

*Full Length Research Paper*

# **The structural analysis of small and medium size furniture enterprises in Turkey based on production, capacity use and working environment**

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**A sector based questionnaire study related to analyzing the structures of small and medium size furniture enterprises in Turkish furniture industry was carried out. The questions asked to this enterprises in this questionnaire were related to “production, capacity use, and working environment”. The current situation and the problems of those enterprises were determined according to the analysis results. Lastly, solution recommendations to the determined problems were presented with the help of the obtained data.**

**Key words:** Furniture, questionnaire, small and medium size enterprise (SME).

## **INTRODUCTION**

Small and medium sized enterprises (SME) are considered to be at the heart of the economic and social life all over the world since they can adapt to demand diversifications easily by creating more product variety with less investment, because they contribute to the inter-regional balanced development and employment significantly, are complementary of big sized enterprises as supplier industry and are affected by economic fluctuations.

According to State Institute of Statistics data related to census of general manufacturing industry businesses in 1992, the role of SME, which forms 99.5% of the enterprises active in Turkey, for manufacturing industry and employment are crucial. This shows the significance of SME in manufacturing industry sector thanks to their national economy, social and political positions. Thus, SME were paid great emphasis and priority in the 6th and 7th frame work programmes implemented by the European Union (Cayli, 2006).

SME have significant function not only in economic life but also in social life. Since SME are spread in a wide area in Turkey they may have great significance in eliminating regional development differences, providing

ownership widespread in a broad area, creating employment opportunity and supporting democratic life. Ownership passion, success desire, brave steps and enthusiasm for investing of SMEs entrepreneurs are acceptable for the basic mechanisms of the political stability (Akgemci, 2001).

SMEs, highly important for Turkish economy, are faced with very serious difficulties. As known, world becomes smaller and trade markets become closer day by day as a result of globalization. The problems that SMEs encounter should be eliminated immediately so that they can compete in developing and changing economic world.

The aim of this study is to present the current state of the small and medium size enterprises in furniture sector in Turkey-which are determined as the material (by the help of questionnaires, about the subjects presented under the main headings such as manufacturing, capacity usage and working environment), to determine the problems they encounter and to generate solution offers to overcome these problems. Moreover, the study aims to form a base for determining the role that will be taken in charge to constitute necessary government policies and to introduce development strategies of enterprises.

Examining the literature about SMEs shows that there is not a commonly acknowledged definition of an SME. In fact, a SME is one of the basic components of the economy in all over the world countries. Their role is very

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**Table 1.** SME definition in the Europe Union countries.

SME	Small	Medium
Employee Number	Lower than 50	Lower than 250
Annual Endorsement Sum/Annual Balance Sheet Sum	Annual Balance Sheet Sum<10 Million EUROS Annual Endorsement<10 Million EUROS	Annual Balance Sheet Sum<43 Million EUROS EUROS Annual Endorsement <50 Million EUROS
Independence	More than 25% of its shares and the right to manage the enterprise must not belong to another enterprise.	

important for development, employment and economy. The main reason for not being able to make a shared definition is that countries or the areas in the countries have different development levels.

To provide a cooperation among member countries and to regulate incentives and aids the Europe Union made a general definition of an SME in 1996 as a result of the studies it had carried out. The criteria grounded on in the definition are employee number, balance sheet size and the level of independence of the enterprise (Akgemci, 2001; Müftüoğlu and Durukan, 2004). Table 1 shows SME definition in the Europe Union countries. It is emphasized in the study called “The Structural Problems of Furniture Industry in Turkey and Solution Offers” that the inadequacy of educated staff appears to be the primary problem of the furniture industry (Demirci, 2004).

The study named “The Structural Problems of The Furniture Manufacturing Business in The Scope of SME in Istanbul” states that Istanbul furniture industry has been set up in the form of atelier type small-sized enterprises but it also includes medium and big sized enterprises doing serial production and small-sized enterprises have an important part in the sector’s manufacturing (Akin, 2003).

It was concluded in the article named “The Structural View of Turkey’s Furniture Industry” and presented at the International Furniture Convention that furniture industry has important structural, organizational and technological deficiencies, but it has made positive improvements despite these negative indicators and development trend goes on-as a result of the study carried out after collecting information and evaluation of the data at sector base without focusing on either positive or negative indicators of the furniture industry in Turkey (Kurtoğlu et al., 1999).

