Reviewing Indonesian Wooden Furniture: Does Indonesia Have Comparative and Competitive Advantages in the United States Market?

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ABSTRACT

The Indonesian wood furniture industry is a significant contributor to the non-oil and gas sector of the economy. Manufacturers are responsible for meeting not only domestic demands but also the needs of the international market. Nevertheless, Indonesia's status as a global exporter remains comparatively inferior to that of China and Vietnam. This study aimed to assess the comparative and competitive advantages of Indonesian wooden furniture globally. Employing a time series analysis spanning 21 years (2001-2022), the research utilized the Revealed Comparative Advantage (RCA) method and Porter's Diamond Model to assess these advantages. The results of the study indicate that RCA analysis consistenly showed values greater than one. However, the study also identified fluctuations in RCA during the period of 2007-2011. Furthermore, the application of Porter's Diamond Model revealed that Indonesia's abundant natural resources, skilled labor force, and supportive industrial ecosystem are key factors contributing to its competitive position. Nevertheless, the analysis highlighted the need for continued investment in capital, particularly in terms of technology and infrastructure, to sustain and echance this competitive advantage.

Keywords: comparative, competitive, porter's diamond model, rca, wooden furniture

BACKGROUND

Wood is a commonly and efficiently used raw material that will be produced and harvested on a large scale for various industrial purposes, including the furniture industry (Ali dkk., 2024; Ramasamy dkk., 2020). The wood processing industry can be divided into two main branches: the forest industry and the wood product industry. The forest industry (upstream wood processing industry) encompasses the sawmill industry, plywood industry, particleboard industry and MDF (medium-density fibreboard) industry. The wood product industry (downstream wood processing industry) comprises the woodworking industry and the wood furniture and wood handicrafts industry. The quality of wood is a significant issue, particularly within the context of the wood industry (Ghani & Lee, 2021; Indhasari & Ramli, 2024; Salima & Johansson, 2016). The wooden furniture industry is labour intensive because it requires large quantities of raw materials supplied by the upstream sector, stable prices and low technical barriers (Wang, 2023). Production in the wooden furniture industry requires raw material inputs with characteristics that conform to predefined quality

parameters and also show minimal variation and remain consistent across different batches (Skorupińska dkk., 2024). The government has implemented the Timber Legality Verification System/Sistem Verifikasi Legalitas Kayu (SVLK) to address illegal logging issues. This policy has successfully increased the export value of Indonesian processed wood by US$48.7 million, with China being the largest importer at 31% (Aziz & Adrisson, 2021). Both processed wood and wooden furniture products have become potential commodities in domestic and international markets (Daulay dkk., 2022; Ulay, 2020). The vast forest areas in Indonesia enable the production of various types of high-quality timber. The types of wood produced with good quality include teak, ebony, mahogany, rosewood, and others (Anggiriani dkk., 2023). However, a common problem in Indonesian forests is illegal logging, which reduces the timber supply. Timber is a highly demanded forest product as it serves as a raw material in both upstream and downstream wood processing industries.

The Indonesian wooden furniture industry has enormous potential if maximized. Hakim et al., (2022), mentioned that in 2022 there were 1,114 furniture companies spread throughout Indonesia with a total production of 2.9 million tons per year. Kementerian Perindustrian Republik Indonesia (2023), stated that the total investment in the furniture industry reached 69%, amounting to IDR2.9 trillion, with major importers including the United States, Japan, the Netherlands, Germany, Belgium, Australia, the United Kingdom, France, South Korea, and Spain. The wooden furniture industry is most prevalent in Central Java Province and has successfully contributed to total exports. According to Prameswari and Ardianto (2023), Jepara City in Central Java has contributed 10% to Indonesia's total exports, equivalent to US$1.5 billion, and contributed 30% to Regional Original Revenue (Pendapatan Asli Daerah/PAD) from small, medium, and large-scale export-oriented wooden furniture industries in 2018.

