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A CRITICAL OVERVIEW ON THE UNIVERSITY-INDUSTRIAL COOPERATION PROCESS OPENING WITH FURNITURE PRODUCTION ENTERPRISES

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Abstract

Turkey's furniture industry, the export potential, employment count, production of value-added products, the ability to branding is important for the country. With the rapid change in the world of science and technology, the developments have eliminated the boundaries between the countries, and as a result of globalization, and the whole world has become a single and big market for everyone. In order to compete in these market conditions, it is very important to gain branding, technology, quality, qualified personnel, R&D and UR-GE success and the ability to produce scientific knowledge and turn it into a product. Within the scope of the study, the collaborations that furniture enterprises can develop with universities that produce scientific knowledge will be discussed. Problems encountered in the process of establishing University-Industry cooperation in the furniture sector will be identified and examined with a critical perspective. The suggestions for the issues, disruptions and new methods to be considered while establishing new collaborations are addressed by addressing the effects and roles of professional representatives in the sector, experts in the field with working experience, managers and academic staff and administrators in the university industry cooperation process.

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1. Introduction

Turkey is one of the leading sectors; imported products that use the most domestic resources in exports the country as one of the least addicted sectors contributes to the economy. Furniture manufacturing sector export potential, employment creation capability, the presence of value-added products, with many features such as branding and to the development of the industry is an important sector in Turkey. In Turkey, university-industry collaboration (UIC), the process is still in the development stage and Furniture Industry located in development in this process. However, cooperation is not considered to be sufficient yet.

The first comprehensive research on the UIC in Turkey, made in 1989 "university-industry relations," says the doctoral thesis. Ensari (1989), Turkey's objectives and strategies, the problems of the industry, were examined by the side of the UIC benefits and relationship process. It also included examples of university-industry cooperation in countries such as Belgium, France, Federal Germany, Italy, Switzerland, England and the USA. Peker et al. (2014) due to some obstacles in university-industry cooperation processes in the UIC process in Turkey desired progress has not been achieved. The obstacles in this process are generally; it is emphasized that it consists of universities, academicians and industry representatives.

Turkish literature, a comprehensive university-industry collaboration to all of the furniture sector in Turkey (UIC) to review the process and are not present a comprehensive survey of the current situation. With this study, university-industry cooperation initiatives in the furniture sector could only be examined through some city-scale researches. Turkey in the furniture industry, university-industry collaboration are needed in research that revealed the current situation.

2. Materials and Methods

Within the scope of the study, the cooperation that furniture companies can develop with universities that produce scientific knowledge will be evaluated through scientific literature and the information obtained through the cooperation platforms shared by the enterprises on the web page. The following different model UIC systems have been examined and evaluated specifically for the furniture sector.

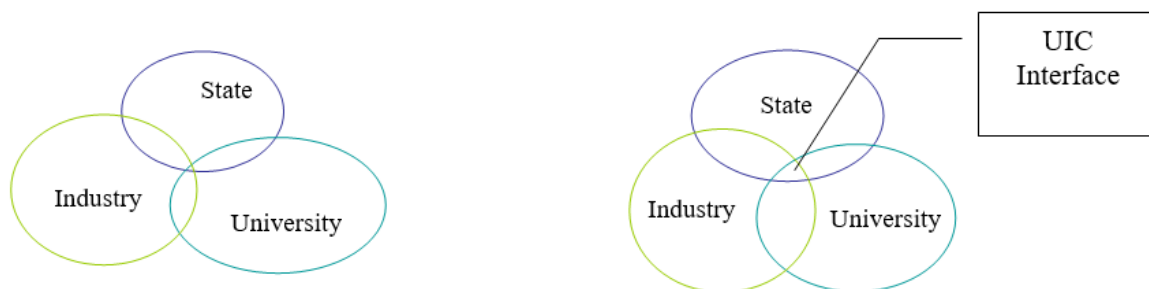


Figure 1: A Triple Helix configuration with negative and positive overlap among the three subsystems (Etzkowitz and Leydesdorff, 1998).

