

Analysis of Global Value Chains: Indonesia's Pearl Industry Competitiveness

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ABSTRACT

Global value chain (GVC) practices fragment production processes across countries, exposing a country's industry and market to both its economic potential and vulnerability within the global competition. In this case, Indonesia's pearl industry is placed in a disadvantageous position due to the extensive export volume of pearl commodities, offshoring practices in Lombok by foreign companies, and an underdeveloped pearl manufacturing sector. This study addresses this issue by examining Indonesia's pearl industry competitiveness within the global value chain framework. By utilizing GVC analysis concepts including governance, upgrading, and policy rent, this study presents a thorough understanding of Indonesia's government endeavors to enhance pearl industry competitiveness and reviews local company's behavior in GVC participation through the PT Nusantara Multi Jaya case study. Through qualitative research methods, it offers insights into government endeavors and local company behavior. The secondary data is used encompassing Indonesian government laws, policies, reports, publications, and news related to pearl industry development and support and PT Nusantara Multi Jaya's pearl jewelry brand, Lombok Paradise, including company profile, news, and product portfolios. Additionally, primary data is collected from the Lombok Paradise brand through participatory observation from 2020 to 2022, and in-depth interviews with a coach of resellers. The results indicate that while central and local governments serve as catalysts for enhancing industry competitiveness, there are gaps in promotional strategies, marketing tools, development initiatives in the pearl manufacturing sector, and empowerment programs. Additionally, the study underscores the significance of the marketing strategy, particularly the reseller networks, for local companies in GVC participation. The governance mapping reveals a retail buyer-driven value chain pattern, meanwhile the upgrading stages illustrates the product upgrading.

Keywords: Pearl Industry; Global Value Chain Analysis; Competitiveness; Policy Rents.

ABSTRAK

Praktik rantai nilai global memfragmentasi proses produksi ke berbagai negara, sehingga Praktik-praktik Rantai Nilai Global (GVC) memecah proses produksi lintas negara, mengekspos industri dan pasar suatu negara baik pada potensi ekonomi maupun kerentanan dalam persaingan global. Dalam kasus ini, industri mutiara Indonesia berada dalam posisi yang tidak menguntungkan karena volume ekspor komoditas mutiara yang luas, praktik offshoring di Lombok oleh perusahaan asing, dan sektor manufaktur mutiara yang belum berkembang. Studi ini mengatasi masalah tersebut dengan mengkaji daya saing industri mutiara Indonesia dalam kerangka rantai nilai global. Dengan memanfaatkan konsep analisis GVC termasuk tata kelola, peningkatan, dan kebijakan sewa, studi ini menyajikan pemahaman mendalam tentang upaya pemerintah Indonesia untuk meningkatkan daya saing industri mutiara dan meninjau perilaku perusahaan lokal dalam partisipasi GVC melalui studi kasus PT Nusantara Multi Jaya. Melalui metode penelitian kualitatif, studi ini memberikan wawasan tentang upaya pemerintah dan perilaku perusahaan lokal. Data sekunder digunakan yang mencakup hukum, kebijakan, laporan, publikasi pemerintah Indonesia, dan berita terkait pengembangan dan dukungan industri mutiara serta merek perhiasan mutiara PT Nusantara Multi Jaya, Lombok Paradise, termasuk profil perusahaan, berita, dan portofolio produk. Selain itu, data primer dikumpulkan dari merek Lombok Paradise melalui observasi partisipatif dari tahun 2020 hingga 2022, dan wawancara mendalam dengan pelatih reseller. Hasil

menunjukkan bahwa meskipun kedua pemerintah pusat dan lokal bertindak sebagai katalis untuk meningkatkan daya saing industri, ada kesenjangan dalam strategi promosi, alat pemasaran, dan inisiatif pengembangan. Selain itu, studi menekankan pentingnya strategi pemasaran, khususnya jaringan reseller, bagi perusahaan lokal dalam partisipasi GVC. Pemetaan tata kelola mengidentifikasi pola rantai nilai yang didorong oleh pembeli ritel, sementara tahapan peningkatan menunjukkan peningkatan produk.

Kata Kunci: Industri Mutiara, Analisis Rantai Nilai Global, Daya Saing, Rents kebijakan.

