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Oct 28th, 8:00 AM - Oct 29th, 6:00 PM

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Naim Ostergllava

University for Business and Technology (UBT) in Kosovo

Mevludin Shabani

University for Business and Technology - UBT

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Recommended Citation

Ostergllava, Naim and Shabani, Mevludin, "The importance of technology, the impact of innovations and design in improving production quality in Kosovo." (2023). *UBT International Conference*. 7.

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ID DIKTP23

International Conference of UBT 2023-Integrated Design, IC-FD

October 28-29, UBT Science and Innovation Park, 2023,

Prishtinë, Kosovo

**The importance of technology, the impact of innovations and design in
improving production quality in Kosovo.**

Naim Ostergllava and Mevludin Shabani

UBT College – Higher Education Institution Prishtina

Abstract

Today the researches of the manufacturing industry are very challenged to find the vital factors in technology. The importance of technology, innovation, design and quality are challenges for manufacturers. The resources of the manufacturing industry are poor and unpredictable in their sustainability due to the fact that Kosovo has a fairly weak factory infrastructure, perhaps the weakest in the region. Human resources are also a serious problem because they are absorbed by the European market and the main reason is the low salaries that further complicate things in Kosovo. According to the survey and research we have done on the manufacturing industries, it turns out that design, innovation and the generation of new ideas are added value for every manufacturing industry. This paper will try to show the importance of these above mentioned factors, and their impact on quality and productivity in the industry as added value and advantage. Therefore, this paper will refer to technological innovations, design and creative technological ideas in the manufacturing industry of the Republic of Kosovo.

Keywords: Design, innovation, Kosovo, quality, technology, production.

Introduction

In the last two decades of this transition in terms of production, technology, design and innovations, there has been significant stagnation or zero input in the part of generating creativity

and a healthy concept of the manufacturing industry or there was simply a lack of a philosophy of thinking in the field of production. This phenomenon is further affecting the infrastructure of factories and mechanical equipment, as well as causing many barriers and other sanctions, so our factories are missing sophisticated machinery.[1] The intensification of human resources was focused on the services part, leaving production aside. The phenomenon of the manufacturing industry, in addition to requiring financial costs, must also have a prepared framework and institutional support. The part of the manufacturing industry is the alternative that is starting to be targeted in these industrial branches: metals, plastics, wood, as well as the integration of the hybrid industry where design and innovation find a place to integrate it into the application . In this century, specifically nowadays, innovators and designers are a force that lead the front, to generate imputes in real life with a dynamic in all areas just to have competitive advantages in the market. Today, designers are engines of industries and enterprises that fight to dominate the world market, aiming for high values in products and services, therefore the intensification of designers and innovators in Kosovo is very necessary in the production industry.

Methodology

Our work is based on the research and design of a special questionnaire that refers to the period from February to July 2023, as well as information tools based on the statistics of reliable sources of information, to bring the most accurate information about the knowledge of application of design, innovation and production.[2] Our study was carried out in the majority of manufacturing enterprises in the economic sector, specifically in the wood, metal, services and plastic industries. The questionnaire was delivered to nearly 30% of enterprises in Kosovo, and the questionnaire sample was also completed by the agencies and statistical sources of the Republic of Kosovo. The sample was drawn from all those mixed manufacturing enterprises where we obtained data for the industries mentioned above. 30% of the enterprises had applied innovation and design, 40% of them had applied innovation and design only in the wood industry, 60% had not managed to apply it at all, while the Statistics Agency of the Republic of Kosovo had no data at all. This sample is representative and gives a confidence score of 95%. The questionnaire is distributed in all these manufacturing businesses and has been completed by

entrepreneurs, managers and foremen, where these interviewers have accurate sources about manufacturing technology, design and innovations.

MAIN SURVEY FINDINGS (questionnaire)

The questionnaire referring to the sample has shown that regarding the application of design and innovation, the evaluation of the questionnaire results that these two elements do not find a lot of application in Kosovo, but rather it only presents us with the classical productions, but we think that the application of design and innovations in production would have influenced directly in the increase of consumer demands for products with added value, that is, the application of design and innovations results in the improvement of industrial productivity.

