

Industrial Design in Turkey: A Historical Segmentation in Policy, Industry and Design

Elçin Tezel¹

¹ *Department of Industrial Product Design, Faculty of Architecture and Design, Bahçeşehir University, Istanbul, Turkey*

Corresponding author: Elçin Tezel, Department of Industrial Product Design, Bahçeşehir University, Çırağan Cad. Osmanpaşa Mektebi Sok. No:4-6, 34353 Beşiktaş, Istanbul, Turkey, E-mail: etezel@bahcesehir.edu.tr

Keywords: design, design policy, design history, industrialization, periphery, developmental strategies.

Abstract: As being one of the newly developing economies of the world, Turkey lately realized the contribution of industrial design to the government policies for a sustainable development. Two periods of industrialization in Turkish history which were characterized by their own patterns of production were separated by activities of Customs Union with EU in 1980's. Even after Customs Union, being unaware of the design scope; national development has been relied upon compartmentalized fields in industry, innovation, research and development where the integration problem was deteriorated by unstable economic and political situation. This article examines the dynamics that have influenced the emergence and maturation of industrial design in Turkey and the role of design policies which can successfully contribute to social and economic development that finally began to be situated in developmental strategies. In this progress, non-governmental institutions were the active role players for a bottom-to-up conduct and integration of design to government policies.

1. Introduction

In its most brief description, industrial design is an approach to design consumer products. The profession is rooted in the philosophy and practice of the Crafts movement and Bauhaus in Europe. Its concern with the manufactured products by industrial processes was developed after Industrial Revolution, which is characterized by the mechanization of industry. Industrial Revolution became instrumental for the diversification and mass production of artifacts to satisfy the needs of growing population.

Heskett (1980) declares that industrial design emerged as an essential concern of commercial and industrial activity. Fry (1988) also argues that industrial design is an outcome of modern capitalism that is associated with mass production and sales. In today's competitive global market, industrial design is treated as a strategic tool to build innovative concepts in materialization of artifacts in order to take an advantageous position in the market (Er, 1997). Hence, industrial design is considered as a strategic activity of industrialized market economies of the West and some South Asian countries like Japan and South Korea (Tezel, 2009).

Industrial design has been directly related to mass production and use processes of objects. The role of industrial design is not being a vehicle to satisfy the user by physical functionality, but it has been changed to be a strategic tool for the developing economies to compete in the globalized international market. Hence, industrial design needs to have two of its foot-holds to interact with each other to sustain the stand of the profession. In the developed countries which industrial design has been used as the infrastructure of the sustainable economy, national coordination has been provided between the means of economy, i.e. the politics, industry and education

which produces research and development (Tezel, 2009).

Theoretical background of design policies has configured by the demand of International Council of Societies of Industrial Design (ICSID) and United Nations Industrial Development Organization (UNIDO) in 1970's. Discourse of design policy enhanced by the recognition of design management as a unique study area (Er, 2002). Successful execution of design policies provided a competitive position to some South Asian countries in the global market. Having realized the significance of design to gain a competition in the global market, the interest to design policies increased in many developing countries. On the other hand, some of the developing countries, including Turkey, did not place design policies in their developmental strategies for a long time, since their relation to industrial and trade policies were not well established. However, recognition of industrial design in the developed countries was realized by the direct and indirect support of governments (Er, 1997).

According to Heskett (1999), policy is the description of principles, methods and goals in pursuit of certain developmental targets. Er (2002) defines policy as the governmental pressure to be applied to the shareholders until they appropriate them to reach to the economic and social goals. Design policies are executed effectively by creating the national design sources based on innovation and by directing them to industrial production.

As Giard (1996) emphasizes, design cannot be isolated from the other influential contexts. The context of design includes the political system, economic setting and social values. Hence, roots and progress of industrial design can only be examined through political, social and economic factors. In this context, this paper presents the history of main developments of industrial design in government policies and industry of Turkey. As the

methodology of the study, the interrelations of political system, social and economic dynamics of Turkey were investigated for the past sixty years, beginning from the early periods of industrialization of Turkey in 1950's. The paper aims to draw up the integration problems of industrial design to government policy and industry, and evaluates the problems of coordination in between throughout Turkish history.

