model ürüne ait **ön&arka yüz görüntüleri** ise aşağıdaki gibidir:

Ürün 1:



Ürün 3:



Ürün 2:



Ürün 4:



Ürünün genel tasarımına bakarak, aşağıdaki ürün üzerinde **kırmızı** ile **işaretli tasarım elemanının**, sıralanan **tasarım karakteristiklerini**, ne ölçüde **yansıttığını** puanlayınız.

Dikdörtgen arka motor bakım kapağı



Durable / Dayanıklı	1	2	3	4	5	6	7
Quality / Kalite	1	2	3	4	5	6	7
Strong / Güçlü	1	2	3	4	5	6	7
Safe / Emniyetli	1	2	3	4	5	6	7
Functional / İşlevsel	1	2	3	4	5	6	7
Bold / Cesur, Çarpıcı	1	2	3	4	5	6	7
Modern / Çağdaş	1	2	3	4	5	6	7
Innovative / Yenilikçi	1	2	3	4	5	6	7
Consistent, Harmonious / Uyumlu, Ahenkli	1	2	3	4	5	6	7
Dynamic / Dinamik	1	2	3	4	5	6	7