Indonesia's export share is below 3% and has stagnated or declined compared to China's 36.44%. Vietnam's export share is stable and relatively high (Trade Map, 2022). Despite exporting wood furniture and contributing to economic growth, Indonesia lags behind China and Vietnam. Further studies using the Revealed Comparative Advantage approach and Porter's Diamond Model are needed to determine Indonesian wood furniture's competitiveness and potential as a reference for alternative strategies in the international market. Increasing export orientation must be in line with diversification, increasing product value chains, and maximizing technology utilization.

RESEARCH METHODS

This study utilized secondary data spanning a time series of 21 years, from 2001 to 2022. The research focused on Indonesian wooden furniture products with Harmonized System (HS) codes listed in Tabel 1.

Tabel 1. Hamonized System (HS) Code List of Wooden Furniture Products

No	HS Code	Description
1	940330	wooden furniture for office use
2	940340	wooden furniture for kitchen use
3	940350	wooden furniture for bedroom use
4	940360	other wooden furniture

Source: Central Statistics Agency of the Republic of Indonesia (2024)

The data used in this study includes the export volumes of Indonesia and the world, sourced from the publicly accessible Trade Map website, to analyze the comparative advantage. The data utilized to analyze the competitive advantage of Indonesian furniture products encompassed the land area, total production, total workforce, application of technology and knowledge, capital, and infrastructure. Additionally, data on the demand conditions for the products, descriptions of related and supporting industries, competition among industries, market structure, strategy development, and the role of government and opportunities supporting the competitive advantage of Indonesian furniture products were also utilized. The data used to analyze the competitive advantage was collected from The Central Statistics Agency (BPS), Ministry Press Releases, Annual Reports of the Ministry of Industri and the Directorate General of Sustainable Forest Management, and Press Releases of the Indonesian Furniture Industry Trade Association.

This study aimed to determine the competitiveness level of Indonesian furniture products in the international market, specifically targeting the United States as the largest importer. The first analysis was conducted using the Revealed Comparative Advantage (RCA) method. RCA analyzes the export share of a commodity in a country compared to the global export market share of the same commodity. The research results will indicate the comparative advantage of a country under the ceteris paribus assumption, where other factors affecting export growth remain constant (Alisia, 2023). Balassa (1965), defines RCA with the following systematic equation show ini Figure 1.

$$RCA = \frac{\dfrac{X_{ij}}{X_{it}}}{\dfrac{W_j}{W_t}}$$

Figure 1. Equation of RCA
Source: Balassa (1965)

The analysis results will indicate whether the product has high competitiveness based on the following criteria. According to this criteria, the product demonstrates high international competitiveness if its RCA value is equal to or greater than one (RCA ≥ 1). Conversely, an RCA value of less than one (RCA < 1), indicates a lack of competitiveness in the global market.

The second analysis was measured using Porter's Diamond Model to identify competitive advantages. Porter (1990), explains that the competitive advantage of a country's products is influenced by four factors illustrated in Figure 2.
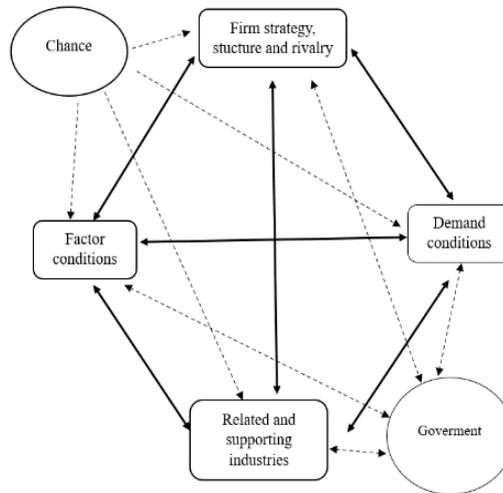
Figure 2. Porter's Diamond Model
Source: Porter (1990)

The four elements are (1) Factor Conditions, consisting of natural, human, knowledge, capital, and infrastructure resources. (2) Demand Conditions, consists of the demand for a good or service. (3) Related and Supporting Industries, consists of industries related to and supporting the main industry. (4) Firm Strategy, Structure, and Rivalry consists of strategies, structures, and competition among firms. These four elements are further supported by two additional determinants: government factors and chance factors.

