

INVESTIGATING THE CHALLENGES IMPACTING ON THE DEVELOPMENT OF FURNITURE MANUFACTURING INDUSTRY IN UZBEKISTAN

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ABSTRACT

The furniture manufacturing sector in Uzbekistan has witnessed significant expansion in recent times, thereby bolstering the country's economy and demonstrating its aptitude for innovative design. Nevertheless, this expansion has been accompanied by a multitude of obstacles that jeopardize the sector's sustainability and prosperity in the long run. The primary objective of this study is to undertake an exhaustive examination of the factors and developments that have impacted the Uzbek furniture manufacturing sector. This research endeavors to ascertain the obstacles that are pertinent to the innovation policy initiatives of the furniture sector while also attaining an all-encompassing comprehension of the manufacturing procedure, distribution channels, and market penetration of furniture in Uzbekistan through a qualitative research approach. The challenges that have been identified encompass the acquisition of fundamental materials, adaptation of production methods, labor expenses, inventive design, and competition in the global market. Findings from interviews provide significant contributions to the realms of policy development and strategic decision-making. Additionally, they can be utilized as a case study by policymakers and academics who are intrigued by the progression of manufacturing sectors in developing nations. Limitations and future research directions are espoused.

Keywords: Furniture Manufacturing Industry, Raw Material Sourcing, Design and Innovation, Technology Adoption, Labor Costs, Global Market Competition, Uzbekistan

INTRODUCTION

The furniture manufacturing industry, a foundational sector in numerous nations globally, not only substantially contributes to economic expansion but also functions as an exhibition of a nation's design prowess and excellence. Recent years have witnessed substantial expansion in the furniture manufacturing sector of Uzbekistan, the nation's capital (Statista, 2023). However, this promising growth has been accompanied by several challenges that threaten the sector's long-term viability and prosperity.

Despite exhibiting the necessary potential, the furniture industry in Uzbekistan is confronted with several pressing challenges that could impede its growth and competitiveness. The challenges encompass a broad spectrum of subjects, including the procurement of basic materials, the modification of manufacturing processes, labor costs, innovative design, and international market competitiveness (Colim, 2019). To ensure the long-term success and

viability of the furniture manufacturing sector in Uzbekistan, these concerns must be fully understood and resolved.

The primary purpose of this study is to conduct an exhaustive investigation into the issues and trends that have influenced the furniture manufacturing industry in Uzbekistan. More importantly, this inquiry is to precisely identify the issues that are relevant to the innovation policy initiatives of the sector. To gain a comprehensive understanding of the opportunities and challenges encountered by the furniture industry in the region, this study investigates the manufacturing process, distribution, and market presence of furniture in Uzbekistan, among other aspects.

In light of the above, the objective of this study is to contribute to the ongoing discourse regarding the challenges and opportunities confronting the furniture manufacturing industry in Uzbekistan. Specifically,

(1) To identify and assess the primary challenges and advancements impacting the furniture manufacturing industry in Uzbekistan.

(2) To assess the current trends in consumption, import/export dynamics, cost structures of furniture manufacturing, the availability of raw materials, labor expenses, investments in apparatus and technology, research and development endeavors, and creative and innovative design within the industry.

(3) To propose viable approaches that could assist policymakers and stakeholders in addressing the present challenges confronting the furniture manufacturing industry in Uzbekistan, thereby enhancing its competitiveness in domestic and global markets.

The groundwork for this study was laid by previous inquiries and conjectures regarding the challenges encountered in the furniture manufacturing industry. Notwithstanding the global scope of the industry, each geographical area presents its own set of challenges and conditions (Abu, 2019). This research makes a valuable contribution to the field by analyzing the unique challenges encountered by the furniture manufacturing industry in Uzbekistan. The findings of this study provide valuable insights that can inform strategic decision-making and the development of policies at the local and international levels. Additionally, this research aims to furnish a valuable case study for academics and policymakers with an interest in the evolution of manufacturing sectors in developing countries.

Theoretical Background

Furniture Manufacturing Industry

According to projections, the worldwide furniture market will increase from \$541.52 billion in 2023 to \$780.43 billion by 2030, from its current value of \$516.66 billion in 2022. During the period of prognosis, Asia is anticipated to expand at the highest CAGR, 6.19 per cent (Fortune Business, 2023). The furniture industry possesses distinctive qualities that set it apart from other sectors of manufacturing. Intricate quality control challenges arise in the furniture sector due to a confluence of factors. These include labour-intensive manual production technologies, a wide variety of input materials, the demand for product customization, the globalization of raw material procurement and end-product supply chains, and rigorous sustainability standards (Xu, Xiong, 2024).

Current State of Furniture Manufacturing Industry in Uzbekistan

The furniture manufacturing industry is an essential component of the progression of global economic development despite its expansive and intricate nature. The furniture industry encompasses the stages of production, promotion, and dissemination, and exemplifies the interplay among design, technology, artistry, and market dynamics (Abu et al. 2021). Uzbekistan's furniture manufacturing industry is positioned for a substantial transformation that has the potential to benefit the local economy and popularize Uzbek craftsmanship internationally (Statista, 2023). There are, however, several impediments to this prospective expansion that require investigation and critical thought.

