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Activity situation analysis for production of furniture businesses

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Abstract

One of the greatest problems of developing countries is that they have limited sources. What is hold should be optimally used as enrichment of sources and it requires a variety of long-term measures. Economic development of a country is merely possible with increase of production and income. In this study, production planning and control which is an irreplaceable function of production in businesses and of which requirement is felt more with time, analysis of activities and formation of substructure (field, construction, machine, personnel, market, etc.) conditions for establishing a new furniture factory are explained. Seventy-three percent of said businesses state that they perform production planning; however, it is of consideration that there are only a few utilising professional management organisations. It is inevitable that said businesses contribute to the sector in case of commencing mass production by overcoming financial deficiencies and adopting a way of increasing their capacities.

Keywords: Furniture industry, production planning, SMES, production.

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1. Introduction

Since the early ages, there have been production and change of goods and services for meeting limitless requirements of human being. These attempts have gone through various stages until reaching to an avant-garde and modern production system (Celikcapa, 2000). Production is one of the basics in development of a country. Production is one of the most important components of economy leading to employment and also contributing significantly to national income (Tanyas & Baskak, 2013). Production is called as generation of goods or services with the aim of meeting human needs. In explanations relating to production management, subjects will be handled which are related to situation in which a physical goods is present (Tekin, 2003). Production in the sense of conversion process is anticipated to be present since the initial days of human presence (Demirdogen & Kucuk, 2013). Physical units and arrangement of these in line with an aim are required for realisation of the production. These physical arrangements should be organised to facilitate conversion into a product. Planning enables determination of product features and production areas with physical arrangements, placement of system facilities to be used and decision on other components enabling compatible operation of these (Yaman, 2011). First step in businesses is planning because everything is planned and designed in accordance with the product amount that can be sold. Generally, producing more products than those can be sold causes damages. Initially, customer mass, i.e., the amount that can be sold, should be determined, and situation in the market should be detected to establish a factory or business. It is highly important to observe and determine the products and features demanded in the market (Yaman, 2011). Planning for a business is a phenomenon comprising dynamism and continuity. A business without plan is like a sheering vessel (Celikcapa, 1999).

Production planning is a function determining production activities in the future and boundaries of its amounts. Production planning is a decision making procedure on the production of products in a desired quality using existing sources of the business reasonably. In other words, production planning is composed of activities relating to desired amount, quality, place, time, people concerned, type and time of the production activities of the business (Tekin, 2003). Furniture sector is a field which is connected with many sectors, providing employment for people with different specialties and which is labour-, knowledge- and technology intensive. The furniture industry thought to be labour intensive with low technology and capital has become a knowledge- and capital-intensive sector by transforming rapidly in globalising world with respect to previous years (Anonymous 1, 2015). Furniture sector has an important place among sectors with activity in Turkey manufacture industry. It is an important sector in terms of rate of exports meeting imports, branded companies, number of workplaces and rate of employment. Furniture sector may also supply materials such as solid wood, wood-based plates, fabric and leather products used in upholstery, all sorts of furniture equipment and accessories, paste, dye and lacquer required from national sources, excluding some special semi-finished products. Moreover, Turkey has made significant progresses in the production of wood-processing machines in recent years. Production of CNC machines can be performed along with the production of all sorts of conventional machines used in plate-cutting, perforation and surface-side processing (Bal, Akkok & Serin, 2015). Turkey furniture sector advances from traditional production to modern production. This situation is seen more frequently in large and medium-sized businesses of the sector. Particularly, these sectors provide significant contributions to national economy along with sectoral development with being oriented towards corporate structure, following advanced technology, standardisation, R&D activities, high production capacities and export possibility (Arslan, Sonmez & Gurleyen, 2009; Anonymous 2, 2013; Anonymous 3, 2013). Thus, a situation assessment of the businesses making production in furniture sector was performed in this study by researching whether these businesses perform in terms of market and demand research, technology, capacity and selection of site of establishment, product design and project design, production process, quality control and in-business organisations.

2. Materials and methods

Turkish furniture sector has a structure having mostly workshop-type small businesses operating with traditional methods. On the contrary, transformation of small-sized businesses into medium- and large-sized businesses has been experienced in the last 30 years in particular (Serin & Andac, 2012). On general assessment of the subjects relating to production managements for a business to carry out furniture production, the production planning should be regular and professional. In line with this scope, initially supply demand relationship in the market should be examined, needs should be detected and production capacity in line with these needs and afterwards region, province and specific location of establishment of the factors should be determined. Building of the factory should be constructed in light of plan-project to meet the demand. Machine selection should be made in accordance with the product to be produced and machine arrangement should be done in accordance with required lines. Supply of material and personnel should be performed for the production of the product compatible with the aim of the factory, and required arrangements should be made. Questionnaires were distributed to 100 businesses extending to Bursa (Inegol, centrum), Izmir (Centrum, Karabaglar) and Mersin provinces to highlight the importance of information to be obtained relating to sectoral status of the businesses making furniture production in Turkey and to keep the information objective, however, only 85 of these distributed questionnaires were collected back. The questionnaires were filled with authorities to be applied one for each business and the obtained data were provided below in the form of tables.