RESULT AND DISCUSSION

Analysis Result of RCA

The RCA analysis reveals that Indonesia has a comparative advantage in all four products, with high competitiveness indicated by RCA values greater than one (>1). However, the RCA value for HS code 940340 (wooden furniture used in the kitchen) was less than one (<1) during the period from 2007 to 2010. The RCA calculation results are illustrated in Figure 3.
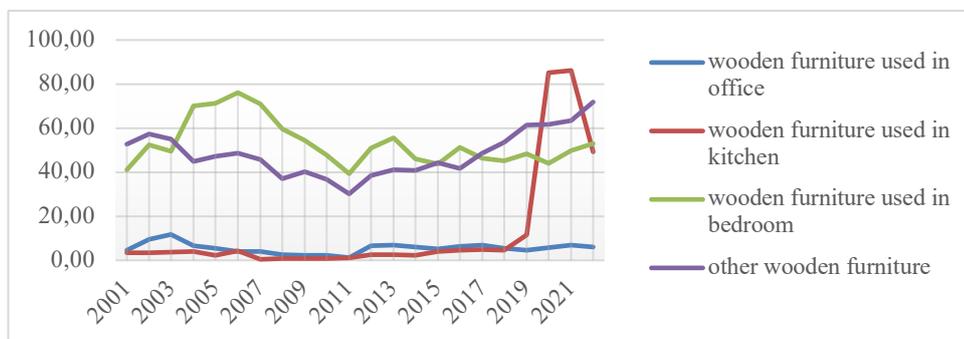
Figure 3. RCA Value of Indonesian Wooden Furniture in United States of America from 2001-2021
Source: Secondary data Processed, Year 2022

The decline in competitiveness values for the four products occurred en masse from 2007 to 2011 due to the economic crisis in the United States caused by the subprime mortgage phenomenon. As documented Guo (2024); Mccomiskey (2023); Yang (2023), the collapse of numerous financial institutions in the United States resulted in a 4.3% decline in the country's gross domestic product (GDP) between the fourth quarter of 2007 and the second quarter of 2009. The financial crisis marked a pivotal moment in global economic history, precipitating a recession that had far-reaching consequences for financial systems, governments, and individuals across the globe. The subprime mortgage crisis was the worst economic crisis since the Great Depression, which originated in the United States and spread rapidly around the world. The subprime mortgage crisis began in 2007 and ended in 2009, but the financial effects began earlier and persisted longer. The crisis caused consumers to lose confidence in banks, and the global economy entered a period of persistent decline. Kontan (2011), reported that the further decline in furniture product exports was also due to the strengthening of the dollar, which negatively impacted export values.

The competitiveness of Indonesian wooden furniture is unstable, with a downward trend. However, it is most competitive in the US market, with an RCA index of more than 4 (Nurkomariyah dkk., 2019). Since 2007, (other wooden furniture products) 940360 have been excellent, with an average world market share of 79%. 940350 (wooden furniture used in bedrooms) became the second mainstay, with an average of 16% of total exports (USAID, 2007). Both products are highly competitive, as shown by the RCA analysis, with an average of 53.03 and 48.27 from 2001 to 2022. The other two wooden furniture products, classified under HS codes 940330 (wooden furniture used in offices) and 940340 (wooden furniture used in kitchens), have lower average RCA values compared to other furniture products, with values of 5.46 and 12.86, respectively. There was a significant increase in the RCA value for the HS 940340 (wooden furniture used in kitchens) product from 2019 to 2021. According to Wisanka Indonesia (2020), this increase was due to the COVID-19 pandemic, which forced all American consumers to conduct their activities at home, leading to the repurposing of rooms. Quoting Buyung (2022), the pandemic increased the demand for office furniture products as people had to work from home, prompting them to create home offices.