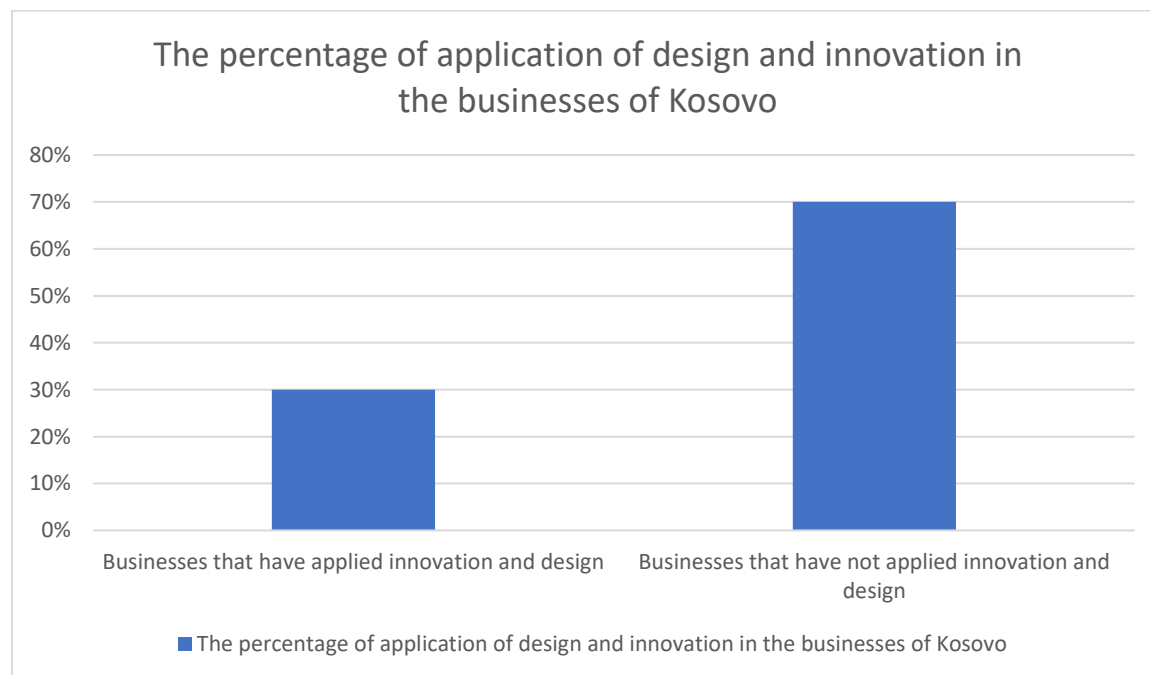


Figure 1. The percentage of application of design and innovation in the businesses of Kosovo.

Regarding design and innovations and production, from the questionnaire we found information that only in the wood industry more design was applied, also in the part of services, while in other industries their application is very poor.

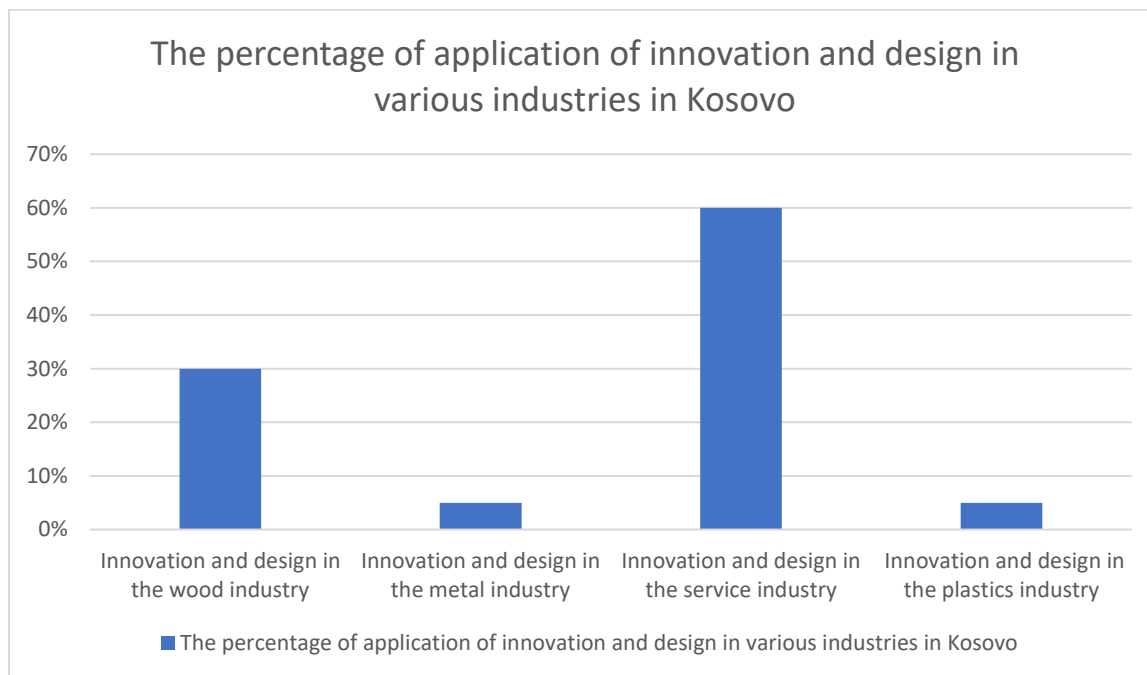


Figure 2. The percentage of application of design and innovation in various industries in Kosovo.