Several substantial challenges persist despite the furniture manufacturing sector's potential for growth and the international acclaim that Uzbek craftsmanship has earned. These complexities require thorough scrutiny and inquiry. To fully harness the economic and cultural significance of the industry, it will be necessary to navigate these challenges strategically (Da Rocha and Gazoli, 2019). To fully harness the capabilities of the furniture industry in Uzbekistan, it is imperative to confront obstacles such as fluctuating consumer demands, supply chain inefficiencies, and market competition.

However, the literature contains inconsistencies and often fails to provide detailed specifications regarding the interconnections and dynamics of the processes under investigation in the furniture manufacturing industry of Uzbekistan. Through conducting a comprehensive and analytical exploration of the challenges and advancements within the field, this research endeavors to rectify these discrepancies.

Previous study on Challenges impacting the Furniture Manufacturing Industry

Furniture manufacturing is a specialized industry characterized by a high demand for human labor, the processing of a vast array of materials, and brief production lines due to the high degree of customization of final products. Furthermore, assessing the aesthetic preferences of consumers presents a unique challenge in the furniture industry (Xu, Xiong, 2024).

Internationally and in Uzbekistan, the furniture manufacturing industry has piqued the interest of policymakers and academics. A multitude of facets of this enterprise have been the focus of previous scholarly investigations. These encompassed everything from consumer conduct and market developments to manufacturing processes and the acquisition of basic materials (Da Rocha and Gazoli, 2019). However, it is imperative to integrate these concepts into a comprehensive framework due to the somewhat fragmented nature of the existing literature.

Technology Adoption:

The strength and expansion of the furniture manufacturing sector are significantly impacted by the technological sophistication of the industrial sector in each nation (Yi, 2021). The impact of technology adoption and innovation on the furniture manufacturing sector has been a primary focus of scholarly investigation. The potential for technological advancements to enhance product design, overall industry competitiveness, and manufacturing efficiency was illustrated by Amin and Kumar (2022). The furniture industry adopted computer-aided manufacturing (CAM) in the 1980s, when the integration of computer-aided design (CAD) and computer numerically controlled (CNC) machining for part production became feasible (Wiedenbeck (2010).

Raw Material Sourcing:

The creation of furniture involves the use of many raw materials such as solid wood, wood-based materials, metal, glass, plastics, leather, fake leather, and upholstery textiles. The variety of materials has a considerable influence on the manufacturing process, which makes the planning of the process difficult (Vrchota, 2020 and Wang, 2017). Supply chain issues continue to disrupt the industry and have repercussions on the availability of basic materials and resources. Lead times and production are impacted by these challenges, which are often attributed to external factors (Fan and Feng, 2019).

Labor Costs:

Furniture production is characterized by a higher degree of labor intensity compared to other manufacturing sectors. This is mostly due to the intricate nature of furniture goods, which makes them less suitable for automation in the production process (Posada, 2015). The function of craftsmanship is also significant, as trained artisans lend their skills to enhance the final product with distinctive features (Azman, Ahmad, 2020). Even with furniture that is made in large quantities, certain phases, such as upholstery, greatly depend on the expertise and competence of highly trained workers. Although certain furniture is created on a large scale, numerous producers choose batch manufacturing in limited quantities. This technique enables the simultaneous creation of a finite number of comparable items, facilitating customization while upholding manufacturing efficiency. In addition, it was projected that the labor force would see a growth rate of just 5% year from 2012 to 2024, as stated by Levanon et al. in 2014. The primary business challenge was the absence of effective procedures among recruiting managers to identify and recruit highly competent people. The identified business issue pertained to the absence of effective techniques among hiring managers in the furniture manufacturing industry to recruit and employ proficient individuals (Simmons, 2018).

Design and Innovation:

There has been considerable attention directed towards the significance of design and innovation in furniture manufacturing. The impact of design on consumer preferences, market positioning, and the aesthetic appeal of products has been the subject of scholarly investigation. The impact of innovation on improved industrial processes, market flexibility, and sustainability has also garnered scholarly interest (Khojasteh-Khosro et al. 2020). One noteworthy characteristic of contemporary furniture is the ability to customize the end goods, including variants in design, size, finish, and usefulness (Marik, 2016). This high degree of customization is rather rare in other sectors (Sharma, 2021). Moreover, the furniture design is characterized by its dynamic nature. Furniture style trends undergo seasonal fluctuations, which are impacted by variables such as dynamic changes in interior design fashion, cultural transformations, developments in science (Brozzi, 2021), and improvements in technology (Vrchota, 2020).

To maintain competitiveness, manufacturers in the furniture industry must possess the ability to adjust quickly and easily to changing circumstances and market conditions (Muller, 2018). Furthermore, it is important to note that not all furniture firms are required to create unique designs, which immediately impacts designers in their field. Replicating the current product designs is a widespread practice. As a result, design specialists have limited chances to

participate in the product development process and use their expertise in sustainability or other design patterns (Ratnasingam and Jegatheswaran, 2020).

Furthermore, research and development (R&D) as well as innovation play a vital role in preserving market positions. This is a result of evolving consumer demands and market forces. Key challenges include evolving preferences, rising demands, and the introduction of cutting-edge products. The current trend revolves around customization, ergonomics, and utility. Environmental concerns are also growing in significance. Design is a key aspect of the innovation policy. The design function has become increasingly important due to the globalization of the furniture business, the emergence of new customer wants, and the challenges faced by Asian.