**Analysis Result of Porter's Diamond Model**

Porter's Diamond Model is a framework that Porter found to be a commonly used method for finding competitive advantage in the agribusiness sector. This method will form a framework that shows the interconnection between all resources that support a country's competitive advantage. This method is employed in the context of formulating development strategies and fostering inter-industry collaboration (Aydin, 2017; Huo dkk., 2020; Worku dkk., 2024; Zwane & Ferrer, 2024). The availability of factor conditions with good quality and quantity and their optimal utilization indicates that the country has competitive value or competitive advantage. These factor conditions consist of the following elements.

a. **Factor Conditions**
   Natural Resources

   Indonesia's vast forest area produces a wide variety of high-quality timber *Badan Pusat Statistik* (2022), recorded that the total forest area in 2022 was 120,601,155.73 hectares,

categorized into protected forests, limited production forests, permanent production forests, and production forests. Wirdani et al. (2023), stated that the production natural forests play an important role as they provide raw materials in the form of logs for Indonesia's wood industry. Budiaman & Audia (2022), added that other forests, known as industrial plantation forests (IPF), are also established to supply raw materials for the industry. Indonesia's log production from 2016 to 2023 is shown in Figure 4.
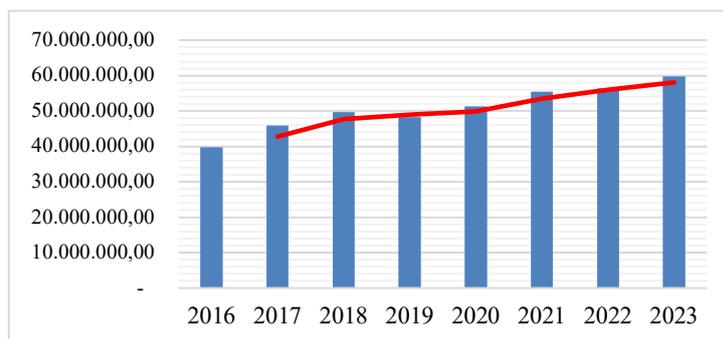
Source: Indonesia's Directorate General of Sustainable Forest Management (2023)

The trend of increasing log production in Indonesia has been observed annually since the 2016-2017 period, attributed to a decline in deforestation rates. Accroding to *Kementerian Lingkungan Hidup dan Kehutanan Pejabat Pengelola Informasi dan Dokumentasi* (2018), deforestation rates were relatively high in 2016, with land cover analysis showing 479,000 hectares of national deforestation in the 2016-2017 period. The increase, though fluctuating was influenced by the government's role in enhancing forest productivity quality. *Kementerian Lingkungan Hidup dan Kehutanan Pejabat Pengelola Informasi dan Dokumentasi* (2023), stated that forest product yields have increased due to the implementation of intensive silviculture techniques (Silvikultur Intensif/SILIN) and synchronized tree planting across Indonesia. Agroindonesia (2023), noted that the increase also resulted from government cooperation with inclusive business permit holders through partnerships, leading to higher timber production in various forests in Indonesia.

Keluarga Mahasiswa Manajemen Hutan (KMMH.FKT UGM) (2021), highlighted that forest management permits are outlined in Indonesian Government Regulation No. 6 of 2007, Article 1 No. 10, concerning Forest Planning and Forest Management Plan Compilation, for individuals, cooperatives, state-owned enterprises (BUMN), and private enterprises (BUMS). The permits include Utilization Area Business Permits (*Izin Usaha Pemanfaatan Kawasan/IUPK*), Environmental Services Utilization Business Permits (IUPJL), Timber Forest Products Utilization Business Permits (*Izin Usaha Pemanfaatan Hasil Hutan Bukan Kayu/IUPHHK*), and Non-Timber Forest Products Utilization Business Permits (*Izin Usaha Pemanfaatan Hasil Hutan Bukan* Kayu/IUPHHBK). According to Law No. 41 of 1999, forest production utilization permits are granted to individuals, cooperatives, BUMN, and BUMS. Menteri Lingkungan Hidup & Kehutanan RI (2019), stated that the implementation of the

SILIN system and Reduced Impact Logging (RIL) are government and private sector efforts. IUPHHK-HA permit holders must properly implement SILIN to avoid revocation of their permits, with high performance being rewarded.