2. Emergence and Development of Profession

The emergence of industrial design in all of the peripheral countries realized in academic field rather than in professional practice (Fathers, 2003; Bonsiepe, 1991). The case was not different for Turkey. Long before industrial design introduced to Turkish industry, industrial design programs have been planned in higher education by the design communities in central countries in order to meet the future demand. Hence, industrial design education was neither a demand from domestic industry nor as an insight of internal dynamics for a future investment. In the early 1970's, as a result of its nature of emergence, industrial design education started in higher education which was largely disconnected from the industry by means of sharing mutual knowledge and experiences. Industrial design education programs appeared first in Istanbul State School of Applied Fine Arts, and second in Middle East Technical University.

A crucial segmentation between training of design and industry in the forthcoming years rooted in various reasons. In the early developmental years of the profession, transfer of practice to the local industries could not be achieved. Before the establishment of Turkish Republic, small scale domestic industries were active, but Turkey was mainly an agrarian country. The first Ottoman factories were established by the Ottoman state. After establishment of Republic, Turkish state implemented a series of liberal policies, and turned to state production in 1930's. However, the real expansion in state enterprises occurred in 1950's. By the late 1950's, the initial state of industrialization was already completed under the protectionist policies. The 1950's witnessed significant growth in the number of industrial establishments. Industrial diversification occurred in consumption goods like food, leather, clothing and footwear industries. The growth of the large scale industries was accompanied by formation of workshops, many of which were integrated into production networks with larger firms. Practical applications of industrial design were difficult to emerge in Turkish industry for this period. Turkish industry was in the very early stage of formation and design was not being considered in the development theories on which Turkish state and outside funding agencies based their policies. These early years of development in Turkish industry were based on production oriented industrial system. Neither Turkish politics nor industry was aware of the fact that industrial design could be a tool of a developmental economic strategy (Er, 1994).

2.1. OUTER DYNAMICS AND EARLY DEVELOPMENTAL STRATEGIES

After World War II, based on an optimistic approach, the future and well-being of the humanity were the concern of global conjecture. Sustained development of the world was thought to be provided by economic integration and political stability across the global scale. The objective was to create a system of world economy that permits the underdeveloped countries to be institutionalize in the western style economic, politic and social order.

Emergence of industrial design in 1950's and 1960's in many peripheral countries was not a coincidence. Bonsiepe

(1990) points out that the introduction of the design to the periphery was strongly related to the development paradigm of the central to impose 'modernity'. Industrial design was regarded as the symbol of poverty alleviation to be brought by the developed economies to the periphery.

To understand the value of design as a tool of development, the political economy of design should be considered. What makes the design other than an individual practical activity is based on the power of design to create economic value. Design exhibits the ability to produce novel solutions to the existing alternatives, hence contribute to the designed artifacts by creating additive value. In the aggregate, design can be used as a driving force of economic growth and this economic significance situates design as a public policy object that is controlled by the government in pursuit of economic growth and development of society (Amir, 2004).

Including the other groups of developing countries, the first international approach for the introduction of industrial design in Turkey was started by U.S. government. In 1955, a program for some of the third world countries, which was parallel to the Marshall Plan was approved by the U.S. congress. The purpose of the program for periphery was to survey the craft based activities and to increase the competitiveness of these goods in the international market (Er and Langrish, 1993). However this early effort to introduce design and development to the local industries failed.

1960's were the years that industrial production has been disciplined by state politics through five year development plans. State-led Turkish industry was characterized by the execution of import-substitution industrialization. Meanwhile, private capital was enthusiastic to take part in import-subsidized policy of Turkey.

The growing Turkish industry was symbolized by the first Turkish automobile 'Devrim', was an engineering project rather than a design effort which the parts were assembled by craft techniques. In that period, private sector investments were supported by foreign capital under license such as Ford Otosan, Dodge and BMC truck factories (Figure 1).



Fig 1. First Turkish automobile "Devrim"

First representative of mass production of Turkish automotive industry was Anadol produced in 1966 (Figure 2). Following these developments, Tofaş automotive factory was opened to produce Fiat models with Italian license, and Oyak-Renault automotive factory was established in 1969 with French license. In the case of Turkey, these investments were the first initiatives of splitting the manufacturing activities from the design stage in order to use the local resources in an asymmetrical benefit between periphery and central.



Fig 2. First mass-produced Turkish automobile "Anadol"

Although design was assumed to function as a developmental tool for the periphery, developed countries preferred to concentrate on capitalist and profit-motivated nature of design that provided the real benefit for themselves (Margolin, 2008). Hence Turkey was one of the examples of dependency with its foreign investments that was characterized by technological and financial reliance of Turkish economy to the capitalist countries. The formation of small scale industries were detracted from the import of raw materials and semi-finished products.