INTRODUCTION

Global value chain (GVC) integration exposed a country's industry and market to global competitions, revealing both its economic potential and vulnerability. For some countries, GVC may increase the industrial competitiveness because the domestic firms capable to meet a certain standard either for outsource or offshore production (UNIDO, 2018). GVC, at the same time, exposes risks to domestic firms which previously shielded by market boundaries, leading to either the economic and social upgrading or downgrading (Gereffi & Luo, 2014). In the case of Indonesia's pearl industry, GVC integration gradually put Indonesia's pearl industry in a disadvantageous position considering it as the largest producer of south sea pearl in the world.

A marine expert from Australia, Joseph Taylor, stated that Indonesia is the center of south sea pearl production in the world (Johari et al., 2018). Indonesia and Australia are the major contributors to fulfilling the global demand for south sea pearls, with smaller producers including Myanmar, Malaysia, and Papua New Guinea (Zhu et al., 2019). In 2023, Indonesia exported 10.78 tons of pearls, equivalent to 112.9 million USD (Statistics of the Ministry of Marine Affairs and Fisheries, 2023), while Australia exported 952 kilograms of pearls, valued at 12.27 million USD (UN Comtrade Database, 2023). Pearl, a marine resource, possesses excellent prospects for economic growth and business development (Johari et al., 2018). South sea pearls are notably recognized as the largest and most expensive pearls, with size ranging from 8 to 22 mm, surpassing other renowned pearl varieties such as Japanese Akoya, Chinese freshwater pearls, and Tahitian black pearls (Gandhiwati & Rahmanita, 2023). Thus, south sea pearl reigns the title of the Queen of Pearl (Ministry of Trade, 2016).

Indonesia, with its strategic prowess, has south sea pearl cultivation centers spread across 12 provinces including West Papua, North Maluku, Maluku, Southeast Sulawesi, Central Sulawesi, North Sulawesi, Gorontalo, East Nusa Tenggara, West Nusa Tenggara, Bali, West Sumatera, and Lampung (Rizaki et al., 2021). The optimal aquatic environment influences the quality of South Sea Pearls. Following this, Lombok's marine stands as a natural habitat for the *Pinctada Maxima* Pearl oyster which produces South Sea Pearls (Ministry of Trade, 2013). Research proved that Lombok's marine has current velocity, sea surface temperature, and salinity which are very suitable for thriving the oyster growth (Al-Habib et al., 2018). Consequently, Lombok has a large number of *Pinctada Maxima* oyster cultivation (Ministry of Trade, 2016). According to The Department of Marine Affairs and Fisheries of WNT data in 2020, West Lombok, North Lombok, and East Lombok have been utilizing its marine for pearl cultivation that covered areas of 450 ha, 300 ha, and 950 ha respectively (Asfin, 2020).

Table 1 Export of unprocessed and processed pearls in West Nusa Tenggara (WNT) Province from 2019 to 2023

Years	Commodity Export Volume (Ton)	
	Unprocessed Pearl	Processed Pearl
2019	184.11	
2020	1.98	
2021	1.13	
2022	1,70	
2023	28.49	

Source: (Department of Trade of WNT Province, 2023)

As the south sea pearl cultivation hub, Lombok produces excellent quality of pearls with high overseas market demand. However, Indonesian south sea pearl in global competitions tend to depend on foreign buyers because of three factors. First, high volume of exported raw pearls. Table 1

depicts the number of exported pearl materials and pearl products in West Nusa Tenggara between 2019 to 2023. Overall, the transaction volume of unprocessed pearls' export significantly outweighs that of processed pearls. The data shows fluctuations in the export of unprocessed pearls. A significant decline of export transactions is indicated from 2019 to 2020, dropping from 184.11 to 1.98 tons of pearls. Even if the transaction volume remained stagnant in the period of 2020 to 2022, there was a notable increase in export volume to 28.48 tons in 2023. Meanwhile, in the past five years, there have been no export transactions for processed pearls, indicating a lack of demand for pearl products from West Nusa Tenggara (WNT). To conclude, the data implies a higher demand for unprocessed pearls in the international market and indicates that the region has a substantial pearl cultivation industry but a less developed pearl manufacturing sector. Second, offshoring practice in Lombok by foreign companies. Maulana Ishak, Founder and CEO of Nusantara Multi Jaya, stated that the pearl manufacturing industry predominantly operates outside Lombok (Ishak, 2021b). Ishak's statement is confirmed by the extensive export volume of unprocessed pearls in Table 1. Furthermore, an illustrative example of an offshoring practices is carried out by Autore Pearl Culture LLC. The company, originally based in Australia, cultivates *Pinctada Maxima* oysters in Lombok to produce South Sea pearls. Autore Pearl Culture LLC sends the cultivated South Sea pearls to their headquarters in Australia. Then, they refine the pearls into pearl jewelry pieces and sell the products to the global market, without mentioning the south Sea pearls' origin (Autore, 2020).