Human Resources

Labor is a crucial input in the entire production process, significantly impacting the quality of the products produced. The wooden furniture industry involves a complex production process requiring a large workforce. Additionally, the Indonesian wooden furniture industry is a significant non-oil and gas sector contributing to Indonesia's economy. The Indonesian Furniture and Handicraft Industry Association/*Himpunan Industri Mebel dan Kerajinan Indonesia* (HIMKI) (2023b), highlights that labor is a pillar of economic growth, necessitating workers with specific competencies, skills, and certifications. According to Sari and Setiawan (2024), the furniture industry has successfully employed 805,000 people directly. However, Fatahillah (2023) found that currently the industry is dominated by the older generation of craftsmen and there is a crisis in the regeneration of craftsmen. Sofiana (2011)found that craftsmen still use designs that have been passed down from generation to generation, not based on their own innovation. As Ajy dan Purnama (2023) have noted, the utilization of designs that are not distinctive and tend to be similar is a prevalent issue in the wood furniture industry. As posited by Sushardi and Woesono (2022) and Susanti and Winiarti (2013), a further issue pertains to the dearth of knowledge concerning the quality of raw materials. Manufacturers prioritize consumer demand, yet neglect to prioritize wood quality and wood specifications.

The Indonesian government strives to enhance the quality and quantity of the workforce in the wooden furniture industry to boost the competitiveness of Indonesian furniture products, *Kementerian Perindustrian* (Kemenperin) (2023a), mentions that the government established the Polytechnic of Furniture and Wood Processing (Polifurneka) in Kendal, Central Java, as an investment in labor that the available majors include furniture production engineering, furniture design, and furniture industry business management. *Kementerian Perindustrian* (Kemenperin) (2024), organizes three-in-one (3-in-1) training programs that link educational institutions and companies to produce certified workers.

Knowledge and Technology Resources

The demand for furniture products will increase due to changing consumer perspectives on furniture. The rising demand for modern furniture products compels producers to continuously innovate to maintain their market presence. Sabili and Gunawan (2020), state that a current issue is the lack of creative design development. Novyanto dan Nurraharjo (2022), found that producers in Jepara still rely on popular designs, resulting in low competitiveness. Furthermore, Sabili dan Gunawan (2020), mention that the adoption of computer numerical control (CNC) systems for carving processes is not widespread. Margaretha et al. (2022), observe that promotional activities still use manual methods. This is strengthened by Maharani and Novianty (2022) and Damayanti et al.(2022), who reveal that accounting records and managerial systems related to raw material and finished goods inventories are still done manually on paper, often leading to inconsistencies. However Saleh

(2023), finds that some companies have successfully leveraged technology to ensure effective and efficient business operations.

China, as one of the key competitors in the wooden furniture industry, has undergone significant reforms in its manufacturing sector, adopting advanced technology directly proposed by the government since 2002. As a result, China has gradually integrated intelligent furniture technology systems into its production activities. The advent of Industry 4.0 in 2013 represented a pivotal moment for China's research endeavors in pivotal technologies to facilitate digital quality control and intelligent furniture production (Xiong et al., 2023). China's emphasis on self- sufficiency in wooden furniture production equipment is evident in the relatively low import value of production equipment and a comparatively high export value of such equipment (Luo et al., 2024). In contrast to Indonesia's experience, China has implemented technological reforms since 2002 and has been able to successfully produce and market its technology. This highlights the necessity for Indonesia to enhance its knowledge resources in order to overcome the technological challenges currently facing this industry.

The government is working to improve human resource quality to address various issues related to maximizing technology utilization and enhancing company managerial systems. Efforts are also being made to optimize wooden furniture industries for export through the *Aku Siap Ekspor* (ASE) program. This program equips companies with workshops, webinars, mentoring, discussions, and exhibitions. Producers can also access annual data related to the wooden furniture industry through the Ministry of Industry, Ministry of Trade, and furniture trade associations such as HIMKI and ASMINDO. Additionally, the government can access data on the official Indonesia Trade Promotion (ITPC) website, although not all furniture products are yet listed on the Ministry or Association websites.