Global Market Competition:

Local enterprises are compelled to enhance their product quality, innovation, and marketing strategies to remain competitive amidst intensifying domestic and international rivalry. In response to evolving consumer preferences brought about by the advent of online purchasing and a greater emphasis on sustainability, furniture options that are both technologically advanced and environmentally conscious are becoming more prevalent. The sector is examining potential avenues for market expansion, with a particular focus on neighboring countries (Amin and Kumar, 2022). The development of export capacity is critical for the industry's growth. The policies and incentives implemented by the Uzbek government to bolster the furniture industry constitute a significant advancement. By fostering an environment that is favorable to business, these policies aim to enhance regional manufacturing.

METHODOLOGY

The qualitative research approach was the basis for the research technique employed in this study. Qualitative research is the most effective approach for analyzing the complex and diverse challenges and trends impacting the furniture manufacturing industry in Uzbekistan. It allows for a thorough and detailed examination of the variables, offering valuable insights into the dynamics of the industry. Three selected companies were used through a purposive and convenience sampling technique.

Operationalization of Concepts

Due to the qualitative character of this investigation, concepts must be operationalized. The key factors to contemplate encompass the procurement of basic materials, technology implementation, labor expenses, design and innovation, and global market competitiveness. To examine these concepts, an in-depth interview series, document analysis, and observational methods were utilized (Thunberg and Arnell, 2022). The analytical approach of the research assumes that the concepts are causally interconnected in multiple dimensions. For instance, the origin of raw materials may influence the adoption of a particular technology, which in turn may affect labor costs. In a similar vein, design and innovation may influence international market competition (Doringer, 2021). By employing qualitative analysis, this complex web of causal connections was examined.

Data Collection Methods

The primary data source for this research will consist of in-depth interviews carried out with prominent stakeholders in the furniture manufacturing industry in Uzbekistan. Through these interviews, in-depth, context-specific data regarding the challenges and patterns encountered by industry participants were gathered. Supplementary to the information gathered through interviews, document analysis will be conducted on industry reports, government regulations, and pertinent literature.

Comprehensive Interviews

In-depth interviews were conducted with a purposive sample of industry experts, manufacturers, designers, policymakers, and other relevant stakeholders (Bearman, 2019). Qualitative data regarding industry trends, prospects, and challenges were obtained through the implementation of semi-structured interviews. The data obtained from comprehensive interviews and document examination were subjected to qualitative analysis. For qualitative analysis, transcriptions were performed on all interview recordings. Coding was performed on the transcribed data so that it can be classified into themes associated with the research topics (Bearman, 2019). These themes include labor costs, the procurement of basic materials, the adoption of technology, innovation and design, and global market competition.

A case-by-case analysis was subsequently performed to identify connections, patterns, and correlations. Implementing this methodology facilitated the identification of causal connections among concepts, in addition to broader patterns and challenges. Content analysis was employed to collect relevant information from publications, guidelines, and other sources in preparation for thematic analysis. The data was subsequently be incorporated into the overall study.

Document Analysis

To enhance the insights obtained from the interviews, an extensive examination of academic literature, regulatory documents from governmental bodies, and industry reports were conducted (Sileyew, 2019). This was eliminating the challenges faced by the industry and establish a more comprehensive and detailed framework.

Ethical Considerations

Prior to the data collection, ethical considerations are paramount in this study due to its engagement with industry stakeholders and its potential to influence policies and practices in the furniture manufacturing sector in Uzbekistan. It is critical to obtain individuals' informed consent. All interviewees were fully informed of the study's objectives, the conditions of their participation, and their prerogative to withdraw from the research at any given time (Xu, 2020). Additionally, both anonymity and confidentiality are ensured. To safeguard the privacy of participants, any private information they provide were handled with the utmost discretion (Potthoff et al. 2023).

The study ought to be devoid of any conflicts of interest and conducted impartially and objectively. Every participant in the industry must be treated equally. During the reporting phase, the objectives, methodologies, and limitations of the research was completely and transparently

revealed (Norberg, 2023). Furthermore, it was ensured that every piece of information is appropriately referenced and recognized. The research aims to provide recommendations and analysis to assist the furniture manufacturing sector in Uzbekistan in enhancing its competitiveness and growth. Ensuring the integrity of the study entails safeguarding the rights and well-being of all participants and stakeholders who have a substantial stake in these ethical matters.

Data Analysis (Interviews)

The primary objective of the interviews is to analyze the key difficulties affecting the furniture manufacturing business in Uzbekistan. Regarding the organization of the interviews, a case-by-case analysis was conducted to offer a proper view of the data.

All interview questions used in the study can be found in the appendix section.

Case 1- Kasbino

Mr. Abdumannon Karimov has served as the Chief Executive Officer and founder of Kabino firm for over two decades. The initial debut of the product took place in 1994, with its foundation rooted in Italian furniture items. According to Mr. Abdumannon, furniture manufacturing is a significant business that produces necessary items for residential, commercial, and public environments.

“Nevertheless, Kasbino encounters several crucial problems and obstacles in the business that have substantial environmental, social, and economic consequences. These difficulties encompass the exhaustion of natural resources, the release of greenhouse gases, the production of trash, and the utilization of unethical labor methods.”