The structure, problems and exportation potential of the furniture sector of Turkey were put forth in the report named “The Furniture Sector in the World and Turkey” prepared by Istanbul Chamber of Commerce (ICOC) and the report has aimed to provide enough information for exporters to compete with rival country businesses at foreign markets (Kayacikli and Emil, 2003).

According to Yilmaz (2005), small and medium sized enterprises have very low success levels regarding production, marketing, financial, organization and enterprise management and also electronic trade management.

Those companies were not completely aware of governmental or non-governmental support. The enterprises are usually overwhelmed by bureaucratic processes on financial support and credit applications. The ongoing effects of economical crisis also discourage those enterprises.

Nemli et al. (2007) investigated the current situation of small and medium sized furniture manufacturers in Turkey. According to the survey, some of the problems that the companies face were reported as procurement of raw materials, low inventory capacity and marketing problems.

Robb and Xie (2003) investigated the manufacturing strategies of 72 Chinese furniture companies based on a survey. The results were compared with other studies especially made in the US. The current status, future plans and the manufacturing technology implementations and initiatives were presented.

Small and medium sized enterprises (SMEs) and family businesses are encouraged to be institutionalized to overcome the problems associated with uncertainty and growth. It seems that the term is attached variety of different meanings in Turkish context, very far from the original institutional theory. Even fundamental organizational principles and generally accepted business practices are suggested as methods towards institutional transformation (Ulukan, 2005).

## MATERIALS AND METHODS

### Materials

According to State Institute of Statistics data 29346 enterprises are active officially for various product groups in furniture sector in Turkey and 1547 registered enterprises are active according to Turkish Union of Chambers and Commodity Exchanges, but if carpenters and micro-enterprises of atelier type are included in the category of small enterprises these figures are estimated to be 70.000. Hence, active small and medium size enterprises in furniture sector in Turkey that are our study material constitute a very big sample size. Since it is very difficult to reach all the cities in order to provide the minimum sample size of enterprise number that can express Turkey as a whole this study can be described as a preliminary questionnaire. Small and Medium Industry Development Organization definitions were used to determine the business size and accordingly the enterprises employing workers between 1 and 50 were considered as “small sized” and the enterprises employing workers between 51 and 150 were considered as “medium sized”.

The furniture sector in Turkey has gathered at certain regions where the market is dense and/or forest products are dense. According to their share in overall production furniture production areas having importance are arranged as Istanbul, Ankara, Bursa (Inegol), Kayseri, Izmir and Adana. The questionnaires were decided to be carried out firstly in the enterprises in these cities and the enterprises to be included in the questionnaire were reached through random sampling.

## Methods

"The questionnaire technique" was used as a data collecting instrument. The thesis students carried it out in universities and the questionnaires conducted by various institutions at sectoral base were examined in order to prepare the questionnaire form. The data were obtained from the activities of the enterprises between 2000 and 2005. Conducting the questionnaires and data collection process was carried through visiting most of the enterprises in Istanbul, Ankara and Bursa, and through interview method. The questionnaires for the other cities were carried through the contributions of the students at ZKÜ Forestry Faculty Forest Industrial Engineering as pollsters during their practical training. Besides questionnaire forms were sent to nearly 150 enterprises through electronic mail but 15 enterprises responded the e-mails.

Determining the present state of the small and medium sized furniture enterprises has been aimed in the study. The data obtained from State Institute of Statistics and Turkish Union of Chambers and Commodity Exchanges were used for this aim. According to the data obtained from State Institute of Statistics there are 29346 enterprises active in furniture sector for various product groups and according to the data obtained from Turkish Union of Chambers and Commodity Exchanges there are 1547 enterprises registered. The formula (1) below was used in order to determine the number of the enterprises where questionnaires had to be conducted according to the data (Akyuz, 2000).

$$n = \frac{Z^2 \times N \times p \times (1-p)}{(N \times D^2) + (Z^2 \times p \times [1-p])}$$

Where n is the minimum sample size required, Z is a mathematical constant defined by the Confidence Interval chosen i.e. (how sure we need to be of the result); Z value (e.g. 1.96 for 95% confidence level), N is the whole target population in question, p is the average proportion of records expected to meet the various criteria, (1-p) is the average proportion of records not expected to meet the criteria, and D is the margin of error deemed to be acceptable (calculated as a proportion) e.g. for 5% error either way  $D = 0.05$  (Anticipated sampling error for the study is 10%).