Capital Resources

The capital requirements for the wooden furniture industry are substantial due to the high input costs in this sector. The primary capital expenditures are on raw materials and the purchase of production tools and machinery. Sudrajat and Siregar (2021), estimate the raw material needs to be five to six cubic meters, costing approximately 11 to 16 million rupiahs. Hence, the initial investment needed to start a company is estimated to be between 28 and 33 million rupiahs. Kabila et al. (2023), state that the initial capital required to open a furniture production company is 80 million rupiahs. *Kementerian Perdagangan* (2017), introduced policies to support capital needs in this sector through the provision of Micro Business Credit (Kredit Usaha Rakyat/KUR), as outlined in Minister of Finance Regulation No. 105/PMK.05/2015. *Kementerian Koordinator Bidang Perekonomian* (2016), notes that this assistance focuses on improving financing access for Micro, Small, and Medium Enterprises (MSMEs) through financial institutions. Loans are extended to individual MSMEs, business entities, and/or productive and feasible business groups. *Kementerian Luar Negeri* (2019), held the "Business Forum: Indonesian Furniture Industry Investment" event to attract foreign investors. Narulita and Koswara (2020), indicate that accessing KUR assistance is hindered by complicated administrative systems and banks' selective assistance due to trust issues.

Infrastructure Resources

The presence of infrastructure is essential for sustaining Indonesia's economic activities as it facilitates smoother logistics operations. The wooden furniture industry is heavily reliant on infrastructure to support the efficient transportation of both raw materials and finished goods to consumers. Simbolon et al.(2021), consider infrastructure as an asset provided by the government to serve the public, therefore Indiarto (2015), notes that the presence of infrastructure influences producers in selecting locations for setting up companies, with a preference for areas with accessible roadways. *Kementerian Perdagangan* (2017), indicates that inadequate roads and electricity negatively impact the logistics of raw materials and finished goods. Sabili dan Gunawan (2020), mention that raw materials are transported from suppliers using trucks due to the long distances, which can result in a decline in quality during transit. Companies involved in exports also depend on shipping providers for transporting goods; any delays can reduce the quality of the products.

b. **Demand Conditions**

The demand for Indonesian furniture products comes from both international and domestic markets, with the domestic market showing potential for further development. Harto (2014), states that the domestic market still holds significant potential, as the types of demand are not highly specific. A wide range of products, from low to high prices, are still in demand. Zainuddin et al., (2024), note that export demand for these products is very high, with 2019 figures reaching 5.19%, or US$1.78 billion. *Kementerian Perindustrian* (2021), recorded that in 2020, the export value of furniture under HS codes 9401-9403 reached US$1.91 billion, marking a 7.6% increase from 2019, with the United States being the largest export destination. Luppold & Bumgardner (2022), noted that the United States imports wooden furniture to meet domestic demand. Since 1997, the proportion of exports has increased from less than 25% to three-quarters of the total demand in 2019.

The results of the RCA analysis show a fluctuating trend during the period 2001-2022; however, all products exhibit a value greater than one, indicating Indonesia's comparative advantage. The most significant increase was observed in the category of wooden kitchen furniture, which exhibited an increase of 11.67 from 2019 to 2021, reaching a total of 86.17. This phenomenon can be attributed to the impact of the COVID-19 pandemic, which prompted consumers to prioritize optimizing their living spaces for enhanced functionality. Apriyani (2015), posited that Indonesian products align with the preferences of US consumers, who tend to favor natural, classic, and solid color accents. Budiastomo and Sylvia (2020) further posit that American consumers exhibit a predilection for furniture crafted from mahogany wood. Jiang and Muhammad (2023) study revealed a substantial increase, approximately 200%, amounting to US$17.0 billion in 2021 compared to US$6.1 billion in 2000. The most imported types of wooden furniture are furniture for other purposes, with a value of US$8.6 billion; bedrooms, with a value of US$5.0 billion; and kitchens, with a value of US$2.5 billion.
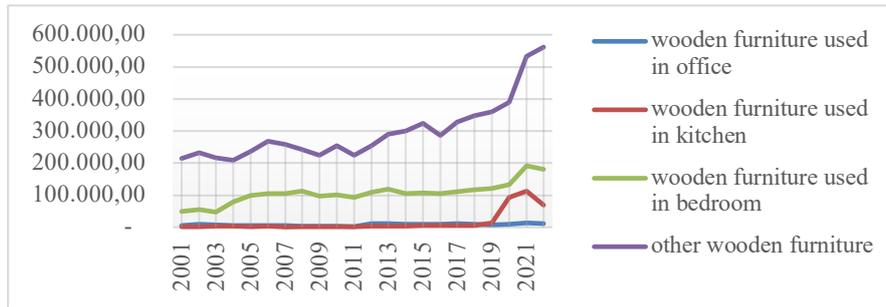
Figure 5. Indonesian Export Value to the United States in 2022 (US$)
Source: Trade Map (2022)

