

The Role of Interior Product Designers in Improving the Welfare of Craft and Furniture Artisans After Pandemic

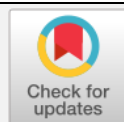
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ABSTRACT

The creative industry is expected to drive economic growth in Indonesia after the COVID-19 pandemic. Abundant local materials and skilled human resources are two major strengths that need to be optimally managed to increase the selling value of design products. The pandemic has significantly impacted the welfare of furniture and handicraft artisans in Java. This paper aims to demonstrate the process and role of interior product designers (IPDs) in improving the socio-economic welfare of artisans after the pandemic. IPDs collaborated with Small and Medium Enterprises (SMEs), artisans, private entrepreneurs, governments, exporters, and associations to deal with vulnerabilities after the pandemic to achieve the development of policies and strategies toward sustainable community welfare. This IPDs role mainly focused on utilizing water hyacinth and rattan as the material for interior products to be accepted in local and global markets. The IPDs faced challenges in collaboration and unification of aspirations and interests between each party. The research used Kelley's design thinking method, implementing the empathize, define, ideate, prototype, and test stages. The latest information on commodities produced by SME artisans, the existing advantages and disadvantages, and in-depth studies of developing market issues in Indonesia, Asia, and Europe were explored. The resulting design was then adjusted to the availability of raw materials, the production capabilities of the artisan, as well as the support of tools and technology used. The production process involved the government and industrial assistance in supporting the needs of machinery and production technology. Market tests at home country and abroad were conducted to determine the market response to the product. With a good market response, it is hoped that there

will be policy development from the government and industry associations to support joint work to achieve a strategy for the socio-economic welfare of the community, especially groups of artisans.

Keywords: *Craft and Furniture Artisans; Interior Product Designers; Post-Pandemic Economic Growth; SME Collaboration; Sustainable Community Welfare; Water Hyacinth and Rattan Products*

1. Introduction

The COVID-19 pandemic has lasted over two years and sluggished many business sectors. It has significantly impacted various areas of human life, especially those closely related to exchanging goods and services. Many crafts and furniture artisans were affected and eventually left their profession and expertise. The decline in people's purchasing power and the breakdown of business sustainability have made many sectors of the community's economy experience a setback. Various restrictions imposed during the pandemic have significantly reduced the income of the creative industry sector (Marlina & Syahrubulan, 2020). However, Indonesia's creative industry's strength depends significantly on this sector. Data from the Coordinating Ministry for Economic Affairs of the Republic of Indonesia stated that amid the economic downturn due to the pandemic, there was still an increase in two export commodities based in the Small and Medium Industries (SMEs) sector: exports of wood and furniture. Export growth of wood goods reached 18.31%, and furniture grew to 30.12% from January to July 2021. These two commodities were included in the 20 main contributors to Indonesia's exports throughout 2021 (Ministry of Tourism & Creative Economy of the Republic of Indonesia, 2021a). This condition made the government implement policies to move the community's economy through the creative industry sector after the pandemic.

According to Muhyiddin et al. (2021), five elements determining society's sustainable life are capital assets, vulnerabilities, policies and institutions, welfare outcomes, and strategies for achieving that prosperity. The capital asset comprises human, natural, social, physical, and financial capital (Morton et al., 2017; Alisjahbana & Murniningtyas, 2018; Yunus & Sakaria, 2017). This paper explored the role of interior product designers (IPDs) in collaborating with parties related to asset capital to deal with the vulnerabilities of people's sustainable lives after the pandemic and, in this case, developing a new interior product that could increase the economic value of the artisans' products.

Opportunity needs for furniture or interior products are basic human needs that will not change occasionally. After the pandemic, humans are more comfortable doing activities in a smaller, safer, and more limited environment. This condition causes people to want changes in interior product designs. This opportunity could be developed to help revive the sluggishness of the creative industry after the pandemic. Designers strive to develop creative new furniture designs or interior products acceptable to the market, thereby increasing production activities. Market research and material availability are conducted to develop product designs that interest various markets. Appropriateness of design with market needs will increase production demand and directly impact the socio-economic welfare of artisans.