Whereas, Japan was the first country that realized the fact that if they were to develop their local industries, they would need their own designers. At the end of the 19th century, in Meiji era, Japan began to train its own designers. In 1950's, they produced electronic devices and they defeated American television industry by their original products. Then they produced automobiles and they threaten American automotive sector by quality and pricing. Then South Korea began to produce electronic devices and automobiles and they held a significant international market share (Margolin, 2008).

In Turkey, early years of 1960's witnessed the establishment of State Planning Organization (SPO) which was a state institute to be charged to plan and organize economic developmental strategies. However design was still not seen as an object of discourse in industrialization strategies. Public and legal recognition of industrial design was not available in Turkey in this embryonic phase of Turkish industrialization.

Design was mentioned first in 1972, in the 3rd Five Year Development Plan within the context of higher education planning of state developmental strategies. In that plan; design, technology, development and design practice were related to each other in a hierarchical order. The one who practice the profession, was called 'designer and technology producer' and they were expected to acquire the abilities of research making and creative thinking in graduate programs of higher education (Hasdoğan, 2009).

Throughout its history, industrialization in Turkey progressed in two phases, in which distinctive linkages between local industry and international economy influenced the texture of production. Until 1980's, Turkish industry was far from competition of international market under protective barriers of import substitution. Turkish industry has been developed as a large domestic market to satisfy the needs of Turkish consumer. In this period, some private industrial enterprises were established and they assembled consumer durable goods with imported technological know-how and foreign license (Er et al., 2003). Except some large enterprises, Turkish producer found copying the original foreign designs as an easy practice, since the domestic market was protected by the import substitution

policies. Turkish consumer was ready to demand whatever proposed in the domestic market which was free from the foreign competitors. Hence, neither there was a need to introduce design scope in the production stage nor it was demanded by the Turkish consumer in the use stage (Asatekin, 1994).

2.2. CUSTOMS UNION AND EXPORT-ORIENTED INDUSTRIALIZATION

Turkey's liberalization efforts which were participated by export-led growth strategy started after 1980's. New government policies helped to develop a private sector of small and medium-sized enterprises. Though export-oriented industrialization and liberalization policies left an open space for design as a strategic tool, Turkish policy was unaware of the critical role of design in price and quality based competitiveness for international market economy.

Before design integrated policies appeared in government developmental strategies, propagation of design started by the establishment of a non-governmental organization, Industrial Designers Society of Turkey in 1988. The purpose of the organization was to promote industrial design to the Turkish public, to provide communication and solidarity among designers and to defend the rights and responsibilities of the profession (Hasdoğan, 2009).

In the 6th Five Year Development Plan of Turkey that covers 1990-1994 (State Planning Organization, 1989), 'product design' in industry called together with research and development activities. For the first time, design was referred as an activity to increase export opportunities and enhance the competitiveness in the global market. Unfortunately, Turkey underwent an economic crisis in 1994 which impeded the economic development and delayed the political commitment to apply the taken decisions (State Planning Organization, 1995). On the other hand, signing the membership to the Custom Union in 1995 compelled Turkish producer to compete with foreign companies with more value added products, especially in electronics, consumer durables, vehicles and transport equipment (Çakmakçı, 2005). This competition and struggle against the economic crisis could not be pursued without innovative power of design.

1990's were the years that small and medium-sized enterprises (SMEs) in Turkish market reached the highest percentage (%99.8) of total enterprises which accounted for %26.5 of the value-added sectors and only %10 of the exports (OECD, 2004). Many studies indicate that Turkish SMEs are below the EU-OECD average in terms of know-how and financing (Gümürlüoğlu and Elçi, 2009). Even today SMEs are too weak to invest in design and pay-off for that investment seems to occur in long term.

2.3. DESIGN RELATED PROGRESSES

Although Turkey experienced sequential economic crises between 1994 and 2001, this period was also the most active period that government has been interested in design oriented policies. Depending on Custom Union Agreement, concordance laws encompass intellectual property rights legislation. Later in 1995, a governmental decision about protection of product designs was accepted and Turkish Patent Institute (TPE) began to register product designs. Design registry system was one of the most important contributions of the government to develop a design policy in that period (Hasdoğan, 2009; Ersayın, 2009).