c. Related and Supporting Industries

The related and supporting industries for the furniture sector include upstream wood processing, metal industries, and logistics industries. The connection with the upstream wood processing industry is crucial as it helps meet the raw material supply needs. Sukabumi (2024), states that furniture associations and upstream wood processing associations collaborate to maintain and support the smooth supply of raw materials, with the downstream industry receiving raw materials from the upstream industry. Atahau et al. (2019), emphasize that the wooden furniture industry cannot be separated from the metal industry, which supports the production process. As observed by Kim et al. (2020), the term "logistics integration" is frequently employed to describe a range of inter-functional activities undertaken by various departments. Since the 1970s, logistics has often been regarded as a cost center with limited differentiation capacity. In a similar vein, Tukamuhabwa et al. (2023), noted that companies in the wooden furniture industry must develop efficient logistics management through the selection of an appropriate supply chain model and the establishment of collaborative relationships with supply chain partners to gain a competitive advantage. Sari (2020), found that companies use trucks for transporting furniture. Logistics (2020), mentions that for international shipping, sea routes are used with services such as Full Container Load (FCL) or Less Container Load (LCL), depending on the volume of goods.

d. Competition, Structure, and Strategy

In the wooden furniture industry sector, Asian competitive exporters are primarily China, Vietnam, and Malaysia, which dominate the American market with substantial export volumes. China and Vietnam remain the largest furniture exporters, surpassing Indonesia. As highlighted by Lin (2022); Wan et al.(2022), the wood furniture industry plays a vital role in China's national economy, with a market share value exceeding 60% and integration into the global value network. Over the past decade, wood furniture trade has constituted the largest proportion of the total export value of forest products, with a fixed proportion ranging between 45% and 55%. Accroding to Polyanskaya et al.(2020), revealed that wooden furniture had become a significant product in the wood industry, due to the rapid growth of foreign market demand. Consequently, Vietnam concentrated its production efforts on wooden furniture. Cao and Nha (2020), found that Vietnam's exports of wooden furniture reached nearly US$ 9 billion, representing a 15.7% increase compared to 2017. This placed Vietnam's wood furniture exports in second place in Asia and fifth in the world in terms of export turnover,

accounting for 6% of the global wood market share. ITPC Los Angeles (2020), notes that Indonesian furniture products rank eighth, following Vietnam and Malaysia. *Kementerian Perdagangan* (2017), states that this industry has a monopolistic market structure based on the number of buyers and sellers, differentiated product types, market entry and exit freedom, cost structure, vertical integration, and conglomeration.

To maintain the presence of Indonesian furniture products, it is essential to encourage producers to differentiate their products according to consumer preferences. Furthermore, marketing efforts for furniture products must be enhanced to maximize the potential of all existing wooden furniture industries in Indonesia.

e. Government Role

The government has introduced various policies to maximize Indonesia's potential and promote the presence of Indonesian furniture products in the American and global markets. It has implemented timber legality certification through the SVLK to ensure raw material supply. Maryudi et al. (2021), mention that the issuance of SVLK is part of a collaboration with the European Union to combat illegal logging. Furthermore, *Kementerian Perdagangan* (2017), states that the government also provides capital assistance as outlined in Minister of Finance Regulation No. 105/PMK.05/2015 on the procedures for implementing micro business credit (KUR) as stated in Article 1, number 1. *Kementerian Perindustrian* (2023b), supports investment in human resources for the wooden furniture industry by establishing the Polytechnic of Furniture and Wood Processing (Polifurneka) as a vocational education unit under the Ministry of Industry to provide certified workers. The curriculum is based on the Indonesian National Work Competency Standards (SKKNI), requiring graduates to obtain certification. *Kementerian Perindustrian* (2023c), collaborates through the Makers and Designers Connection (MadeCon) program, linking furniture designers and industry players. HIMKI (2023a), reports that the Directorate General of Agro-Industry will allocate IDR7.5 billion for the industrial machinery and equipment restructuring program to support the use of appropriate technology.