Third, the underdeveloped pearl manufacturing sector. Lombok has naturally fostered a pearl handicraft industry cluster in Sekarbela, Karang Pule Village, Mataram city, West Lombok, WNT for generations. Then, the County Government of Mataram City designates the area as a shopping tourism and small industry development area namely *Klaster Industri Kerajinan Mutiara, Emas dan Perak* (Pearl, Gold, and Silver Handicraft Industry Cluster). However, two main shortcomings within the cluster hinder

the development of pearl manufacturing industry. First, the insufficient supporting facilities and accessibility such as roads, pedestrians, and parking lots within the area (Sushanti et al., 2016). Second, a lack of capital, few skilled craftsmen, and a low rate of technology utilization. Only 9 units of large-scale entrepreneurs out of 56 units in the pearl handicraft industry cluster have exported pearl crafts. The other units could not export their products due to factors like limited information, high shipping costs, absence of guarantees, and prolonged delivery times (Pebrianti & Muta'ali, 2017).

Although global value chains (GVCs) offer opportunities for market expansion, quality improvement, and information exchange, these practices also reveal the Indonesian pearl industry's dependence and vulnerability. The significant export of raw pearls and the offshoring cultivation practices in Lombok weaken Indonesia's bargaining power as a supplier due to its dependency on foreign markets. Additionally, these practices position Indonesia primarily as a supplier in GVC participation because exporting raw material is easier and cheaper, hindering the development of domestic manufacturing sector.

Global value chain is the fragmentation of the production process across borders, emerged in response to the complexities of global production networks that the traditional value chain analysis could not comprehend. Value chain analysis focused on the value creation within industries or individual firms and did not capture the connections within the chain. Meanwhile the global value chain analysis encompasses the entire value chain by mapping out the flow of goods, services, and information within the stages (Gereffi et al., 2005). There is no clear parameter to identify GVC participation parameter, but it is seen on the manner in which producers are connected to global market. Therefore, the global value chain participation in developing countries carries both opportunities and challenges. Large firms are capable to absorb the transferred knowledge and skills, and benefit from global markets, However, the small and medium enterprises face the difficulties to fulfil a certain standard such as the resources, technology, skills, and

management that the global market needs. Thus, the government need to act as a catalyst that assist, protect, govern, and support the domestic firm integrating to global value chains (Kaplinsky et al., 2012).

The Indonesian government's role should be a catalyst to enhance competitiveness rather than directly intervening in business performance. The government should provide policies that aim to create a supportive environment to stimulate competitive advantage creation. Furthermore, it should avoid interfering with industrial structure management, engaging in long-term market protection, or being indifferent to political pressures that maintain inefficient competition. Meanwhile, the company should play a key role in forming clusters and improving their domestic environment as a platform for international success. In essence, companies must create a situation where domestic (home-nation) buyers, suppliers, and channels contribute to their competitive growth instead of relying solely on foreign entities. Finally, the company need to locate their home-base (headquarters) in a home-nation that supports innovation and offers the best environment for global competitiveness (Porter, 1990).

Previous studies have examined various aspects of Indonesia's pearl industry, including the development strategies of the Sekarbela Pearl, Gold, and Silver Handicraft Industry Cluster, as well as the suitability of Lombok Sea as a cultivation hub. However, these studies have primarily focused on specific aspects of the industry and have not explored its integration into the global value chain participation. This study addresses this gap by providing a novel perspective on Indonesia's South Sea pearl industry within the global value chain framework. Through the case study of PT Nusantara Multi Jaya, this research contributes new insights to examine the local company behaviour in global value chain participation. This study also evaluates the policy rent within the pearl industry to assess Indonesian government's efforts in stimulating the industry competitiveness, focusing the advantages gained from government endeavors. Lastly, this research offers valuable implications for policy evaluation and development strategies in similar contexts, thereby

bridging a significant gap in research knowledge and enhancing our understanding of Indonesia's pearl industry in global value chain framework.