From the interview, Mr. Abdumannon Karimov, the CEO and founder of Kasbino, outlines several significant problems and obstacles encountered by the furniture manufacturing sector. The industry's impact on the environment and depletion of resources makes sustainability in raw material procurement a major problem. To tackle this issue, Kasbino implements sustainable measures across its supply chain, which involve utilizing certified wood and recycled materials. In addition, they adhere to the concepts of circular economy by creating items that are designed for effortless disassembly and recycling.

Raw Material Sourcing

Mr Abdumannon asserts that sustainability is a pressing issue and a formidable task in the furniture manufacturing industry in Kasbino, which is gaining greater significance in the modern world.

“The furniture manufacturing business is well recognized as a major cause of environmental deterioration and resource depletion due to its reliance on non-renewable materials and energy-intensive production methods. To tackle this difficulty, Kasbino consistently implements sustainable methods across its whole supply chain, encompassing the acquisition of raw materials to the proper handling of end-of-life products.”

Form the above, the company explained that this entails the implementation of sustainable practices, including the use of recycled materials and certified timber, in addition to the waste reduction achieved through streamlined manufacturing processes. Furthermore, Kasbino incorporates principles of the circular economy into its product design by producing

items that are simple to disassemble, recycle, or repurpose; this reduces the company's waste output and consumption of new resources.

Technology Adoption

Mr. Abdumannon stated that the adoption of new technologies is an additional crucial issue and obstacle in the furniture industry of Uzbekistan. The speed at which technology is progressing is influencing the design, manufacturing, and distribution of furniture in Uzbekistan. Failure on the part of Uzbek furniture companies to implement new technologies could result in market share loss and a lag their competitors.

"A significant trend in Kasbino's furniture manufacturing technology adoption is the use of computer-aided design (CAD) software to visualize and design furniture products." Kasbino can generate precise 3D models of furniture products and modify designs with relative ease using CAD software. Kasbino may experience accelerated product development, enhanced design quality, and decreased production costs as a result."

A further difficulty emphasized by the company is the incorporation of technology. To maintain a competitive edge, Kasbino implements computer-aided design (CAD) software, which facilitates expedited product development, enhanced design quality, and decreased production expenses.

Labor Costs

Mr. Abdumannon said that labor shortage is another critical issue and challenge of furniture manufacturing that is currently affecting the industry. Many furniture manufacturing companies in Uzbekistan are struggling to find and retain skilled workers, which can lead to production delays and reduced productivity.

"There are several reasons for the labor shortage in the furniture manufacturing industry in Uzbekistan. One reason is the aging workforce, with many skilled workers retiring and not enough new workers entering the industry. Additionally, there is a lack of interest in manufacturing jobs among younger generations, who may prefer jobs in other industries."

To address this challenge, Kasbino invest in training and development programs to attract and retain skilled workers. This includes offering apprenticeships, internships, and other training programs to provide workers with the skills and knowledge needed to succeed in Kasbino. It partners with technical schools and colleges to recruit and train new workers.

Design and Innovation

Altering consumer preferences regarding innovation and design constitutes an additional critical issue and obstacle for the furniture industry in Uzbekistan. Kasbino adjusts to shifting consumer preferences to maintain its competitive edge and satisfy the needs of its clientele in Uzbekistan. A significant trend in consumer preferences, according to Mr. Abdumannon, is the increasing demand for eco-friendly and sustainable products. There is a growing consumer consciousness regarding the ecological consequences of their buying choices, and they are actively seeking out products manufactured employing sustainable materials and processes.

"Kasbino promotes their eco-friendly products to consumers and invests in sustainable materials and production processes to accommodate this trend."

From this interview, the challenge of evolving consumer preferences towards sustainable and environmentally beneficial products is recognized. By investing in sustainable materials and production processes and promoting their eco-friendly products to consumers, Kasbino acclimates to this trend.

Global Market Competition

The furniture manufacturing business is characterized by intense competition and globalization, as companies strive to attract clients on a global scale. According to Mr. Abdumannon, Uzbekistan imports furniture to satisfy its domestic demand and provide consumers with a greater selection of items. The nation engages in the importation of furniture from a multitude of countries, such as China, Turkey, Russia, and other nations. The importation of furniture is impacted by variables such as cost, craftsmanship, aesthetics, and accessibility.

"Kasbino defines itself by providing distinctive Italian items and exceptional services that cater to the demands of clients. It encompasses allocating resources towards research and development to generate groundbreaking designs in Kasbino, utilizing top-notch materials, and delivering exceptional customer service. In addition, Kasbino implements lean manufacturing techniques to enhance production efficiency and save expenses by optimizing production processes, removing inefficiencies, and minimizing the time it takes to complete tasks. "

From the above, Kasbino distinguishes itself in the international market by offering distinctive Italian products, allocating resources to research and development, and implementing lean manufacturing techniques to enhance production efficiency and minimize expenses.

Again, the furniture manufacturing industry in Tashkent, the capital city of Uzbekistan, is now in the early stages of development and has a very minor presence on the worldwide market. Nevertheless, the Uzbekistan government has been actively endeavoring to bolster the country's furniture sector and enhance its global market share.

During the discussion with the CEO of Kasbino, several issues were highlighted. An important concern is the sustainability of acquiring raw materials. Kasbino implements sustainable methods across their supply chain, using certified wood and recycled materials, and advocating for circular economy ideas. Technology adoption is essential, and Kasbino uses computer-aided design (CAD) tools to expedite product development. Kasbino also tackles the difficulties of labor shortage and evolving customer preferences towards sustainable products.