Although science and technology policy making practices were applied as early as 1960's in Turkey, it was in mid-1990 that innovation subject has started to be discussed. Depending on

EU's "Green Paper on Innovation" declaration (European Commission, 1995), Turkish government initiated the establishment of the National Innovation System which aims to coordinate the operation of institutions to carry out scientific and technological research. The results of this research would be transformed into the economic and social benefit. While The Supreme Council of Science and Technology (TÜBİTAK) was the highest level policy coordination body for innovation, a large number of dynamic private and non-governmental organizations contributed to the innovation system. Turkish Exports Assembly (TİM), The Union Chambers on Commodity Exchanges of Turkey (TOBB), Export Promotion Center of Turkey (İGEME), The Turkish Industrialists' and Businessmen's Associations (TÜSİAD), Turkish Patent Institute (TPE), The Supreme Council of Science and Technology (TÜBİTAK) and Technology Development Foundation of Turkey (TİDEP) are some of the examples of these innovation intermediaries. In recent years, these organizations have been providing immense awareness in innovation. However, they do not have a broad scope and understanding on design (Er and Er, 2004).

2000's witnessed further actions taken by the government to integrate industrial design within industrial development strategies. Governmental institutions began to become shareholders of design promotion programs and they contributed to finance of design events. The 8th Five Year Development Plan that covers 2001-2005 encompasses the strategies based on development of new designs and brand making instead of relying on low wage labor and price competition in global market (State Planning Organization, 2001). According to new government policy, research and development programs have been promoted in certain production sectors alongside patent and industrial design registry system.

Relying on export oriented governmental grant in aid, Undersecretariat of the Prime Minister for Foreign Trade (DTM) notified and series of design promotion activities beginning on 2006. Employment of designers and design consultancy has been supported according to these notifications. Additionally, Turkish Exporters Assembly (TİM) started a promotion activity to support companies, offices and associations of designers to finance their activities in abroad. For all these design initiatives, Industrial Designers Society of Turkey (ETMK) has been the loyal contributor to all design promotion efforts that increased the awareness of industrial design in Turkish society. Due to those support activities, the number of design exhibitions and competitions increased. Since 2008, Design Turkey, a national design award system which aims to encourage qualified design and guide the strategies of Turkish industry has been arranged by ETMK with cooperation of governmental and non-governmental institutions.

A long-lasting economic crisis which started in 2008 has stood as an impediment to implement the developmental policies. However, Turkish Design Council which was the most conspicuous initiative of the government was established by the decision of the Council of Ministers in 2009. The aim of Turkish Design Council was to provide the coordination to enhance competitiveness by value added products, to accommodate collaboration between designers and industry and to develop the image of Turkish design in international market.

The 9th Five Year Development Plan covering 2007-2013 encompasses the clustering strategies for the establishment of collective design, production, research and development centers for industrial regions and SMEs (State Planning Organization, 2006). It appears that Small and Medium Industry Development Organization (KOSGEB) is the agency that runs and supervises government's policies and works as an interface to coordinate many activities to achieve the improvement of SMEs. In the

short run, Small and Medium Industry Development Organization (KOSGEB) aims to develop technological skills of SMEs, improves training and access to use of design information, provide financial mechanisms so that SMEs can invest on design (OECD, 2004).

3. Evaluation of Current Situation

Increase in quality and quantity of design activities and being shared those activities by governmental stakeholders are promising for the future. In spite of the initiation of political debate on industrial design; weak economic environment, coordination problems in implementation, insufficient governance of design policies has been the major drawbacks to create conducive climate for an integrated development.

South Asian countries who implemented design policy for economic development were found to invest on knowledge production and dissemination. Turkey needs an urgent need to improve its educational and knowledge production capacity. Not only for industrial design but also the other disciplines, quality and quantity of graduates from higher education need to be determined according to potential demand of industrial field.

In order to prevent segmentation in various factors of development, two pillars of knowledge investment, knowledge production and knowledge dissemination should be well implemented. Knowledge production is conducted by research and development (R&D) activities and R&D facilities are mostly located in universities and governmental institutions, but not widely in industrial private enterprises (OECD, 2004). However, commercialization of research results is low in Turkey. Clustering and networking is crucial for knowledge and design dissemination both for organized industrial regions and for SMEs. The challenge is to activate the R&D institutions and universities to collaborate with industry for knowledge exchange. For the integration, policies that create mutual benefits and incentives between the actors can be implemented by the government.