Problems encountered in the process of establishing University-Industry Cooperation (UIC) in the furniture sector will be identified and solutions will be offered by considering the approaches of the parties to the process.

3. Results

3.1. Literature Review of the University and Industry Cooperation in Turkey

Referring to the case of the 1980 university-industry in Turkey relations appeared as the beginning years (Bektas et al., 2009). Today in research on university-industry cooperation process in Turkey mostly contributed to the educational process, students internship and practice facilities, science and technology, business, economics, management science, vocational training, financial management, covered different topics from each other, such as industrial engineering seems to be addressed. Examples of research in these areas are given below.

Peker et al. (2014), as a result of the Analytical Network Process (ANP) application, which was carried out to determine the importance level of the obstacles to University-Industry Cooperation (UIC) for KTU faculty members, said "Not Developing a Collaboration Culture", "Indifference in Industrialists" and "Bureaucratic Barriers" followed this sub-criterion.

Yardimci and Mufuoglu, (2015), as in a study that reflects the industrialists' view and views on the University & Industry cooperation process, the obstacles related with them and the main problems encountered were revealed and it was aimed to look at the subject from a different perspective

Baysal (2007) discussed in the field of industrial engineering with strategies for an effective university-industry cooperation in industrial design education: A case study on graduation projects.

Bilgili (2008) in the field of public administration in his work titled Technoparks in University-Industry Cooperation: Bursa Ulutek Technology Development Zone Example UIC process with Technoparks is discussed.

Erdem (2007) researched the effects of the "university-industry cooperation, which was conducted in the field of science and technology, on the administrative and financial autonomy and academic freedom of universities.

Araman (2009) examined UIC process problems in terms of technological development in Turkey. It has been reported that with the UIC process, it transforms science into a commodity and scientific production into an activity determined by market needs.

Adiguzel (2016), it has been reported that the cooperation model developed in the last 3 years between Istanbul Commerce University and Istanbul Chamber of Commerce (ITO) is a unique UIC model and has created multiple new interfaces.

Yalcintas et al. (2015), both academics and businessmen, do not get enough information and face problems in the research and development process, as well as in the preparation and management of projects. It is really important to shape it in a multidisciplinary way rather than academicians who produce individual solutions and projects in terms of providing business products and services with high added value in university-industry cooperation.

3.2. Literature Review of the Furniture Industry and University Cooperation Process:

Yildiz and Kaygin (2020), the forest products industry in Bartın province and the university's collaborations took the last 5 years and the suggestions in the scientific study 5 years ago and the qualitative analysis were made. It was emphasized that 85% of the suggestions were realized in the process. It has been reported that there is no audit or monitoring mechanism developed by stakeholders to monitor what the impacts of such studies exist or not, and that the initial UIC studies have been partially moved forward.

Askin et al. (2020) was carried out in order to determine the contribution of the students who graduated from COMÜ Biga Vocational School, Furniture and Decoration Program to the business life of the associate degree education they received within the framework of university-industry cooperation. In line with this purpose, it was determined that their school, profession, post-graduation information and their views on university-industry cooperation were positive.

Gul and Yurekli (2020) investigated the benefits of the 3 + 1 system of the Vocational School within the scope of UIC for Furniture Decoration department students and businesses in Denizli.

Web-1 (2020), by collaborating with companies such as Burotime (Denizli), Istikbal (Kayseri), Cilek Furniture (Kayseri) in the furniture sector of Mimar Sinan University to develop furniture design, the students were provided with application and collaboration opportunities in the field of design.

Altay et al. (2018) stated that they do not have much information about UIC between various furniture companies in Aydın and the university, 57.1% of the companies do not have a joint work with the University and 42.9% of the enterprises are partially informed about UIC process.

Cetin et al. (2017), researched Ink. Co. the UIC training practice implemented between Canakkale-Biga Vocational School, Furniture and Decoration Program and an international company Dogtas Kelebek

Furniture. The on-the-job lesson application training method, which is applied in the panel production line, has been presented with the process and the results were presented in the introduction and application. The positive effects and results of the process are shared.