Based on the questionnaire that we distributed regarding the design, technology and innovation, our questionnaire was distributed to a considerable number of enterprises that exercise their activity in the territory of Kosovo, from those 30 businesses our questionnaire sample shows a

small number has applied design and innovation but with a poor dose. The wood industry and the service industry are leading, while other industries have generated the aforementioned components poorly.

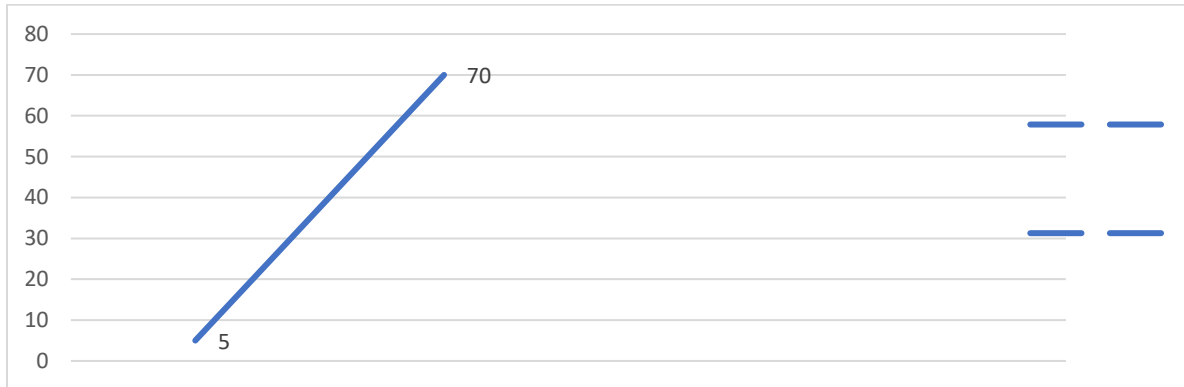


Figure 3. Prediction of the percentage of innovation and design.

From our research we predict that design, innovation and production will have a catapult trend of application.

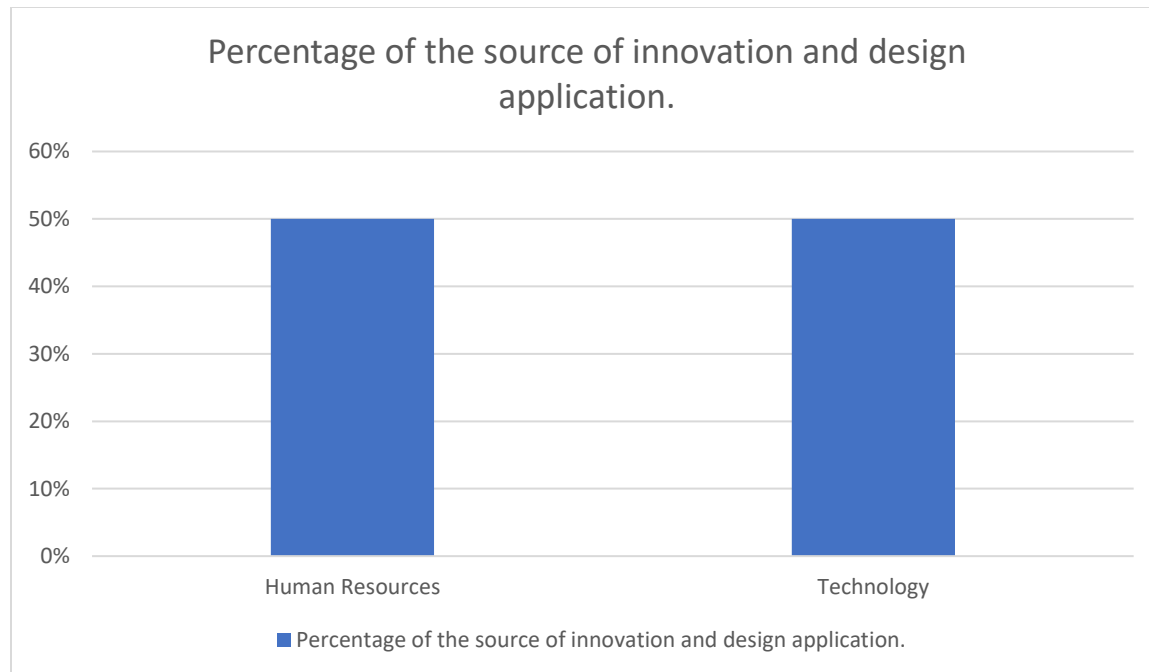


Figure 4. Percentage of the source of innovation and design application.