As already began in mid-1990's, government should continue to raise the awareness of design in enterprises and society. Financial supports and being active partners of design activities enhance the awareness of design and promotes the design discourse in various fields.

4. Conclusion

The early developmental paradigm was mainly focused on economic advancement which has been guided by the most industrialized countries. However, definition of development has shifted to a larger context based on human well-being in which economic infrastructure is just a part of it (Amir, 2004). Now it is known that economic problems of peripheral countries cannot be solved through designing low-cost products, low-wage laboring, and the like. New developmental paradigm acknowledges the other concerns like health, culture, social equity and education among others. Sustainable development is a challenge for societies that require them to accept ethical consumerism and respect to the others. Multiple factors have to be integrated such as trade, technology transfer, collaboration among disciplines, cultural expansion and knowledge production that affect the conditions for development.

Where does design stand in this large scale picture of developmental paradigm? In the past 50 years of Turkish developmental history, an apparent segmentation has observed in governmental policies concerned about industrial, administrative and knowledge production strategies. Investments on science and technology have been made since 1960's, but innovation and

design related initiatives were started in mid 1990's. While science and technology cannot be accepted only the concern of engineering, industrial development cannot be tied only to manufacturing strategies and financial dispositions. A comprehensive model of development should embrace design policy which is further than materiality of industrial design to increase economic competitiveness.

Developed economies of the world shifted from industrial manufacturing to knowledge production, service creation and innovation. Significance of innovation in today's business world and its contribution to economic success has been discovered in the examples of South Asian countries like South Korea, Japan and Thailand. Economic growth and social well-being of these countries have been relied upon innovation oriented design strategies which were coordinated by governmental policies. Innovation related activities are emerging as a significant part of many disciplinary functions, not only in science and technology, but also in business, manufacturing and services. Some argue that creativity in particular is the leading way of thinking to innovation (Florida, 2003), while some others contemplate that design thinking has more integrated in business processes through innovation oriented nature of the discipline (Dunne and Martin, 2006; Brown, 2008).

Innovation oriented nature of design leads to new forms of value in various disciplines. The contribution of design thinking to business, technology, communication and services can cause macro level effects and enables social, cultural and economic development. Some of the newly developing economies, including Turkey, have disregarded design policy since there wasn't any infrastructure that explains the contribution of design to development and betterment of society. Additionally, design thinking in a society requires maturation similar to development of its economy, administration and services. However, governmental policies are the main coordinator in the progress. Coherent implementation of strategies in different fields of work and involving consultation of key stakeholders at all stages should be in place to integrate into a sustainable development.