When the data in the formula were entered it was determined that the minimum sample size had to be "96" (If the enterprise number in Turkish Union of Chambers and Commodity Exchanges is applied to the same formula the minimum sample size obtained is 90 enterprises). However, 137 enterprises were included in order to increase the reliability of the study results.

It was not needed to make a statistical evaluation since any comparison had not been aimed in the questionnaire. Only the data obtained from the answers given to the questions were evaluated and examined as percentages by charts and figures.

## RESULTS AND DISCUSSION

The answers obtained from the questionnaires were analysed under the main headings "production, capacity

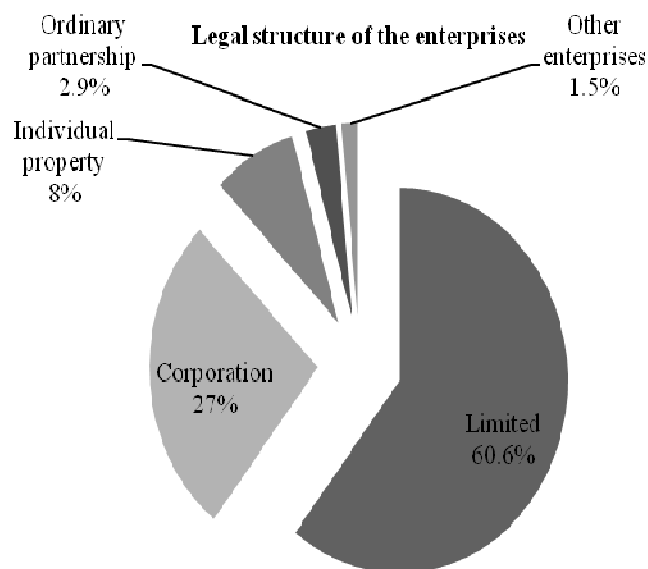


Figure 1. Legal structure of the enterprises.

usage and working environment" and supported with figures in context with present state and problems encountered through mid-term evaluations.

## Production

### Legal structure of the enterprises

According to the data reflecting the legal structure of the enterprises, the enterprises are arranged as 60.6% limited company, 27% corporation, 8% individual property, 2.9% ordinary partnership and 1.5% other enterprises (commandite, cooperative, etc). Results about legal structures of enterprises can be seen in Figure 1.

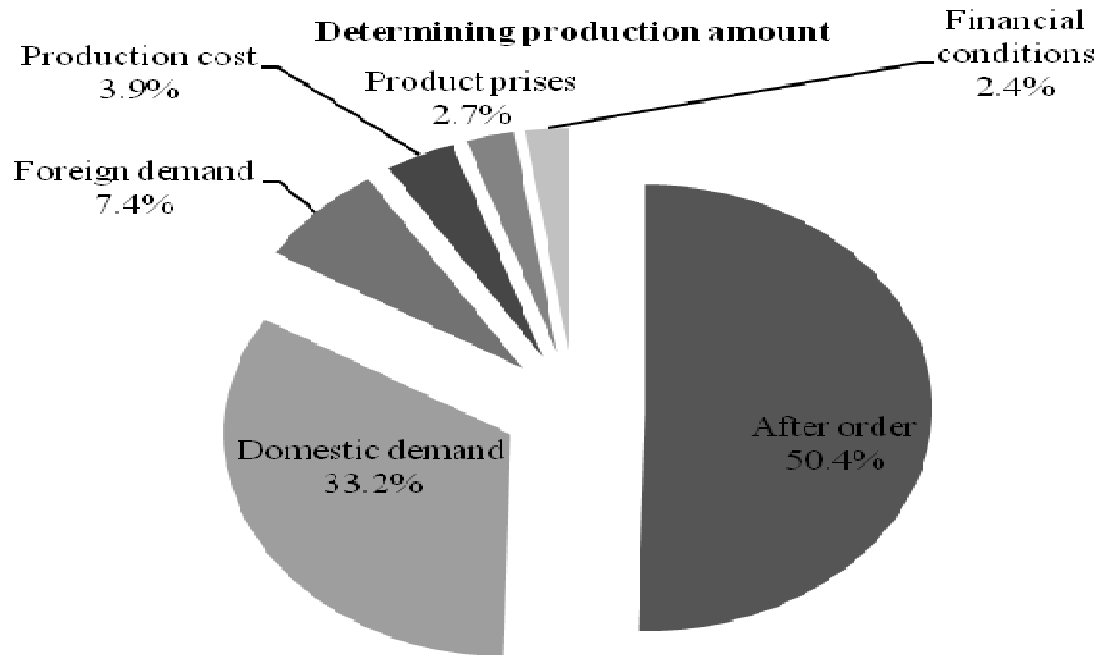
Evaluating the enterprises in terms of "their legal structures" shows that a corporate status structure comes into prominence. This type of structure may be seen as a positive sign in respect to sector's development.