Local materials and the skills of Indonesian human resources are substantial capital to improve Indonesia's creative industries in the global market. The population, dominated by

productive age, is expected to have high creativity in developing this industry (Hermawan, 2020). These are also expected to be able to overcome employment problems after the pandemic in 2022 (Yusuf & Nabeshima, 2005). In 2020, the Ministry of Tourism and Creative Economy data stated that the craft sector's creative industry absorbed 3.9 million workers in Indonesia. This industry is one of the answers to labor problems in Indonesia. Then, the creative industry sector produced export commodities of up to US\$20 billion in the same year. Government data through the Ministry of Industry and Trade shows that in 2020, export commodities in the creative industry in product design and crafts are the second largest after the fashion industry, with an export value of US\$ 4.95 billion. This sector is a potential industrial sub-sector (Herdiyati & Ismail, 2022). Management from upstream to downstream is essential in developing creative industries (Chang & Lee, 2015; Wu & Lin, 2021).

To enhance this effort, IPDs need to play an active role and collaborate with various parties to develop creative industries in the field of interior and craft products in the world market. Knowledge collaboration from production to marketing can add value to products (Pahlevi, 2017). IPDs must partner with Small and Medium Industries (SMEs), entrepreneurs, governments, and exporters to improve interior product design and marketing quality (Arenius & Clercq, 2003; De Clercq & Arenius, 2002). The interior products produced in Indonesia have been quite good quality. However, the feedback from overseas users mainly mentioned monotonous designs and only repeat designs that have been popular before. It is in this field that the role of the IPDs is needed. IPDs must work together to provide new designs that keep up with the trends and can be accepted in the global market.

The author discussed two case studies on the role of IPDs in water hyacinth interior product design in Pasuruan, East Java, and rattan interior product design in Solo, Central Java. The designer team comprises faculty members and active Petra Christian University Interior Design Study Program students. The team worked closely with the interior product industry player to develop interior designs and products as export commodities with added value. East Java and Central Java have been the two largest provinces producing furniture products since 2015. These two provinces have the potential for skilled human resources and adequate natural resources in interior products.

In the first case study using water hyacinth, the designer team collaborated with the Pasuruan District Industry and Trade Office, the "Wins Knitting" Water hyacinth SME, and the East Java Indonesian Interior Designers Association. In the second case study, the designer team collaborated with the Central Java rattan SME, entrepreneurs, and exporters of interior products "CV Sheo Home Living Bali." Sheo Home Living is a company that was founded in 2017. Utilizing technological developments has made this company successful in exporting interior and craft products to more than 20 countries.

2. Literature Review

2.1. Indonesian Human Resources and Natural Resources

In the five applications of the sustainable living concept, the most basic thing is human capital assets. Indonesia has a highly skilled interior product and crafts workforce (Adikampana et al., 2018; Muhyiddin et al., 2021). The second asset capital is Indonesia's natural resource wealth. In the last few decades, Indonesia has entered the ranks of the world's largest exporters of natural raw materials.

Data from the Ministry of Environment and Forestry states that the export value of Indonesia's forestry industry products worldwide reached USD 11.6 billion in 2019 and decreased during the pandemic to 4.46 billion dollars in 2020. Indonesia had a furniture export

value of more than 300 million dollars in 2018 and decreased below 150 million dollars in 2020 (Ministry of Environment and Forestry Republic of Indonesia, 2020). However, the data showed that the export of unprocessed forestry products was more dominant than the interior products, showing that considerable potential was yet to be obtained.

Indonesia is the largest rattan-producing country in the world. Eighty percent of the world's rattan comes from Indonesia. Indonesian rattan is spread in Kalimantan, Sumatra, Sulawesi, and Irian Jaya, with a total potential of around 622,000 tons annually with an export value of US\$ 610,417,000 in 2020 (Ministry of Environment and Forestry of the Republic of Indonesia, 2020). However, in recent years, Indonesia has experienced a decline in its export trade for rattan products. Several factors that caused this decline were the scarcity of suitable raw materials, the consistency of raw material prices, and the lack of quality in Indonesian rattan furniture designs. Based on the level of processing, rattan can be classified as follows: raw rattan, naturally washed rattan, polished rattan, rattan heart, rattan skin, woven/sheets, strung, final-dried, and finished items. The design needs to adjust the type of rattan used with the available materials.