Case 2 -Isola

Mr. Murodov Nuriddin has been the operations manager of Isola from its initial opening in Uzbekistan. According to Mr. Nuriddin, furniture manufacturing is a long-standing sector that has existed for centuries and plays a significant role in the world economy. Nevertheless, similar to any other sector, it has a variety of crucial concerns and obstacles that must be tackled to maintain competitiveness and sustainability.

"The primary difficulties faced by Isola in Tashkent include the increasing expenses of raw materials, supply chain complications, the persistent energy crisis, and frequent fluctuations in labor costs."

During the discussion, Mr. Murodov Nuriddin, the operations manager of Isola, addressed many concerns including escalating raw material expenses, supply chain complexities, energy shortages, and labor expenditures. Isola's main areas of concentration are the optimization of supply chain management, the use of IoT technology for smart furniture, the attraction of

highly trained personnel through competitive compensation and benefits, and the collaboration with designers to develop cutting-edge goods. Isola's goal is to distinguish itself in the worldwide market by providing distinctive designs and increasing its consumer base.

Raw Material Sourcing

Mr. Nuriddin states that Isola enhances its supply chain management by employing data analytics to optimize their inventory and delivery timetables. The company establishes robust partnerships with its suppliers and employs efficient quality control techniques to guarantee the quality of both its raw materials and completed goods.

“Isola in Uzbekistan may have difficulties in obtaining high-quality raw materials, including wood, metal, cloth, and foam. Insufficient availability of dependable and enduring sources of raw materials might have a detrimental effect on the manufacturing capacity and quality of Isola's products.”

One of the primary obstacles highlighted is the escalating expenses of raw materials, coupled with supply chain complications and the persistent energy crises. Isola tackles these difficulties by enhancing supply chain management through data analytics, fostering robust partnerships with suppliers, and applying efficient quality control methods.

Technology Adoption:

According to Mr. Nuriddin, it is crucial to stay updated with technical breakthroughs to maintain competitiveness in the furniture manufacturing industry in Uzbekistan. Nevertheless, several firms in Uzbekistan encounter obstacles when it comes to embracing new technologies, mostly owing to the financial implications, limited knowledge about these technologies, or reluctance to embrace change.

“Isola utilizes Internet of Things (IoT) technology to develop intelligent furniture products that can establish internet connectivity and be operated remotely. Intelligent furniture items may have functionalities like integrated sensors, automatic lighting, and temperature regulation. It can result in enhanced functionality, heightened consumer engagement, and the generation of new sources of revenue.”

Embracing technology is essential for maintaining competitiveness, but many firms encounter obstacles such as high expenses, limited knowledge, or reluctance to embrace change. Isola utilizes Internet of Things (IoT) technology to develop intelligent furniture items, resulting in enhanced functionality, heightened client interaction, and the generation of novel sources of income.

Labor Costs

Mr. Nuriddin emphasizes that the presence of proficient workforce is essential for the manufacturing industry in Uzbekistan. Nevertheless, the furniture manufacturing business may face difficulties due to a lack of proficient labor.

“Isola entices and maintains proficient employees by providing competitive remuneration, perks, and training initiatives. The company also allocates funds towards acquiring automation technology from China to decrease their reliance on human labor and enhance operational effectiveness.”

To tackle this issue, Isola establishes a constructive work atmosphere that highly regards and incentivizes proficient employees. This encompasses providing attractive remuneration, comprehensive benefits, and prospects for professional development and progression. By cultivating a favorable work environment, organizations may allure and keep proficient employees, therefore establishing a robust and committed staff. Challenges related to labor prices and the accessibility of competent people are also emphasized. Isola recruits and maintains competent personnel through the provision of competitive pay, benefits, training programs, and by investing in automation technology to enhance efficiency.

Design and Innovation:

Mr. Nuriddin asserts that innovation and design are indispensable for success in the Uzbekistan furniture industry. Isola, based in Uzbekistan, often encounters obstacles with design proficiency, entry into design trends, and research and development resources, all of which can harm the company's capacity to produce inventive and alluring merchandise.

"Isola has for a very long time collaborated with architects and designers to produce innovative and one-of-a-kind furniture. Manufacturers can enhance the attractiveness of their products to consumers by integrating innovative concepts, visual appeal, and practicality into the designs they collaborate with.”

Innovation and design are indispensable for achievement in the furniture industry. Isola engages in partnerships with architects and designers to produce one-of-a-kind and groundbreaking furniture, imbuing their products with futuristic concepts and practicality.

Global Market Competition

According to Mr. Nuriddin, Uzbek businesses can distinguish themselves from rivals through the provision of distinctive designs, superior products, and outstanding customer service. Additionally, they can increase their market share by entering new markets and diversifying their product lines. Furniture is exported by Isola to other nations. In pursuit of economic diversification and non-commodity export growth, the nation has been actively engaged in the endeavor to augment its furniture export sector. The primary destination of Isola's furniture exports is neighbouring Central Asian countries.

"In Uzbekistan, Isola implements lean manufacturing principles to increase cost-effectiveness and production efficiency. It involves the reduction of lead times, elimination of waste, and optimization of production processes. Additionally, in an effort to increase sales and broaden their consumer base, Isola investigates international markets.”