References

- Amir, S. (2004) Design Policy in the Third World. *Design Issues*, 20(4), 68-75.
- Asatekin, M. (1994) Turkish Design Facing the Global Market. In: G. Hasdoğlan (Ed.). *Tasarım, Endüstri ve Türkiye*, Proceeding of the International Product Design Symposium, Ankara: ODTÜ, 3-8.
- Bonsiepe, G. (1990) Industrial Design in the Periphery. In: (Ed.) *History of Industrial Design*, Milan: Electa.
- Bonsiepe, G. (1991) Developing Countries: Awareness of Design and the Peripheral Condition, *History of Industrial Design: 1919-1990 The Dominion of Design*, Milan: Electa.
- Brown, T. (2008) Design Thinking. *Harvard Business Review*, 86, 85-92.
- Çakmakçı, U. M. (2005) The Context of Innovation and the Role of the State. In: Trott P. (Ed.). *Innovation Management and New Product Development* (3rd ed.). England: Pearson Education Limited.
- Dunne, D. and Martin, R. (2006) *Design Thinking and How It Will Change Management Education: An Interview and Discussion*. *Academy of Management Learning and Education*, 5, 512-523.
- Er, H. A. (1994) The Emergence and Developmental Patterns of Industrial Design in Newly Industrialised Countries with Particular Reference to Turkey. Ph. D. Dissertation, Institute of Advanced Studies, Manchester, Manchester Metropolitan University.
- Er, H. A. (1997) Development Patterns of Industrial Design in the Third World: A Conceptual Model for Newly Industrialized Countries. *The Design History Society*, 10(3), 293-307.
- Er, H. A. (2002) Does Design Policy Matter: The Case of Turkey in a Conceptual Framework. In: Lee Soon-in. (Ed.). *Design Policy and Global Network*, World Design Forum. Seongnam: Korea Institute of Design Promotion and ICSID.
- Er, H. A. and Er, Ö. (2004) *Endüstriyel Tasarım ve Sürdürülebilir Rekabet: Ulusal Tasarım Politikası için Bir Öneri*. Türkiye İktisat Kongresi, Gelişim Stratejileri ve Makroekonomik Politika Raporu.
- Er, H. A., Korkut, F. and Er, Ö. (2003) U.S. Involvement in the Development of Design in the Periphery: The Case History of Industrial Design Education in Turkey, 1950s-1970s. *Design Issues*. 19(2), 17-34.
- Er, H. A. and Langrish, J. (1993) *Industrial Design in Developing Countries: A Review of the Design Literature*. Manchester: Institute of Advanced Studies, The Manchester Metropolitan University.
- Ersayın, S. E. (2009) Endüstriyel Tasarım ve Türkiye. [html file] 2009: ETMK. Accessed URL: <http://etmk.org.tr/blog/genel/endustriyel-tasarim-ve-turkiye>. [27.1.2011] (In Turkish)
- European Commission. (1995) *Green Paper on Innovation*. http://europa.eu/documents/comm/green_papers/pdf/com95_688_en.pdf [4 April, 2011].
- Fathers, J. (2003) *Peripheral Vision: An Interview with Gui Bonsiepe Charting a Lifetime Commitment to Design Empowerment*. *Design Issues*, 19(4), 44-56.
- Florida, R. (2003) *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. New York: Basic Books.
- Fry, T. (1988) *Design History: Australia*. Sydney: Hale and Iremonger.
- Giard, J. (1996) Canadian Design and the National Agenda: Toward the Year 2005. *Design Management Journal*, 7(3), 28.
- Gümüşlüoğlu, L. and Elçi, Ş. (2009) How to Address the Turkish Paradox of Innovation to Build a Competitive Economy? In: N. Aydoğan (Ed.). *Innovation Policies, Business, Creation and Economic Development*, International Studies in Entrepreneurship 21, Accessed URL: <http://www.springerlink.com/content/q508p101v8008v10/fulltext.pdf> DOI 10.1007/978-0-387-79976-6_15. [27 March 2011].
- Hasdoğlan, G. (2009) Türkiye'de Devletin Endüstriyel Tasarıma Yönelik Girişimleri ve Endüstriyel Tasarımcılar Meslek Kuruluşunun Bu Girişimlerdeki Rolü. In: H. Alpay Er, H. H. Bağlı, L. N. E. Arıburun, Ö. M. Çelikoğlu, K. Gelmez (Eds.). *Tasarım veya Kriz 4. Ulusal Tasarım Kongresi Bildiri Kitabı*, İstanbul: İTÜ, 173-189. (In Turkish)
- Heskett, J. (1980) *Industrial Design*. London: Thames and Hudson.
- Heskett, J. (1999) *National Design and Economic Change*. md, 8, 59-60.
- Margolin, V. (2008) *Design for Development: Towards a History*. Accessed URL: <http://www.changingthechange.org/blog/2008/01/21/design-for-developmenttowards-a-history/> [21 March, 2011].
- OECD (2004) *Small and Medium-Sized Enterprises in Turkey: Issues and Policies. Small and Medium-Sized Enterprises Outlook*, OECD, Paris. Accessed URL: <http://www.oecd.org/dataoecd/5/11/31932173.pdf>. [30 March, 2011].
- State Planning Organization. (1989) Accessed URL: <http://ekutup.dpt.gov.tr/plan/plan6.pdf> [15 April, 2011].
- State Planning Organization. (1995) Accessed URL: <http://ekutup.dpt.gov.tr/plan/plan7.pdf> [15 April, 2011].
- State Planning Organization. (2001) Accessed URL: <http://ekutup.dpt.gov.tr/plan/plan8.pdf> [15 April, 2011].
- State Planning Organization. (2006) Accessed URL: <http://ekutup.dpt.gov.tr/plan/plan9.pdf> [15 April, 2011].
- Tezel, E. (2009) Krizler ve Bir Değişim Aracı Olarak Tasarım Olgusuna Tutunabilmek. In: H. Alpay Er, H. H. Bağlı, L. N. E. Arıburun, Ö. M. Çelikoğlu, K. Gelmez (Eds.). *Tasarım veya Kriz 4. Ulusal Tasarım Kongresi Bildiri Kitabı*, İstanbul: İTÜ, 369-382. (In Turkish)