Water hyacinth (*Pontederia Crassipes*) is a natural material that is easy to find in Indonesia. Water hyacinth grows in rivers, lakes, and coastal ecosystems. Water hyacinth can be used as compost, biogas, fodder, and absorbent waste. Their fast growth rate often makes this plant a threat to aquatic ecosystems (Dersseh et al., 2019; Sudana & Mohamad, 2021). Water hyacinth could be processed into craft items that are environmentally friendly and capable of creating jobs (Punitha et al., 2018; Sudana & Mohamad, 2021). Water hyacinth processing goes through several stages, including harvesting, drying its stems, processing semi-finished materials (braids/plaits/sheets), assembly, final drying, and finished product. Several types of woven patterns of water hyacinths include single, double, braided woven, cross maps, clove flowers, water waves, Pihuntuan Tangkup, and Turik diamonds (Aniek, 2003).

2.2. Obstacles

Three other capital assets, such as social, physical, and financial capital, would have an impact on the ability of people's welfare (Al-Afeef, 2017; Moore, 2015; Muhyiddin et al., 2021). Therefore, in this effort, designers should work with the government, industry, and associations to strengthen other components of capital assets. Artisans with high human skill strength often do not have financial, social (networking) capital and the ability to provide tangible capital such as machines and other industrial equipment. The vulnerability problem caused by the pandemic has impacted the availability of raw materials and decreased market demand. Efforts are needed to update institutional, government, and association policies, which impact access to capital, productivity, and various policies to survive vulnerabilities due to the pandemic. The pandemic has caused many artisans to experience difficulties because market demand has fallen drastically. In addition, it also has had an impact on the high level of unemployment caused by layoffs.

Product quality and designs produced by artisans also need attention. It was necessary to carry out a design strategy and market analysis to increase welfare by increasing the productivity of the creative industries in the export market. Until then, exploration of Indonesia's natural wealth has been mainly carried out by outsiders. The designs were monotonous, and the marketing of interior and craft products was minimal. Foreign designers have designed the existing product, and the Indonesian artisans only contribute as fabricators. Design development for the global market should be synchronized with issues or trends in that country (Moore, 2015). Design not only answers user needs but can also become a user identity.

Another obstacle in the development of SME products so far was the lack of knowledge of SMEs regarding the latest design trends. SMEs' production techniques and facilities were minimal, so assistance and support from the industry and the government are needed. SMEs also need to improve product quality following export quality standards so that products can be accepted in the international market, especially in the preservation process of natural materials and the administrative completeness of the export documents.

3. Research Methodology

The interior product was developed using Kelley's Design Thinking method (Camacho, 2016; Johansson-Sköldberg et al., 2013). Design thinking generates design solutions through the Empathize, Define, Ideate, Prototype, and Test stages. Design thinking is a solution to a complex problem, understanding the problem and reformulating it, and innovation comes from reframing existing problems. The design inspiration discovery stage was carried out to observe and approach the conditions of the local creative industry, both natural and human resources, to see the opportunities and potential that exist (emphasize). East Java water hyacinth SME and Central Java rattan SME were involved in obtaining relevant information regarding the obstacles and conditions during the pandemic. The data was also compiled with the Pasuruan Industry and Trade Service and related private industries, such as Sheo Home Living and PT Cahayamas Pancabenua. From the existing data, mapping and analysis of the role of SMEs, industry, government, and exporters were also carried out to support this effort (define). Design concepts were then generated as problem boundaries to frame existing conditions (ideates) through alternative design sketches. Existing design forms were realized in a form that can be tested (prototypes and tests). The last stage was making publications for the potential markets and making a marketing plan (storytelling and business model canvas). The designer's role in all these stages was a long process from the initial stage, framing problems and applying the roles of each party to create sustainable livelihoods and improve the socio-economic welfare of artisans (Ruben & Hoebink, 2014). The opportunities for renewable design to increase the selling value of interior products, according to market reach, were examined.