A proficient workforce is present in the furniture manufacturing industry in Uzbekistan. The provision of proficient labor empowers manufacturers to fabricate furniture items of superior quality. Additionally, proficient labor can facilitate effective production processes and enhance the capacity to satisfy consumer requirements. Isola differentiates itself on the international market through the provision of superior customer service, distinctive designs, and superior products. Additionally, they leverage lean manufacturing principles to enhance production efficiency and investigate global markets to augment sales and broaden their clientele.

In the furniture manufacturing industry, Kasbino and Isola encounter comparable obstacles, including but not limited to sustainability concerns, technology integration, labor scarcity, evolving consumer inclinations, and competition on the global market. Nevertheless, these entities utilize distinct approaches to tackle these obstacles and establish a unique position for themselves in the market.

Case 3 - Dafna

Since 2015, Mr. Behzod has served as the general manager of Dafna, an organization that has supplied an extensive selection of furniture items since 1994. As per the assertions of Mr. X, the furniture manufacturing sector encounters a multitude of obstacles that demand manufacturers to exhibit adaptability, ingenuity, and receptiveness to evolving market dynamics.

“Frequent obstacles for Dafna include a scarcity of qualified labor, limited availability of raw materials, fluctuating pricing costs, and the need to adapt to new technologies.”

Mr. Behzod, the general manager of Dafna, delineates several obstacles encountered within the furniture manufacturing sector and expounds upon the manner in which Dafna overcomes each of these challenges.

Raw Material Sourcing

Supply chain disruption, according to Mr. Behzod, was a significant obstacle in Dafna because it caused production issues, cost increases, and delays. The COVID-19 pandemic has brought to the forefront the susceptibility of worldwide supply chains, specifically in sectors that are heavily dependent on imports and exports.

“A strategy implemented by Dafna is to cultivate strong relationships with suppliers and increase supply chain visibility through close collaboration. It may encompass consistent collaboration and communication, in addition to the implementation of supply chain management technology for inventory tracking and disruption anticipation. Additional measures to enhance Dafna's inventory management practices in order to guarantee the presence of sufficient supplies. Supply chain disruption mitigation entails the establishment of buffer stocks of critical materials or the implementation of just-in-time inventory practices.”

Sourcing raw materials is a formidable obstacle for Dafna, as supply chain disruptions can result in cost increases and time losses. To address these challenges, Dafna places emphasis on cultivating robust supplier relationships and enhancing transparency throughout the supply chain. They allocate resources towards acquiring supply chain management technology in order to monitor inventory levels and proactively identify potential disruptions. Furthermore, Dafna enhances its inventory management procedures through the adoption of just-in-time inventory practices and the accumulation of buffer supplies for essential materials.

Technology Adoption

As stated by Mr. Behzod, technology adoption is an important problem and challenge in the furniture manufacturing industry, requiring businesses to establish a long-term technology adoption strategy, invest in new technologies, and remain current with the most recent technological developments.

“Presently, augmented reality (AR) and virtual reality (VR) are being increasingly implemented in the furniture manufacturing sector of Uzbekistan. Customers can visualize furniture products in a virtual environment using AR and VR at Dafna, enabling them to envision how the items would appear in their residences before completing a purchase. As a result, Dafna experiences an enhanced consumer experience, sales increase, and return rates decrease.”

The adoption of new technologies is an additional significant obstacle for the furniture manufacturing industry. Dafna acknowledges the significance of remaining informed about the most recent technological developments. Surveillance (VR) and augmented reality (AR) are implemented to improve the consumer experience. Customers can virtually examine furniture products using AR and VR, which increases sales and decreases return rates.

Labor Costs

As per Mr. Behzod, wage rates exert an impact on labor expenses and are subject to variation among distinct regions in Uzbekistan. Profitability may be adversely affected by increased production costs and wage rates in Uzbekistan where labor standards are more stringent.

“Labor expenses for Dafna are influenced by the level of productivity and efficacy observed during the manufacturing process. Worker training, production techniques, and machinery all have an effect on the level of productivity at Dafna. Labor expenses can be decreased by enhancing Dafna's efficacy via automation or process optimization.”

The cost of labor is affected by levels of productivity and wage rates. Dafna encounters labor cost challenges because of regional disparities in wage rates throughout Uzbekistan. Dafna focuses on increasing efficiency via automation and process optimization, which aids in labor cost reduction, to mitigate these expenses.

Design and Innovation

As per the assertions of Mr. Behzod, design and innovation are pivotal factors in the furniture manufacturing industry of Uzbekistan, as they ensure competitiveness and the fulfilment of consumer requirements. In Tashkent, design trends and consumer preferences are perpetually changing. Dafna consistently remains informed about the most recent design aesthetics, materials, and finishes to satisfy consumers' ever-evolving needs.

“Customers frequently seek out one-of-a-kind and customized furniture items today.” To meet this demand, the product must be customizable in terms of dimensions, hues, materials, and embellishments, amongst other things. It is difficult to implement cost-effective customization processes in Dafna that are also efficient. Design and innovation strategies at Dafna are consistently tailored to customer preferences.”

Innovation and design are essential for satisfying consumer needs and maintaining a competitive edge. Dafna remains informed about contemporary design trends, aesthetics, materials, and finishes to satisfy consumers' ever-evolving needs. In addition to providing one-of-a-kind and customized furniture items, they guarantee cost-effectiveness through the implementation of streamlined customization procedures.