### Foreign agency and legation state of the enterprises

That 52.5% of the enterprises have agency and legations outside the city or the country and 47.5% have no agency and legations were found.

### Production unit (out-of-town or foreign)

While 97.1% of the enterprises has not out-of-town or foreign production units 2.9% have them. The ones having production units outside the city or country are joint stock company type enterprises that have much capital stock and limited enterprises which are subtypes



**Figure 2.** Determining production amount.

of them. This reveals the fact that enterprises must have strong capital structure to be able to found production unit outside the city or country.

### **The enterprises manufacturing for famous brands in Turkey and the world**

The enterprises have reported that while 93.4% of them do not manufacture under the names of famous brands, 6.6% manufacture under the names of famous brands in Turkey and the world.

### **Determining the production amount**

The factors determining the production amount of the enterprises are 50.4% production after order, 33.2% domestic demand, 7.4% foreign demand, 3.9% production cost, 2.7% product prizes and 2.4% financial conditions (Figure 2).

Since the enterprises make production of “order style”, the equipment they need change in compliance with the order they receive. Therefore, they cannot tend to long term equipment procuring as they do not use the same equipment continuously. Their financial state often does not allow them to have big purchases. Therefore, considerable problems occur in procuring desired amount of desired equipment in desired time. These problems can only be overcome by paying high costs for the equipment or allowing high tolerances for the equipment standards, which affect the cost and the quality negatively.

### **Product quality**

As can be understood from Figure 3, the products are produced at the same quality in the 64.2% of the enterprises, but it changes according to the demand in the 35.8% of the enterprises. The change according to the demand is felt more especially by the small sized enterprises in terms of product quality.

### **Capacity use**

#### **Capacity use percentages of the enterprises**

Examining the average capacity use percentages of the enterprises shows that average capacity use was 70.2%.

#### **The reasons why the enterprises cannot make full-capacity production**

Examining the reason why the enterprises make full-capacity production has disclosed that the primary problem is financial impossibilities (30.3%). Then, respectively demand inadequacy (26.6%), problems related to the workers (21.5%), raw material insufficiency (9.8%), seasonal working (6.7%), energy deficiency (4.4%) and other reasons (0.7%) are the problems that constrain full capacity production and that can be seen at Figure 4.

The greatest problem of the enterprises in terms of financial impossibilities is “difficulties in providing credit” and another handicap encountered by the enterprises in

### Product quality

■ At the same quality ■ According to the demand

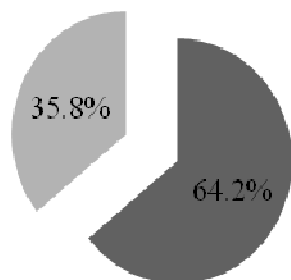


Figure 3. Product quality.

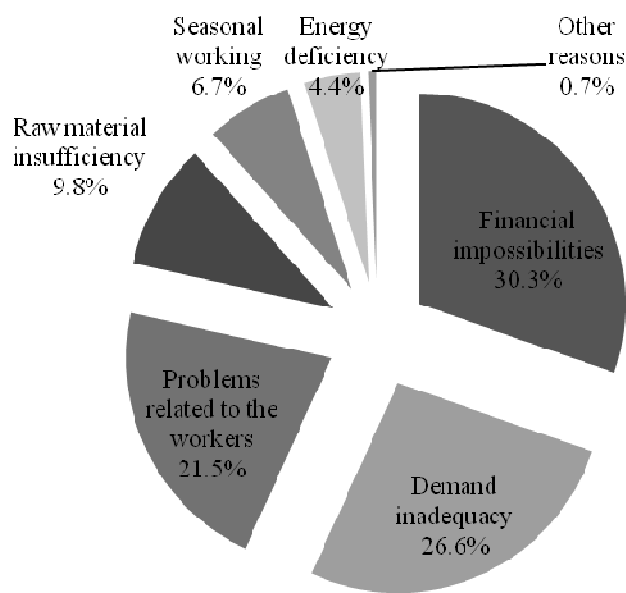


Figure 4. The reasons why the enterprises cannot make full-capacity production.

terms of full-capacity production is the “excessive credit costs”. The greatest energy problem in respect to energy deficiency is related to “electricity”.