4. Results and Discussion

In the product design sub-sector, the craft artisan is scattered throughout Indonesia. The government has provided various training and assistance for SME actors through existing agencies (Ministry of Tourism & Creative Economy of the Republic of Indonesia, 2021a). In Pasuruan, the Department of Industry and Trade of Pasuruan Regency routinely assists its SMEs, including Wins Knitting, which is developing its business in the craft of water hyacinth and knit interior products. Since 2019, Wins Knitting has taken advantage of the opportunity to utilize water hyacinths, which had threatened the river population in Pasuruan. Wins Knitting produces various water hyacinth handicrafts for national and international markets.

In Pasuruan Regency, water hyacinth once threatened river ecosystems because of its very high population. In 2019, the local government took the initiative to empower groups of artisans to process water hyacinth into handicraft products. The use of water hyacinth has been limited to making only handicraft products such as carpets, baskets, bags, and several other simple crafts, which experienced a decline in the market during the pandemic. Artisans' limitations in improving the quality of water hyacinth processing also cause this product not to develop optimally. Sustainable natural materials are design strengths that should be highlighted in the design. Natural materials like wood and rattan were developed simultaneously with water hyacinth. Design, quality, and production efficiency would determine the competitiveness of

Indonesian interior products in the global market (Padamali & Fernando, 2016). Products that compete in international markets must have specifications that meet market demands. Target users need to be defined so that the design can adapt to market demands.

Sheo Homeliving, another company in Bali, is trying to develop rattan and wood commodities by cooperating with SMEs across Solo and Central Java. In collaboration with design associations, exporters, and government agencies, Sheo Homeliving has developed marketing to 20 countries worldwide.

4.1. Designer Role

4.1.1. Emphasize Stage

By looking at the existing conditions in the field, IPDs sought collaboration so that their responsibility was not only on improving the quality of SMEs' natural and human resources. IPDs were responsible for creating a collaboration roadmap that involves each field of knowledge and background that supports this effort. First, the designer team approached local materials and SMEs' capacity related to material characteristics, weaving techniques, processing techniques, and assembly and packaging processes. The water hyacinth material used in the first case study came from river pollution in Pasuruan. In 2019, the Pasuruan Regional National Crafts Council (Dewan Kerajinan Nasional Daerah or DEKRANASDA), led by the Regent of Pasuruan, provided water hyacinth training for groups of craft artisans in Pasuruan. Wins Knitting responded positively to this effort and developed it into a product with high selling value. Pasuruan water hyacinth has very decent material characteristics, and the stem is thick and strong, so it is of high quality as a woven material.

Water hyacinth was processed into woven forms (Figure 1). It required a solid reinforcing structure due to its flexible characteristic. One of the uniqueness of this material is its ability to absorb iron in its structure, making it unsuitable to be combined with steel structures (Dersseh et al., 2019; Punitha et al., 2018). Therefore, in this study, wood and rattan were used as the frame for the sitting facility. The webbing must be thicker and more solid for the seat and back to accommodate the user's weight.



Figure 1. The process of weaving a water hyacinth sheet

In the second case study, a rattan artisan used and processed Sulawesi rattan in Solo, Central Java. Rattan is a natural material that is very easy to shape. Rattan can be bent to make a solid 360-degree circle. Several stages of making rattan material are shown in **Figure 2**, showing the material characteristics. The first stage was steaming to make rattan flexible. The rattan that has been steamed was bent specifically to the form designed. The rattan that had been bent was then confirmed so that it fit the design that had been made. Rattan was assembled into a single unit using nails and screws as connection reinforcement. After the framework was finished, the winding or webbing was installed on the seat and back following the design. The connection design was enclosed with rattan or cowhide wrap. After that, the spraying of water-based transparent finishing materials was carried out. The rattan was dried in the hot sun, so the finishing sticks perfectly. The final process was to scrub the rattan surface again so that the surface was smooth and even.