RESEARCH METHODOLOGY

Global Value Chain (GVC)

Global value chain (GVC) is a series of production stages for selling products or services to consumers, with each stage of value added at least being produced in two countries. This definition does not specify the form of foreign value added embodied in production, although GVC is often associated with either international trade in raw material e.g. aluminum, in intermediate inputs e.g. car parts, or in tasks e.g. back-office services (World Bank, 2020). GVC analysis has global (top-down) and local (bottom-up) perspectives, each outlined by three dimensions (Figure 1). The global perspective consists input-output structure, geographic scope, and governance structure; and the local perspective (bottom-up) include improvement, institutional context, and stakeholders. The global view focuses on a lead firm's manner to govern their global networks and its impact on other countries' economies, with governance as its key concept. Meanwhile, the local view, with upgrading as its main concept, concentrates on a country's effort to improve its position in the global economy (Fernandez-Stark & Gereffi, 2019).

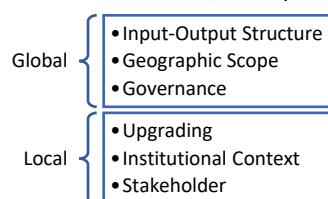


Figure 1 Six dimensions of global value chain

Source: (Fernandez-Stark & Gereffi, 2019)

Governance is a mechanism that coordinates activities and relationships among actors within value-chain by a company. This concept, introduced by Gereffi, described two types of international economic networks: producer-driven value chain led by large manufacturer and buyer-driven value chain dominated by large retailers, marketers, and manufacturer (Gereffi, 1999). However, this study will use Julie Nash's concept of governance within

the pearl culture industry to adjust the scope of industry discussion. Nash's framework identifies three key actors driving the international economic network in pearl industry: middlemen, producer, and retail buyer (Nash, 2015). There are:

1. *Middlemen-dominated value chain* is characterized by middlemen who purchase pearls from farmers without tracing the origin, manage the jewelry production process, and add value through pearl consolidation, matching, and producing jewelry.
2. *Producer-driven value chain* is led by producers who maintain full control over financial and physical resources, maintaining the retail outlets, adding value in pearl farming practices, jewelry production, branding, retail outlets, and overseeing the consumer and jewelry brand relationships. This type of governance is vertically integrated.
3. *Retail buyer-driven value chain* is dominated by a few large jewelry retail chains and direct-from-farm retailers. Large jewelry retailers establish connections with multiple pearl oyster cultivators, directly purchasing pearls from them. Then, the retailer sells their pearl product through various channels such as the internet and direct selling models. While this direct-from-farm is smaller, it is steadily growing. Both retailers are responsible for controlling jewelry stock maintenance, retail outlets, and the production process, adding value through top-quality pearl consolidation, matching, and jewelry production. Retail buyers also manage consumer relations and brand control, conveying consumer information to the value chain.

Subsequently, upgrading refers to the process of moving to higher value-added activities within global value chains. This study utilizes the four upgrading types by Humphrey and Schmitz to determine the company's value-added activity (Humphrey & Schmitz, 2002). There are:

1. *Process upgrading*, improving the production system or using sophisticated technology to transform inputs into outputs more efficiently.
2. *Product upgrading*, increasing unit value.

3. *Functional upgrading*, acquiring new functions to increase the overall activities or skill content.

4. *Inter-sectoral upgrading*, moving into new productive activities.

The concept of upgrading acknowledges the existence of rent because it recognizes firms' or countries' endeavors to seize higher profits within GVCs. In the context of economic rents, rent refers to the ability to control scarce resources that create barriers to entry, which are divided into four types of rent constructed by firm, chain, resource, and external to the chain as outlined in Table 2 (Kaplinsky et al., 2012). The indicators in each type of economic rent are often utilized by firms, manufacturers, or producers to assess the availability of necessary resources and the compatibility of the environment for production and operation. Thus, among the type of rents in Table 2, policy rents will be adopted in exploring the support, policies, or facilities provided by the government for enhancing the pearl industry's competitiveness. Policy rent refers to the advantages that firms, industries, or individuals can gain from government policies, regulations, or interventions within global value chain.