Global Market Competition

As per Mr Behzod's assertion, Uzbekistan possesses specific competitive advantages that significantly influence the global market positioning of the furniture manufacturing industry. In comparison to other nations, these benefits consist of access to an abundance of natural resources, such as timber, the availability of qualified labor, and comparatively reduced production costs. These aforementioned factors contribute to the furniture manufacturing sector in Uzbekistan becoming more competitive and conducive to growth focused on exports. In comparison to other nations, the furniture manufacturers in Uzbekistan enjoy a cost advantage attributable to comparatively reduced labor and administrative expenses. This capability empowers them to provide furniture products at competitive prices in both domestic and international markets.

"To flourish amidst intense competition on the global market, Dafna places significant emphasis on strategic partnerships, ongoing improvement, innovation, cost optimization, and market research." "Dafna further gains a competitive edge in the global furniture market through its comprehension of customer requirements, adoption of sustainable practices, and utilization of technology."

Overall, Uzbekistan possesses some competitive advantages that may influence the global market positioning of the furniture manufacturing industry. In comparison to other nations, these benefits consist of access to an abundance of natural resources, such as timber, the availability of qualified labor, and comparatively reduced production costs. These aforementioned factors contribute to the furniture manufacturing sector in Uzbekistan becoming more competitive and conducive to growth focused on exports.

Uzbekistan's domestic furniture manufacturing sector is expanding. Alternative manufacturers to Dafna produce an extensive selection of furniture, such as office furniture and residential furniture, among others. Support for the sector has been provided by the government through initiatives that encourage domestic manufacturing and expand export opportunities.

The global market competition presents Dafna with a challenge. In contrast to Uzbekistan, which possesses competitive advantages such as ample natural resources and reduced production expenses, Dafna attains success in the global market through strategic alliances, market research, innovation, and ongoing enhancement. They possess a comprehension of consumer requirements, adopt a sustainable approach, and exploit technological advancements to attain a competitive advantage.

In its endeavors to tackle obstacles within the furniture manufacturing sector, Dafna emphasizes design and innovation, labor cost optimization, technology adoption, supply chain management, and global market competition. Through the implementation of effective strategies to surmount these challenges, Dafna endeavors to sustain its adaptability, ingenuity, and agility in the face of fluctuating market circumstances.

Discussion - Comparative Analysis of current findings and available literature

Fassoula (2006) postulated several conclusions regarding the enhancement of the furniture manufacturing supply chain: According to Posada (2015), supply chain transformation is a multifaceted undertaking that necessitates a fundamental alteration in the way organizations conduct operations management. Ahmad and Azman (2020) argue that a comprehensive approach is necessary for supply chain transformation, encompassing all facets such as raw material suppliers, distributors, customers, and production maintenance service. Sivathanu

(2018) further asserts that ongoing supply chain transformation enhances efficiency, quality, and c-suite performance. Fassoula emphasizes the significance of supply chain transformation to maintain competitiveness in the global marketplace of today. A novel project management instrument for supply chain transformation is introduced in the cited article (Research and Markets, 2022).

To gauge the significance of the supplier selection procedure, González (2004) conducted a case study within the chair manufacturing sector. It was determined that supplier selection played a crucial role in determining manufacturing performance, with delivery performance and supplier quality emerging as the foremost selection criteria. Additionally, the research findings indicated that heightened customer satisfaction, increased production efficiency, and reduced expenses could result from the implementation of a streamlined supplier selection process (Bianco, Thiébat, 2021). Nádasdi (2008) investigated the effects of value methodology on the competitiveness of the supply chain. According to the findings of the study, value methodology increases customer satisfaction, decreases expenses, and improves production efficiency. Additionally, the study unveiled that the implementation of value methodology might bolster an organization's market competitiveness (Ding, et al., 2021).

For raw material input characteristics to be considered in the production of industrial furniture, they must adhere to predetermined quality parameters, demonstrate minimal variability, and maintain a relatively consistent state across successive quantities. Skorupi'nska et al. (2021) examined the complexities associated with vast-scale furniture production involving materials sourced from a variety of vendors. This situation generally emerges in the event of disruptions in the supply chain. Although these materials belong to the same category, their structural properties frequently differ. As a result, an empirical evaluation of these properties for every batch becomes necessary. To address this matter, the researchers performed material experiments involving five distinct suppliers. A novel approach was utilized in conjunction with a specialized research apparatus, providing two clear benefits: initially, the evaluations were carried out directly on functional furniture components, ensuring dependable and immediate outcomes; and secondly, the tests were conducted in a cost-effective and timely manner, enabling on-site implementation (Oliveira, Gamboa, Fernandes, 2016).

Technological progress may occasionally result in unanticipated modifications to the characteristics of input raw materials. As an illustration, the consequences of imprecision in the specifications of steel springs utilized in upholstered furniture were examined by Wiaderek (2020). To standardize the properties of springs during the transition from manual to mechanized assembly in the production of upholstery frames, the results of the study indicated that spring selection was required. The manual assembly process rendered such standardization superfluous in the past (Jácome, Medina-Tovar, 2022). The significance of sustainable practices and adherence to environmental regulations is progressively growing within the supply chain of the furniture industry. Anderson and Hansen (2004) investigated the effect of environmental certification on the preferences of wood furniture consumers. Consumers are willing to pay a premium for environmentally certified wood furniture, according to the study. Additionally, the study unveiled that raw material certification has the potential to bolster a firm's standing and confer a competitive edge in the marketplace (Demirarslan, 2015).