Figure 2. The process of making a rattan prototype

4.1.2. Define Stage

In the second stage, IPDs map the market segments to determine market segments. Several stages of analysis were carried out, including grouping market segments, selecting market segments, and product processing so that market segments remember them (Wijaya & Sirine, 2016). The target of this effort was to increase the international and national markets. The national market target was applied to a case study of water hyacinth in Pasuruan, East Java, so they appreciate local materials and are proud of their country's products. Existing local materials were included in interior product designs or high-value furniture for better acceptance. In the second case study in Solo, Central Java, the international market targeted the Australian and European markets. Environmentally friendly natural materials have a significant market share in developed countries. Developed country consumers value natural products more because this material is sustainable and an environmentally responsible choice for product disposal after its service life.

4.1.3. Ideate Stage

In the third stage, IPDs made design alternatives according to market achievements. In addition to the foreign market, the domestic market should be educated to appreciate national creations better. In the first case study, a spiritual trend was developed from the Indonesia Trend Forecasting 2021/2022 issued by the Ministry of Tourism and Creative Industries (Ministry of Tourism & Creative Economy of the Republic of Indonesia, 2021b). This style sought to highlight awareness of nature and culture. Product dimensions were adjusted to Indonesian human anthropometry (Chuan et al., 2010; Pheasant, 2003). Until then, Pasuruan water hyacinth products have only been processed into simple handicrafts and room decorations. This first case study processed water hyacinth into the primary materials for room furniture, such as seating facilities, shelves, and lamps (Figure 3). The water hyacinth was highlighted as a woven pattern, combining simple geometric shapes from other supporting materials such as wood and rattan.



Figure 3. The final design and prototype for the local Indonesian market

In the second case study, the market issues taken for the export market were sustainability and wellness. The use of natural materials that are sustainable and have an impact on health makes natural materials more in demand. The pandemic has also made humans prioritize nature in the parts of their homes and places to interact (Dhingra & Dhingra, 2020; Krumov et al., 2022; Robinson et al., 2022). Design development for the European market used a classic chinoiserie design style that is everlasting, which has been coming back to Europe recently. Cheerful colors were also used in the products to give a different touch to the designs. In the Australian market, a Scandinavian style was developed, which was simple but emphasized the flexibility of the rattan character. These characteristics were developed in designs for the Australian and European markets. The shapes of the rattan indentations were made into the main composition, both in the products of chairs, benches, swing chairs, tables, shelves, and tables. For the European and Australian markets, different design dimensions were used according to the anthropometry of the users (Pheasant, 2003). The design for the Australian market has eight product variants, including hanging chairs, accent chairs, stools, coffee tables, consoles, storage benches, hanging shelves, and side tables. The design for the

European market has four product variants: hanging shelves, stools, and drum stools. The finished product is shown in **Figure 4**.



Figure 4. Product design and prototype for the European and Australian markets

4.1.4. Prototype Stage

IPDs collaborated with SMEs, industry, and the government to create several design prototypes in the fourth stage (Moore, 2015; Yunus & Sakaria, 2017). In the manufacturing process, design improvements were made and adapted to production techniques in the field. Several designs were revised following material characteristics and production techniques. In water hyacinth production, the constraints faced were the limited number and ability of the SME workforce. The artisan had not been able to apply the woven into new forms of products such as lamps and seating facilities. These changes impacted the agreed production time, so the product documentation and promotion schedule were missed. Designers need to work around designs with production processes that are adjusted to the capabilities of SMEs so that the production process runs well.

In water hyacinth products, a structural frame was needed to function as a reinforcement and product aesthetics. Designers collaborated with the wood industry, which could provide high-value product quality (Figure 5). The government supports this activity through the Department of Trade and Industry of Pasuruan Regency by providing industrial machine-based wood processing centers. Before being processed, wood needs to undergo a drying process, and it must be oven-dried for moisture below 13% to reduce the expansion and shrinkage, which would affect the product to be made.