Table 2 Type of economic rent and indicators

Type of Rent		Indicators and barrier to entry
1. Rent constructed by the firm	Technology rents	Investment in R&D, patent statistics
	Human resource rents	Skill profile and training
	Organizational rents	Continuous improvement schemes, inventory and quality performance, lead-time
	Marketing rents	Advertising expenditure, brand performance
2. Rent constructed by the chain	Relational rents	Continuous improvement schemes, inventory and quality performance, lead-time for the chain
3. Resource rents	Resource rents	Yield of mining deposits and land
4. Rent accruing from actions	Policy rents	Effectiveness of government support, incentives
	Infrastructural rents	Telecommunication and roads

external to the chain	Financial rents	Interest rates, policies on security
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Source: (Kaplinsky et al., 2012)

The global value chain analysis in this study uses the concept of governance, upgrading, and policy rent. To begin with, the governance concept maps the pearl value chain and the concept of upgrading identifies value-added activities through the PT Nusantara Multi Jaya case study. Then, the policy rent assesses the Indonesian government efforts to enhance the pearl industry competitiveness. Finally, a comprehensive global value chain analysis provides a thorough understanding of the dynamics of Indonesia's pearl industry competitiveness in global value chain participation.

Method

To elaborate the Indonesian government efforts and local company behaviour in global value chain participation, this study uses a qualitative method. This type of research is descriptive that examines, describes and clarifies a phenomenon or social reality and variables appropriate for the problem and research unit (Ugwu & Val, 2023). The data sources encompass Indonesian government laws, policies, reports, publications, and news related to pearl industry development and support. Case study data is derived from PT Nusantara Multi Jaya's pearl jewelry brand, Lombok Paradise, encompassing company profile, news updates, and product portfolios. Additionally, primary data was collected to identify the pearl value chain linkages and patterns, value-added activities, and global market integration.

The selection of PT Nusantara Multi Jaya, particularly its pearl jewelry brand, Lombok Paradise, as case study subjects is driven by their significant practice in pearl manufacture industry. Their production chain and value-added practices are similar with other medium-sized companies in Lombok, such as Lombok Mutiara Sekarbela & Ana Pearl. PT Nusantara Multi Jaya represents a successful local manufacturing company that capable to integrate into the global market as a producer.

PT Nusantara Multi Jaya utilizes social media, especially the WhatsApp application, to connect with its reseller network across

Indonesia's regions and abroad. The primary data gathered through the participatory observation as a leader of reseller for Lombok Paradise brand at PT Nusantara Multi Jaya. It was conducted during the pandemic between 2020 to 2022, where the intensity of digital platform usage was at its peak. To ensure the credibility and completeness in data collection from observation, in-depth interviews were conducted. The interviewee was a coach of resellers in PT Nusantara Multi Jaya who has direct access to connect with the production team and CEO, ensuring firsthand insights into the company's dynamics. The interviews were conducted online using the WhatsApp application as the primary tool to connect with informant because of its efficiency in engaging with individuals from long distances.

RESULTS AND DISCUSSION

Governance Mapping Within Pearl Value-Chain Activity

Figure 2 illustrates the governance structure of pearl jewelry manufacturing at PT Nusantara Multi Jaya. Overall, the process consists of seven chains operating at both local and global levels, beginning with the raw material supplier, and ending up with end customer. First, South Sea pearls are procured from supplier partner and forwarded to the production team. These pearls are sorted out by the production team for quality control before being handed over to craftsmen, along with the jewelry designs. The refined pearl jewelry is sent back to the production team by the craftsmen for packing and catalog making. These stages take place at PT Nusantara Multi Jaya's headquarters in Lombok. Subsequently, the finished pearl jewelry is distributed to offline galleries and resellers for direct sales, while catalogs are disseminated to resellers for online promotion. Upon receiving an online order, the production team manages packaging and dispatches the product to the customer via an external delivery service.

These two chains operate across various regions in Indonesia and globally.