These policies are expected to develop the potential of Indonesian furniture companies, thereby increasing the competitiveness of their products in the global markets. The Directorate General of IKM Industries/*Direktorat Jendral Industri IKM* (2023), states that the government proactively supports the sales growth of export-oriented wooden furniture industries through the *Aku Siap Ekspor* (ASE) mentoring program, collaborating with government and trade association partners to help industries prepare for export and find global customers. The ASE program was held again on February 23, covering a broader range of products and export markets. This second program focuses more on export- oriented industries, aiming to engage micro, small, and medium enterprises to create a more significant impact.

f. Role of Opportunities

The evolution of the times influences changes in societal thinking. Advances in technology and science also elevate living standards, thereby altering perspectives on various matters. Opportunities for wooden furniture products can be observed through these shifts in societal views. Consumers now value wooden furniture not only for its functional utility but also for its aesthetic appeal. Triyanti and Karju (2023), state that furniture is considered a craft

art product, possessing unique characteristics and encompassing various values: aesthetic, symbolic, philosophical, and functional. Harto (2014), asserts that the evolution of the times affects demand conditions, as contemporary society evaluates furniture products for their functionality and aesthetic qualities. For the middle and upper classes, furniture products represent a status symbol. These markets demand high-quality, attractively designed, limited-edition products, and even seek unique and antique designs. Reaching this market requires exclusive designs and high-quality raw materials to enhance product value. According to Saptaria (2022) and Oktarini et al.(2022), design selection drives producers to create high-quality, high-value products that align with contemporary trends and optimize raw materials and other production costs. Product design is crucial for producers as it impacts the market appeal and value of the products.

The wood furniture industry may benefit from a green design approach that incorporates the recycling of both old and used wood furniture products. This could enhance the value of the product, potentially leading to increased profitability. Building on this, Zhang et al. (2023), argue that product design is the main key to enabling society to support the recycling process of wood furniture. Yang & Zhu (2021), contend that recycling entails the breakdown or dissolution of the material into wood chips and subsequent reproduction. This process necessitates consideration of diverse consumer expectations pertaining to attributes such as color, shape, and value-added design. This entails offering personalization, customization, and the retention of product memories through innovation and the feasibility of combination and reconstruction, thereby potentially resurrecting discarded wooden furniture.

These factors demonstrate that Indonesian furniture still has significant potential to dominate the United States market and expand its export markets. This opportunity is further supported by abundant natural resources, the quality and quantity of human resources, advancements in science and technology, and increasing demand for these products. The government has implemented various policies and programs to maximize the potential of the Indonesian wooden furniture industry.

CONCLUSION AND SUGGESTION

The RCA analysis results indicate that products with HS 940340 (wooden furniture used in kitchens) had an RCA value of less than one (<1) at times. However, the other three wooden furniture products consistently had a comparative advantage with RCA values greater than one (>1) from 2001-2022. The product with the highest average RCA value is HS 940360 (other wooden furniture), while the product with the lowest average RCA value is HS 940330 (wooden furniture used in offices).

Using Porter's Diamond Model, the analysis shows that Indonesian wood furniture products have a competitive advantage supported by natural resource advantages, human resources certified by the government, and capital assistance. Export activities have been successfully carried out in the world market with an increasing number of requests. The furniture industry's success in entering the international market is supported by related and supporting industries as raw material providers. The government has supported the competitive advantage of this industry through various policies that help producers, ranging from capital to market expansion through international exhibition activities.

The Indonesian furniture industry still has a great opportunity to increase its competitive advantage by starting environmentally friendly designs, such as recycling old furniture into new ones. Indonesian furniture has the potential to dominate the United States market and expand its export markets. This opportunity is supported by abundant natural resources, skilled workers, technological advances, and rising demand. The government is promoting this industry

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