Figure 5. The process of making the product's wooden frame

The design considered the flexible material's characteristics of rattan material, so additional support was needed for the frame. This frame structure depended on the strength of the rattan in the product. The designs have been revised several times because they were adapted to the material's character and the SME artisan's production capabilities. In addition to processing rattan rods and weaves, the winding technique must be done to improve the product's aesthetics. The winding hid joints on rattan products and the nail joints. The winding used high-quality materials such as cowhide in premium rattan products for the international market. Details like this would increase the value of product exclusivity in the market. The prototype production process in the first and second case studies took about two months.

4.1.5. Test Stage

The fifth stage carried out by IPDs was to conduct a market test to determine market interest in the interior product made. For the domestic market, tests were carried out through soft launching and exhibition activities (**Figure 6**). Tests were conducted to determine the suitability of function, anthropometry, material durability, and production prices that follow market capabilities. The Regent of Pasuruan attended the exhibition as Chair of DEKRANASDA Pasuruan, SME, industry, several Pasuruan Regency Government agencies, and the Association of Indonesian Interior Designers Association ([Arenius & Clercq, 2003](#); [Alisjahbana & Murniningtyas, 2018](#)). From interviews with exhibition visitors, feedback was generated on the displayed products. Shape, size, color, and price were considered by consumers when choosing a product. The Department of Industry and Trade of Pasuruan Regency saw that this effort provides opportunities for SMEs to expand their market and increase the economic value of their products. In addition, this collaboration was an effort to synergize SMEs with industrial parties in East Java. In this process, SMEs experienced several challenges because the products shown differed totally from the usual handicraft products. This experience allowed SMEs to develop time-efficient production and managerial techniques. The Association of Indonesian Interior Designers also marketed the resulting prototypes through several events held by design associations in East Java.

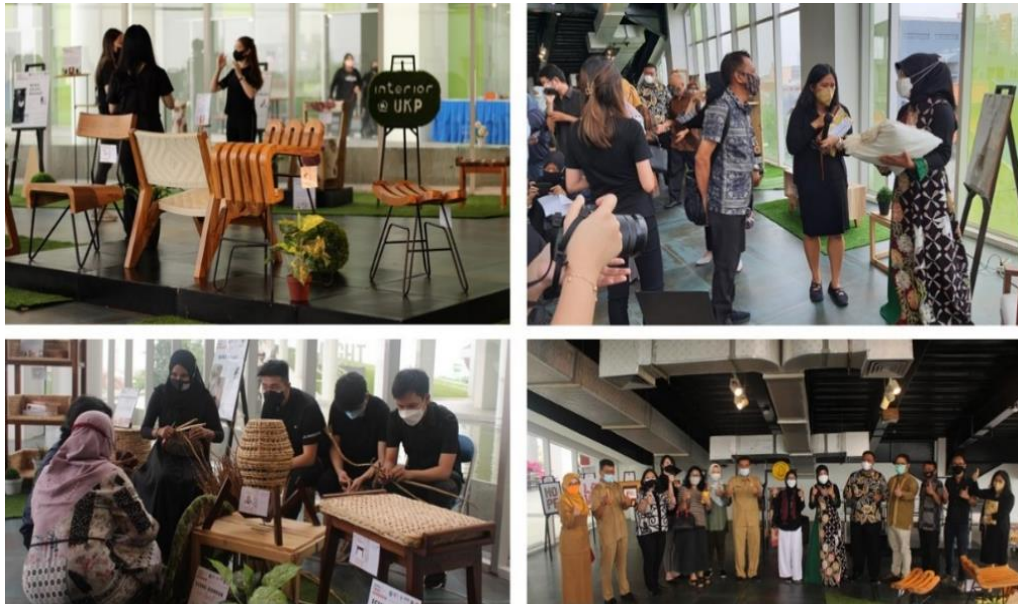


Figure 6. Domestic market test through a joint exhibition by Government Services and the Indonesian Interior Designers Association

Tests for the Australian and European markets were conducted through a soft product launch on the Sheo Homeliving company website. Finished prototypes were styled and documented, and photos of products that had been styled were included on the company's website to determine market interest in the products produced (Figure 7). IPDs played an essential role in the documentation process because they also did the product styling and interior arrangements. Documentation must be done thoughtfully to produce attractive and marketable advertising, and technology must be utilized to make marketing more extensive and optimal. The synergy of joint work between SME actors, designers, government agencies, industry, and exporters was needed in this test process.