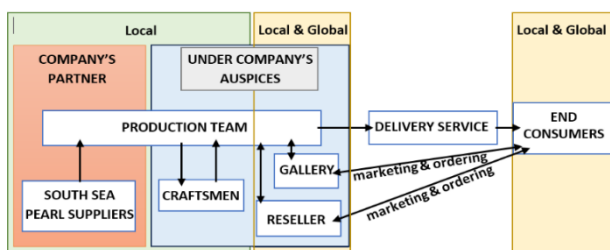


Figure 2 Governance of pearl jewelry production

Source: Data Processed, 2022

The company fulfills their role as a key player by creating its own chain or cluster from local actors, developing the pearl industry's local factor. NMJ LLS also makes a right decision to place their home based in Lombok, a hub of pearl cultivation and pearl craft cluster, accelerating the absorption of information and technology (Lombok Paradise, 2022). Through value chain mapping, the governance of pearl jewelry production is identified as a retail buyer-driven value chain. Rather than engaging in pearl oyster cultivation, PT Nusantara Multi Jaya collaborates with South Sea pearl suppliers in Lombok. Moreover, it engages local craftsmen under its auspices instead of establishing a jewelry factory, providing materials and designs. The company also utilizes delivery services from other companies. Furthermore, it establishes a reseller network beyond Lombok, dominated by Indonesian from various regions. This network serves as a crucial element in integrating PT Nusantara Multi Jaya into global value chain participation, selling the pearl jewelry products to global buyers. Thus, a retail store in the form of a mini gallery is established in America through PT Nusantara Multi Jaya's reseller network they had (Natalia, 2022).

a. Upgrading stages of pearl value-added activity

Figure 3 illustrates the pearl jewelry manufacturing processes by PT Nusantara Multi Jaya. Overall, the process consists of eight stages beginning with the south sea pearls procurement and ending up with the sale of product to customers. Firstly, the company procures the South Sea pearls and proceeds with the sorting and grading process. Only A-grade South Sea pearls, in

accordance with the SNI for South Sea Pearls, are selected during this stage. Subsequently, during jewelry manufacturing process, craftsmen assemble pearls into the jewelry frames made of silver or rhodium which designs are made by the company. Following this, the company issues certificates by PT Nusantara Multi Jaya and creates catalogs for online promotion. These processes take place at the PT Nusantara Multi Jaya headquarters in Lombok, Indonesia. Finally, the product is packaged using exclusive jewelry boxes before being distributed to the designated addresses of local or global customers (Natalia, 2022).

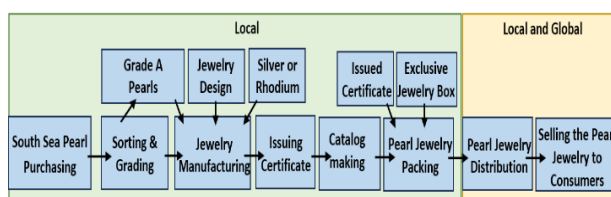


Figure 3 Value-added chain of Pearl jewelry production

Source: Data Processed from (Natalia, 2022)

The illustration of value-added processes demonstrates the type of product upgrading. Value-added activities are neither found in increasing process efficiency, function, nor moving to the new industry line. The patterns of Innovation and adaptation occur within the jewelry manufacturing process, specifically in design making and jewelry assembly. PT Nusantara Multi Jaya uses both rhodium and silver as their primary materials for pearl jewelry frame and, they could design five to ten models of jewelry in a day, preserving the original form of pearls (Ishak, 2021 a). Thus, it is defined that the evolution and innovation in the pearl industry seem to be concentrated within the craftsmanship domain. Additionally, PT Nusantara Multi Jaya's competitive factors in the global market are driven by its marketing strategy, including brand registration (Intellectual Property Database, 2023) and its reseller network, and jewelry design capabilities.

a. Policy Rents by The Government

The assessment of the Indonesian government's efforts in enhancing the competitiveness of the pearl industry is divided into the Central government and local government levels. Given that Lombok

serves as the central hub for pearl cultivation activities and is home to the only region with pearl craft clusters, the scope of the local government encompasses all government authorities in the West Nusa Tenggara Barat (WNT) province. Table 3 showcases the data detailing the efforts of both levels of government based on the types of rents and their respective instruments within the economic rent concept framework. The data presented lacks a specific time frame and encompasses all efforts from the early stages of the pearl industry's development period.