Table 1. Activity situation analyses of businesses

| Scale questions Activity period of the business | Frequency | Percent |
|---|-----------|---------|
| 0–2 years | 3 | 3.5 |
| 3–5 years | 3 | 3.5 |
| 6–8 years | 13 | 15.2 |
| 8–10 years | 8 | 9.4 |
| 11 and more | 57 | 67 |
| Others & Unanswered | 1 | 1.1 |
| Number of Employees in the Business | | |
| 1–9 between | 33 | 38.8 |
| 10–19 between | 27 | 31.7 |
| 20–29 between | 13 | 15.2 |
| 30–39 between | 5 | 5.88 |
| 40–49 between | 2 | 2.35 |
| 50 and more | 5 | 5.88 |
| Ownership status of the business | | |
| Belonging to the company | 24 | 28.2 |
| Rent | 53 | 62.35 |
| Joint venture | 8 | 9.4 |
| Education Status of the Business Owner | | |
| Primary school | 9 | 10.5 |
| Junior high school | 23 | 27 |
| Apprenticeship | 8 | 9.4 |
| High school | 31 | 36.4 |
| Vocation school | 0 | 0 |
| University | 10 | 11.7 |
| Unanswered | 4 | 4.7 |
| Management type of the business | | |
| By owner | 82 | 96.5 |

| | | |
|--|----|-------|
| Professional Manager | 3 | 3.5 |
| Other | 0 | 0 |
| Establishment reason of the business | | |
| Independent work request | 39 | 45.8 |
| The Absence another opportunity | 9 | 10.5 |
| Inheritance or transfer | 3 | 3.5 |
| Make Money Request for | 49 | 57.6 |
| Social Prestige | 6 | 7 |
| Others | 11 | 12.85 |
| Demand research of the business on establishment | | |
| Yes | 29 | 34.1 |
| No | 56 | 65.9 |
| Total | 85 | 100 |

In the questionnaire study conducted, 67% of the businesses are businesses of 11 years and above, 15.2% of 6–8 years, 9.4% of 8–10 years and 3.5% of 3–5 and 0–2 years on examination of the activity periods of the businesses. On examination of the number of employees in the businesses, 38.8% have employee numbers of 1–9, 31.7% of 10–19, 15.2% of 20–29, 5.88% of 30–39 and 50 and above and 2.35% of the businesses employ 40–49 employees. On examination of the ownership status, 62.5% are seen to be renters, 28.2% to be owners and 9.4% to be common owners. On examination of the education status of the business owners, 36.4% are graduates of high school, 27% of secondary school, 11.7% of university, 10.5% of primary school and 9.4% of apprenticeship training. On examination of the management type of the businesses, 96.5% are managed by workplace owner and 3.5% by professional manager. Reasons of establishment of the businesses are stated as earning money by 57.6, independent working by 45.8, absence of any other choice by 10.5%, social status by 7%, legacy or assignment by 3.5% and other reasons by 10.5%. It is seen that 65.9% of the businesses conduct demand research on establishment of the businesses while 34.1 do not conduct the same.

Table 2. Analysis assessment of the businesses for product planning

| Scale Questions Settlement type of the business | Frequency | Percent |
|--|-----------|---------|
| Workshop type settlement | 69 | 81.2 |
| Series production | 16 | 18.8 |
| Methods Used in Utilisation of Designers in Production | | |
| Technical drawing | 28 | 32.9 |
| Manual sketch drawing | 40 | 47.3 |
| With drawing programme | 25 | 29.4 |
| With verbal and practical description | 24 | 28.2 |
| Other | 1 | 1.2 |
| Research and development activities in businesses | | |
| Yes | 46 | 54.2 |
| No | 39 | 45.8 |
| Material stocks required for product | | |
| Yes | 55 | 64.7 |
| No | 30 | 35.3 |
| Methods used by businesses using stock application | | |
| Visual control | 39 | 45.8 |
| Double box method | 0 | 0 |
| A–B–C method | 1 | 1.2 |
| According to time of order | 3 | 3.5 |
| According to a certain order interval | 4 | 4.7 |
| Just-in-time stocking | 8 | 9.41 |

| | | |
|--|----|-------|
| Other | 30 | 35.3 |
| Production planners | | |
| Yes | 62 | 72.9 |
| No | 23 | 27.1 |
| Intervals of production planning | | |
| Weekly | 17 | 20 |
| Monthly | 39 | 45.9 |
| 3 monthly | 5 | 5.9 |
| 6 monthly | 1 | 1.2 |
| 1 year and more | 0 | 0 |
| Rates of average capacity use | | |
| 0–25 | 4 | 4.7 |
| 26–50 | 7 | 8.2 |
| 51–75 | 58 | 68.2 |
| 76–100 | 16 | 18.82 |
| Detection of reasons of business incapable of operating with full capacity | | |
| Inability to supply regular raw material | 14 | 16.5 |
| Finance insufficiency | 25 | 29.4 |
| Difficulty of sales | 22 | 25.9 |
| Insufficiency of workforce | 12 | 14.1 |
| Transportation problem and/or costs | 1 | 1.2 |
| Pricing policy | 3 | 3.5 |
| In-plant arrangement (improper arrangement) | 2 | 2.4 |
| Quality | 0 | 0 |
| Competitors | 4 | 4.7 |
| Support of institutions | 1 | 1.2 |
| Others | 40 | 47 |
| Repair/Maintenance in the businesses | | |
| Thanks to employee responsible for the machine | 25 | 29.4 |
| In repair and maintenance unit | 5 | 5.9 |
| By outsourcing service | 73 | 85.9 |
| Total | 85 | 100 |