### Working environment

#### Technical staff with vocational education

Examining the enterprises employing technical staff shows that 56.9% of the enterprises employ technical staff, while 43.1 of them do not employ technical staff.

### Technical staff conditions

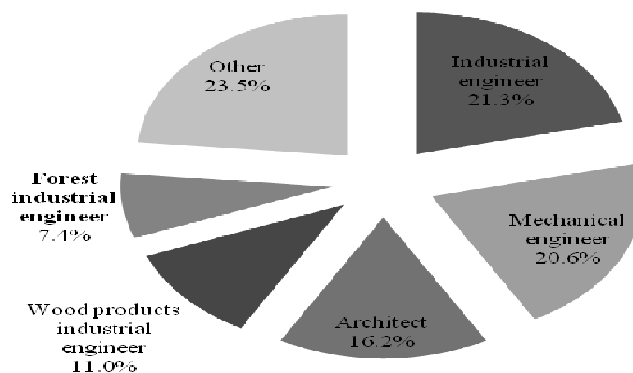


Figure 5. Technical staff conditions.

Examining the titles of the technical staff, it can be seen that (also shown at Figure 5) respectively 21.3% of the enterprises employ industrial engineer, 20.6% employ mechanical engineer, 16.2% employ architect, 11.0% employ wood products industrial engineer, 7.4% employ forest industrial engineer and 23.5% employ other people with engineering or university graduate title.

The results of the questionnaire show that nearly half of the enterprises (43.0%) do not employ engineers and the enterprises having engineers employ industrial engineer, mechanical engineer and architect at the most. However, the employees the most eligible and qualified for this sector are graduates with “forest industrial engineer” and “wood products industrial engineer” titles.

#### Employees member of a union and employing sub contract worker

It has been found out that 94.2% of the enterprises have no employee that is a member of union but only 5.8% of the enterprises have employees who are members of a union. It can be seen through examining the enterprises that subcontract workers are employed by 11.7% of the enterprises while 88.3% of them do not employ subcontract workers.

The enterprises sometimes have difficulties with strikes, lock-outs and worker recruitment. The enterprises point out that they employ workers who are not members of a union or they take written guarantee from the workers that will not be members of any unions. The reason why enterprises choose this way is explained by them as especially workers who are members of a union may work at lower capacity than they can by trusting their rights such as strike and indemnity. This problems continuing for years can be overcome through a consensus between the administrators of the enterprise and union under the control of the state.