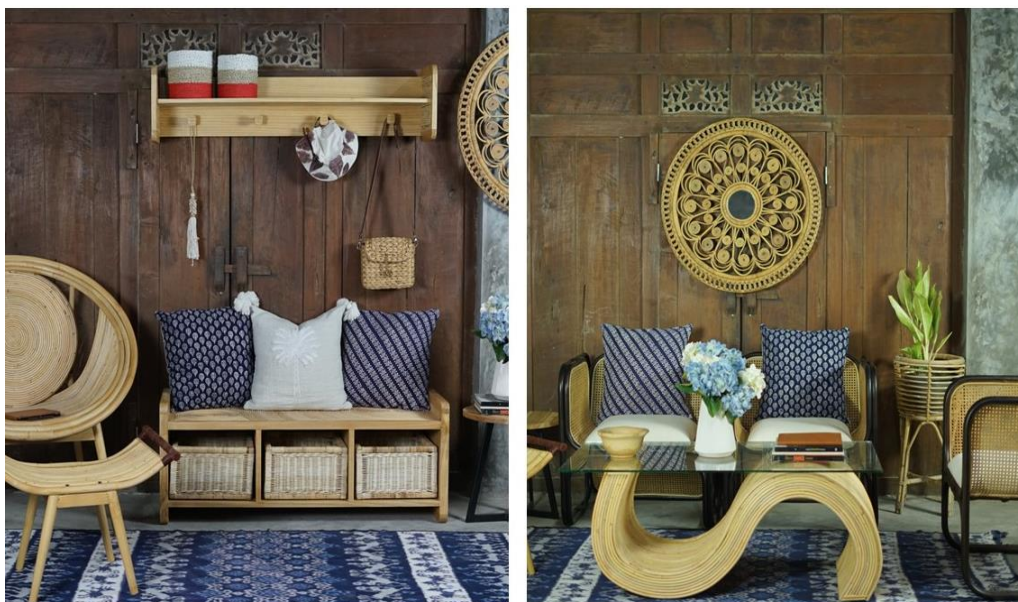


Figure 7. Interior product styling for promotions and publications

5. Conclusion

The COVID-19 pandemic, which has lasted more than two years, has caused many sectors of the economy to decline. Creative new designs could become a new course that increases the selling value of interior products made from local materials. Sustainable community welfare could be achieved if good capital assets support it and can survive the vulnerability due to the pandemic. The effort needs to be supported by government policies and professional associations to increase the income of artisans through design strategies that match the market. The previous interior products were monotonous and only repeated existing popular designs. IPDs play a role in framing the condition of Indonesia's creative industry and seeking new solutions to boost economic growth after the pandemic. They should collaborate on improvements to the monotonous old designs to increase the value of the interior products made by local artisans.

Through the design of interior products that are aesthetic, efficient, and of high quality, designers increase the selling value of products in local and global markets. Five stages of design implementation and development are shown in this paper. In the first stage, IPDs approached local materials as natural capital assets. In the second stage, IPDs analyzed human capital assets, including an artisan's capacity. Government agencies and industry involvement can help with the limited capital and financial, social, and physical assets that artisans do not have. Social capital or networking and market segment mapping involves entrepreneurs, government agencies, and design associations. In the third stage, IPDs created a schematic output of the design based on the availability of materials and the skill of artisans. The fourth stage was the prototype production process, which involved SMEs, industrial entrepreneurs, and government agencies. Market testing was done through branding activities and collaboration between entrepreneurs, governments, distributors, and associations.

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7. Declaration of Conflicting Interests

The authors have declared no potential conflicts of interest concerning this article's research, authorship, and/or publication.

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