The source of innovation and design application is human resources and technology. Human and technological resources are fundamental synergies for the generation of innovations and design. The questionnaire shows that 60% of the service sector has evolved as a result of the application of innovations and design, while in the wood industry 30% has been applied, and this means that companies have a better and healthier production comfort. The questionnaire shows us that 60% of the service sector as well as 30% of the wood sector have resulted in a general business productivity in raising their economic capacities as a result of the application of innovation and design. While in the metal sector the application was 5% and in the plastic sector also about 5%, where from these data we can understand that design and innovation are vital for the development of businesses and improving production quality.

Conclusion

Pioneering Design, Innovation, and Technological Synergy for Elevated Progress.

The dynamic interplay of design, innovation, and technology has emerged as a central axis shaping the evolution of production paradigms in Kosovo's industrial landscape. Our comprehensive exploration into this realm has unveiled intricate insights that underscore the transformative potential held by these interwoven elements.

Over the course of the last two decades, the manufacturing sector has traversed an intricate path, marked by a discernible stagnation in embracing creative approaches and holistic conceptual frameworks. This phenomenon, albeit rooted in historical precedence, has reverberated across factory infrastructure, mechanical apparatus, and energy frameworks, culminating in a tapestry of barriers and constraints. The diversion of human resources towards the services sector, while neglecting production, has further underscored the pivotal need to reinvigorate the manufacturing domain.

Within this context, our meticulously designed questionnaire proved to be a beacon, shedding light on the intricacies of design and innovation integration. Delivered to a comprehensive array of Kosovo's enterprises, this instrument meticulously captured data from a diverse spectrum of industries, including wood, metal, services, and plastics.

The findings emanating from our survey are compelling, painting a vivid portrait of the current state of innovation and design adoption. The service sector, along with the wood industry, have emerged as notable adopters of these transformative elements, driving evolutionary shifts within their operational paradigms. This embrace has not only led to enhanced production comfort but has also translated into amplified economic capacities, reinforcing the pivotal role of design and innovation in bolstering overall business productivity.

Human resources and technology have been unveiled as the twin pillars that sustain the infusion of innovation and design. This partnership forms the bedrock for the generation of novel concepts, underlining the indomitable synergy that fuels progress. The projected trajectory, as outlined in Figure 3, augurs a future marked by a substantial uptick in the integration of these elements, ultimately contributing to heightened economic capacities and value-added products.

In summation, this journey through the intricate nexus of design, innovation, and technology underscores their indispensability in catalyzing growth across industries. As the manufacturing sector seeks to revitalize itself, the collaboration of skilled human resources and cutting-edge

technology stands as the lodestar guiding progress. The envisioned trajectory portends a promising era where design, innovation, and technology converge to shape a more resilient and competitive industrial landscape within Kosovo and beyond.

Recommendations

-Based on the conclusions, we have drawn recommendations for the readers, whether they are investors, businessmen, scientists and researchers of the science of management and investments in various fields, so if we refer to the research, we come to a conclusion that innovations in technology in raising production quality, are vital for the business to revive directly in raising production as well as improving quality.

-This study strengthens even more the confidence to invest as soon as possible and with a full capacity in innovations and in the field of production, since the research showed that the general economy in Kosovo is stuck in the same place and there is no progress stressed even though in recent years there was a dynamic in the field of wood industry, services, but not in production, so we must invest in the production sector in all areas, for example metal processing, plastic, wood processing , agriculture, crafts, etc.

But let's not forget the recommendations that the stagnation in this field is quite pronounced, therefore feasibility-fundamental studies are required in certain fields relying on those natural resources that Kosovo possesses.

So the recommendations suggest us not to stop but to increase the dynamics of innovations in the field of production and technology without leaving services and trade aside.

Note: I suggest that if in the near future, if we do not use the natural resources that Kosovo has and process them to increase the value of the products, then very quickly these resources that our country has will become worthless because hybrid technology will replace them very quickly and their value will drop.

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