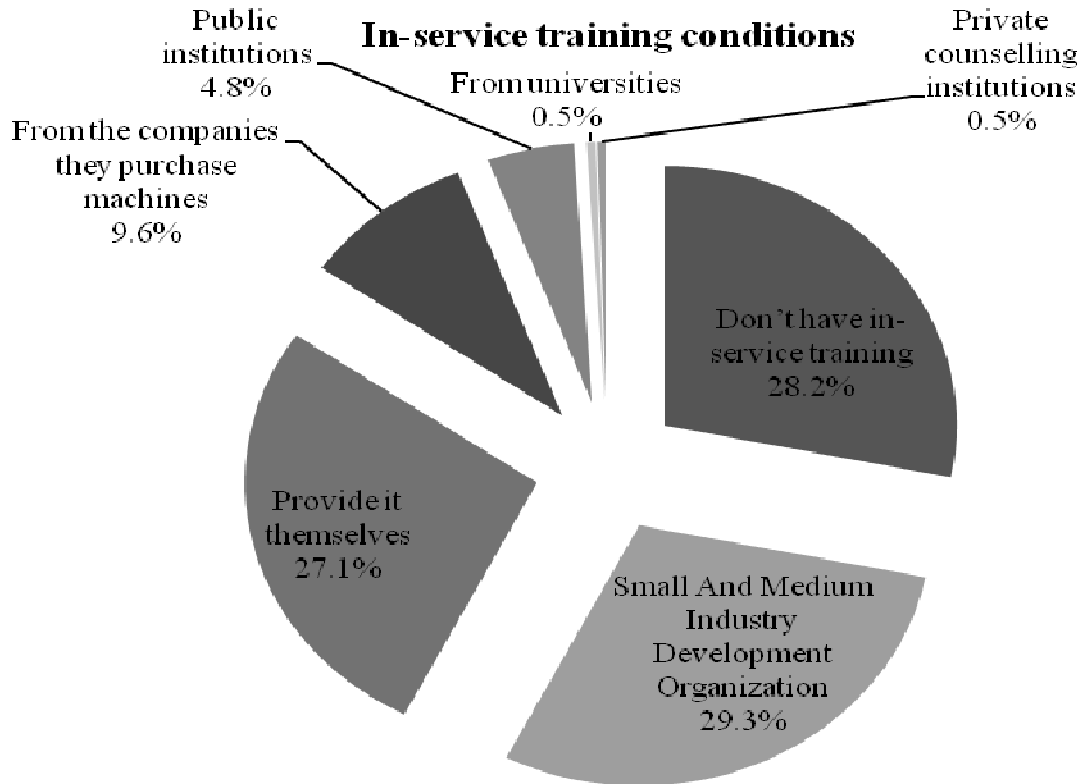


Figure 6. In-service training conditions.

**In-service training in the enterprises**

28.2% of the enterprises do not have in-service training. The enterprises having in-service training provide it through different ways such as Small And Medium Industry Development Organization provides it for 29.3% of the enterprises, 27.1% of the enterprises provide it themselves, 9.6% of the enterprises provide it from the companies they purchase machines, 4.8% of the enterprises provide it from public institutions and 0.5% provide it from universities and private counselling institutions as can be seen in Figure 6.

It is reported that in-service training is provided firstly by the Small and Medium Industry Development Organization, second by themselves and then respectively by the companies they purchase machines and by the other public institutions. The point catching attention here is that the percentage of in-service training provided by universities and private counselling institutions is very low (53 per mile). This shows that university-industry cooperation is very lower than the expectations.

**Conclusion and recommendations**

The most important problem of the enterprises in terms of financial impossibilities is “difficulties in obtaining credit”

and “high cost of credits” is another hindrance for their full-capacity production. The most effective decision-making mechanism for the solution of this problem is state policy. The state must help SME, the most dynamic cogwheel of the production system, take helpful and determined steps for the financial impossibilities they have and put necessary incentive precautions promptly just because the more productive SME are, the more added values they provide in terms of production and employment for the state.

Moreover qualified worker problem can be overcome easily through university-industry cooperation. There are a lot of Vocational High Schools providing furniture education all over the country. If the enterprises cooperate with these schools qualified students can be determined just during practical training and can be employed after graduation. The enterprises must increase the proportion of employing engineers and give priority to the forest industrial engineers and wood products industrial engineers for furniture sector. A legal arrangement can be recommended for this subject. Accordingly, employing at least one forest industrial engineer must become a legal compulsion for medium sized enterprises.

One of the continual problems of SME is that they are not aware enough of the institutions and organizations providing service for them and the content of the service

due to complex administrative structure. Because of this disorganization and lack of information flow approximately more than half of the allocation in the budgets of them public institutions and organizations serving for SME-approximately 800 billion new Turkish liras-cannot be benefitted. Besides, this multi-leg structure causes a coordination deficiency in applying SME policies. It is vital that regulations for enterprises must be simplified, unnecessary regulations must be abolished, and the applications of SME to the public institutions must be dealt with promptly and perspicuously. It is also very important that SME must be informed about which service can be obtained from which institution and how it can be obtained. The institutions that will provide support for SME complain that they do not have enough demand while SME complain that they do not have enough support they need.

The synergy that will occur through a synthesis of the history of the small and medium size enterprises grounded on traditions, the skill of Turkish people to start a new business and to run a risk and today's technology together with new approaches will help small and medium size enterprises to compete with 18 million SMEs in Europe that constitute 70% of Turkey's external trade. The institutions and organizations engaged in servicing and providing support for SME also have significant duties and responsibilities as SMEs in order to accomplish the goals stated above.

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