81.2% of the businesses have the workshop-type settlement and 18.8% have the mass production settlement. 47.3% of the businesses use manual sketch drawing, 32.9% the technical drawing, 29.4% the drawing programme and 28.2% the verbal or practical description method in design of the businesses.

54.2% of the businesses carry out the research and development activities while 45.8% do not carry out the same. 64.7% of the businesses stocks for the products to be used, while 35.3% do not make the same. 45.8% of the stockers use the visual control, 9.41% the just-in-time stock, 4.7% the certain order interval and 1.2% the A–B–C stock method. 72.9% of the businesses make the production planning regularly, whereas 27.1% do not make the same. Intervals of production planning in the businesses are monthly for 45.9%, every 3 months for 5.9% and every 6 months for 1.2%. The rates of average capacity use in the businesses are 51%–75% for 68.2%, 76%–100% for 18.2% and 26%–50% for 8.2%.

Reason of inability to work full-capacity is the finance insufficiency for 29.4%, the difficulty of sales for 25.9%, the inability to supply regular raw material for 16.5%, the insufficiency of workforce for 14.1%, the competitors for 4.7%, the pricing policy for 3.5%, the in-plant arrangement (improper arrangement) for 2.4%, the absence of support of institutions for 1.2%, the transportation problem and/or costs for 1.2% and other reasons for 4.7%.

85.9% of the repairs in the businesses are performed by outsourcing service, 29.4% by the employee responsible for the machine and 5.9% by the repair and maintenance unit of the business.

Table 3. Professional association activities of the businesses and other demographical analyses

| Scale questions | Frequency | Percent |
|---|-----------|---------|
| Attendance to professional activities | | |
| Yes | 57 | 67 |
| No | 20 | 23.6 |
| Unanswered | 8 | 9.4 |
| Rate of faith into activity of professional associations | | |
| Yes | 56 | 65.9 |
| No | 19 | 22.3 |
| Unanswered | 10 | 11.8 |
| Distribution of authorities responding to questionnaire in accordance with age | | |
| 11–19 | 0 | 0 |
| 20–29 | 18 | 21.3 |
| 30–39 | 42 | 48.2 |
| 40–49 | 19 | 22.3 |
| 50 and more | 6 | 7 |
| Period of activity of the authority responding to questionnaire in furniture sector | | |
| 0–2 | 1 | 1.2 |
| 3–5 | 3 | 3.5 |
| 6–8 | 3 | 3.5 |
| 8–10 | 7 | 8.3 |
| 11 and more | 65 | 76.4 |
| Unanswered | 3 | 3.5 |
| Total | 85 | 100 |

Sixty-seven percent of the businesses attend professional activities while 26.3% are stated not to participate in the professional activities. 65.9% believe that activities of professional institutions are beneficial, while 22.3% do not believe the same.

Distribution of people responding the questionnaire in the businesses are as follows: 48.2% are in 30–39 age interval, 22.3% are in 40–49 age interval, 21.3% are in 20–29 age interval and 7% are 50 and above. The furniture sector experience they have are as follows: 11 years and above for 76.4%, 8–10 years for 8.3%, 6–8 years for 3.5%, 3–5 years for 3.5% and 0–2 years in 1.2%.

3. Results, discussion and suggestions

On interpretation of the data obtained from the questionnaire study applied to 85 businesses with the aim of collecting information about sectorial status of the businesses making furniture production, the activity period with 11 years and above activity period is 67%. It shows that the businesses are experienced.

Sixty-three percent of the businesses state that they continue their activities as renters, 66% state that they did not perform demand research on establishing the business, 96% state that it is managed by the business owner, 81% state that they have workshop-type settlement, 54% state that they make research-developments activities and 65% state that they make stocks.

Seventy-three percent of the businesses state that they make production planning; thus, the importance is given to the production planning. However, 19% work with full capacity, 30% could not work with full capacity due to finance insufficiency, 86% overcome machine repair and maintenance by outsourcing services and 76% of the authorities participated in the questionnaire have an activity period of 11 years and above in the sector, thus being experienced in the sector.

Consequently, as seen above, a number of businesses perform production planning; however, these are not performed properly and its disadvantages are experienced. The furniture businesses should go over finance insufficiencies, adopt mass production, look for ways for enhancing capacity and move forward new investments with the support of professional manager to develop and provide better services.

Conflict of Interests

The authors declare no competing interests.

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