Ciritcioglu et al. (2017) stated that, according to the data obtained from 102 furniture enterprises in Kutahya, most of the enterprises do not have information about the opportunities created by the UIC. The lack of communication and the lack of cooperation culture and the low education levels of the employees are among the most important problems in the lack of cooperation between industry and university.

Isik et al. (2017) reported that, their contributions to the business and the sector were revealed by conducting a research on customer satisfaction of researchers at the university in a furniture business in Istanbul with a sample UIC model.

Yavuz (2017) reported that university-industry cooperation planned for years is far from the desired level.

Altin (2016) developed the furniture business and UIC process in order to improve the furniture design and production skills of university students in Mugla.

Yildiz (2016) stated in master thesis that the cooperation between the forest products sector in Bartın province and the university industry is at the beginning stage. In the research, the perspectives of the industrialists in the forest products sector and academicians in the university, who are the parties of the process, towards this UIC were revealed and 40 different suggestions were presented.

Ulay (2015) presented an industrial internship model that will contribute to the UIC process by presenting the preparation, process and results in the creation and implementation of the application by including the internship application for the UIC process between the furniture business and educational institutions in Kocaeli.

Ulay (2013), with the protocol signed within the scope of the business UIC, which manufactures yacht furniture, an intern training program was created in cooperation with the university and industry, and a solution was found for the qualified personnel needs of the enterprises at the high school level in Kocaeli.

Korkmaz et al. (2013), stated that that bringing universities and institutions in business life together and making plans for joint work and carrying out various training and organizations in this direction play an active role in university-industry cooperation.

Gurpinar and Barca, (2007), Turkey with companies operating in the furniture and woodworking sector has a weak cooperation between universities. As a result, businesses reported that they could not benefit sufficiently from studies such as R&D, product and technology development offered by universities. Thus, they stay behind their competitors in the world.

4. Discussion

In this study, it was determined that UIC studies of furniture businesses with universities were not at the desired level and most of the existing collaborations were related to student internships and they were generally at a basic level in other subjects. It has been understood that the improving of UIC activities by moving them to an institutional and sustainable level is strategic and very important for the future of the furniture industry in Turkey.

It is thought that furniture enterprises, especially those at the SME scale, do not have sufficient information about UIC processes and need to be informed. It has been reported that businesses are unaware of what kind of benefits they can have from UIC. The lack of a culture of cooperation and the low educational level of employees exist in the sector. The fact that R&D and P&D skills and requirements have not spread to the whole sector is a major factor in the development of UIC.

In terms of universities, communication with businessman, technological infrastructure of universities and interest from industry to university, Technocity or TTOs have not settled yet both for university and industry. The desired results cannot be obtained for reasons such as perceiving it as a load.

Public institutions, Ministry of Industry and Technology, KOSGEB, TUBITAK et al. from the perspective of relevant institutions, R&D supports and incentives for the UIC process and industry have recently increased. However, special solutions for SMEs are still insufficient. In the context of UIC, supports summarize the approach of the public. Public administrators lack sufficient knowledge and experience of UIC.

Employers and Managers are of critical importance for the initial internalization of the UIC process and for raising awareness. Officials in decision-making positions should realize that they need cooperation with universities.

In terms of students; it is very important to ensure university-industry cooperation, to have the opportunity to apply their theoretical knowledge and to prepare for business life during their student years. It also provides a good opportunity to improve physical facilities such as workshops, laboratories and machinery in educational institutions. It may be easier for them to find a job after graduation.

5. Conclusion and Suggestion

- It has been determined that the studies for university-industry cooperation (UIC) in the furniture sector are not sufficient, and more research is required.
- The UIC process can be encouraged by legal to all sectors and legislation should bring obligations to encourage cooperation among them (university, factory, laboratory, education, R&D, P&D, Internship etc.).
- Considering that most of the enterprises in the furniture sector (90% and above) are from SMEs, it should be ensured that these enterprises become aware of university-industry cooperation immediately. By creating a general awareness in the UIC process, meetings, cooperation platforms among enterprises, universities and vocational schools should be established.

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Conflict of Interest Statement

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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