Research Implication

Theoretical Implications:

This research makes a valuable contribution to the current corpus of knowledge regarding the geographical challenges encountered by the furniture manufacturing sector. Through a comprehensive examination of the distinct obstacles encountered in Uzbekistan, this study enhances the theoretical comprehension of the determinants that impact the expansion and competitiveness of manufacturing industries in developing nations. The study establishes the groundwork for the construction of a theoretical framework that may be utilized to examine and comprehend difficulties in additional manufacturing sectors. The difficulties that have been identified, including material procurement, manufacturing processes, labor costs, design innovation, and international market competitiveness, serve as a foundation for further theoretical advancements and scholarly investigations in the domain. Furthermore, the results of the research can provide valuable insights for the formulation of strategies and policies on a regional and national scale. Insights gleaned from the research can be utilized by policymakers to devise efficacious policies that tackle the obstacles encountered by the furniture manufacturing sector. The study's theoretical implications encompass a contribution to the comprehension of the effects of policy interventions on the development and competitiveness of industries.

Practical Implications:

The research outcomes provide furniture manufacturers, suppliers, and distributors, among other industry participants, with actionable insights. To make well-informed judgments concerning production processes, raw material sourcing, investment in technology and innovation, and market positioning, stakeholders must have a comprehensive comprehension of the industry's unique challenges in Uzbekistan. Practical suggestions for bolstering the competitiveness of the furniture manufacturing sector in both domestic and international markets are presented in the study. Industry executives and managers can utilize the research findings as a guide for their strategic decision-making. In addition, the study emphasizes the significance of international cooperation and the exchange of knowledge in tackling challenges within the industry. It underscores the importance of establishing research partnerships, participating in exchange programs, and collaborating with international organizations and experts. The research has practical implications such as encouraging collaboration among stakeholders at the local and international levels to advance technology adoption, knowledge transmission, and best practices in the furniture manufacturing sector.

CONCLUSION, LIMITATION, AND FUTURE RESEARCH DIRECTION

It is critical to recognize and address the constraints inherent in this research. In the first place, the study was limited to the furniture manufacturing sector in Uzbekistan and thus may not provide a comprehensive representation of the nation or other geographical areas. The applicability of the findings to alternative contexts or industries may be limited. Furthermore, the research was predicated on information gathered via interviews and surveys, which are inherently susceptible to the inherent biases and constraints of self-reporting. Additionally, it should be noted that the study's scope was restricted to the opportunities and challenges specific to the furniture manufacturing sector. Additional determinants that impact the industry, including

technological advancements, economic conditions, and government policies, were not thoroughly investigated. Further investigation is warranted to adopt a more comprehensive viewpoint to attain a more profound comprehension of the intricacies of the industry and possible resolutions.

Further investigations can be contemplated considering the conclusions drawn from this study. Before anything else, additional research is required to determine how government policies and regulations affect the Uzbek furniture manufacturing sector. It is of the utmost importance that policymakers and industry stakeholders comprehend how policy interventions can be utilized to address the identified challenges and promote growth. Furthermore, prospective investigations may center on the significance of technology and innovation in augmenting the industry's competitive edge. An examination of the implementation and assimilation of sophisticated manufacturing technologies, including automation and digitalization, may yield valuable knowledge regarding the possibility of enhanced operational effectiveness and novel product developments.

In summary, this research has conducted an exhaustive examination of the obstacles that are affecting the growth of the furniture manufacturing sector in Uzbekistan. The results underscore the urgent challenges encountered by the sector, encompassing material procurement, modifications to manufacturing processes, labor expenses, innovative design, and competitiveness in the global market. The hazards that these challenges present to the sector's long-term growth and sustainability are indisputable. Notwithstanding these challenges, prospects for enhancement and expansion do exist. Through the implementation of strategic measures and the resolution of the identified challenges, policymakers and stakeholders can augment the competitiveness of the furniture manufacturing sector in both the domestic and international markets. The findings of this research have established the foundation for suggesting feasible strategies to address the obstacles and improve the future of the industry. Since the study sample size is small, and for that matter only based on qualitative data, it will therefore be interesting to welcome other study with mixed method that considers adequate number of sample size.

Appendix

Interview Questions:

- What are the primary obstacles presently confronting the furniture manufacturing industry in Uzbekistan?
- Can I inquire further about each of these challenges?
- What is the rate of technology adoption within the Uzbekistan furniture manufacturing sector?
- In what ways does the implementation of contemporary technology impact terms of product quality and output levels?
- Can I inquire about the labour expenses associated with the furniture manufacturing industry in Uzbekistan?
- Can you elaborate on the challenges associated with the procurement of basic materials for the furniture industry in Uzbekistan?
- Concerning design and innovation, what endeavours is the furniture industry in Uzbekistan undertaking?
- What is the global market position of the furniture manufacturing sector in Uzbekistan?
- To what extent do imports and exports influence the global furniture market?
- In the current environment, how does Uzbekistan contend?

- Considering your erudition and specialised knowledge, what approaches or suggestions would you propose to policymakers and stakeholders to mitigate the present obstacles confronting the furniture manufacturing industry in Uzbekistan and enhance its competitiveness in both domestic and global markets?

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