Table 3 depicts the policy rents of both central and local governments for the pearl industry based on its type and instruments. Overall, both levels of government provide similar types of rents and their instruments. The central government's efforts in pearl industry development lean towards concentrating on the pearl oyster cultivation, establishing facilities, standardization, promotion, and enforcing legal bases. On the other hand, the local government tends to focus on creating pearl cultivation and craft clusters, empowering local crafters, establishing promotion tools, and enforcing legal bases.

The utilization of marine resources in the Indonesian Exclusive Economic Zone highlights the welfare and prosperity of the people. Indonesia's marine resource management, including pearl resources, is regulated by Indonesia Republic Law no. 45 of 2019 about amendment of Indonesia Republic Law no. 45 of 2019 about amendment of Indonesia Republic Law no. 31 of 2004 about Fisheries (Undang-Undang No. 45 Tahun 2009 Tentang Perubahan Atas Undang-Undang No. 31 Tahun 2004 Tentang Perikanan, 2009), Indonesia Republic Law no. 32 of 2014 about Marine (Undang-Undang No. 32 Tahun 2014 Tentang Kelautan, 2014), and Presidential Regulation No. 16 of 2017 about Indonesian Maritime Policy (Peraturan Presiden Republik Indonesia No. 16 Tahun 2017 Tentang Kebijakan Maritim Indonesia, 2017). Additionally, the basis for the industrial sector in Indonesia, including pearl industry, to ensure healthy, independent, and competitive industrial development is ratified in Indonesia Republic Law no. 3 of 2014

about Industry (Undang-Undang No. 03 Tahun 2014 Tentang Perindustrian, 2014).

According to the data, the central government has sufficiently fulfilled its role as a catalyst. Their efforts seem to aim at producing higher-quality South Sea pearls through support in the upstream sector, increasing awareness of Indonesia's pearl brand through promotional activities and facilities, and providing the legal framework to maintain stability in the local industry and market. There are three key supports in the pearl upstream sector. Firstly, seed insertion training for South Sea pearl oyster, *Pinctada maxima*, cultivation, as listed in Minister of Manpower Decree No. 283 of 2016 (Keputusan Menteri Ketenagakerjaan Republik Indonesia No. 283 Tahun 2016 Tentang Penetapan Standar Kompetensi Kerja Nasional Indonesia Kategori Kehutanan Dan Perikanan Golongan Pokok Perikanan Bidang Budidaya Tiram Mutiara *Pinctada Maxima*, 2016). This training aims to cultivate expertise among local manpower and reduce dependency on foreign experts for pearl seed insertion.

Secondly, the establishment of genetic engineering facilities for pearl seed production, known as the Technical Implementation Unit (TIU/UPT) of Aquaculture in Karangasem, Bali. This initiative aims to meet the demand for pearl seeds from eight pearl cultivation areas in Indonesia and protect wild pearl oysters (Directorate General of Fisheries Cultivation, 2018). Thirdly, the establishment of UPT Marine Bioindustries in Mataram, Lombok, WNT, to develop oyster cultivation technology from hatchery to enlargement and production of pearl seeds (Indonesian Institute of Sciences, 2018). To ensure the quality of Indonesian South Sea pearls, the central government has standardized South Sea pearls by issuing the Indonesian National Standard (SNI) for South Sea Pearls (SNI 4989:2016), which serves as the legal grading criteria for pearls (Peraturan Kementerian Kelautan Dan Perikanan Republik Indonesia No. 20 Tahun 2016 Tentang Pemberlakuan Standar Nasional Indonesia 7 (Tujuh) Produk Perikanan Nonkonsumsi, 2016) (Ministry of Marine Affairs and Fisheries, 2019b). Additionally, the government has facilitated South Sea pearls grading and sorting at Rumah Mutiara Indonesia in Lombok

(Hananto, 2015), and has provided training for quality testing officers at production centers and airport entrances (Dari Laut Indonesia, 2019).

Furthermore, the government has undertaken efforts to increase awareness of Indonesian pearl brands, with objectives aimed at accessing the global market. Through the annual Indonesia Pearl Festival, the government aims to attract both foreign and local buyers and investors. The festival includes a clean sea campaign, pearl collection exhibitions, fashion and jewelry shows, and talk shows about pearls (Ministry of Marine Affairs and Fisheries, 2019a). Rumah Mutiara Indonesia also serves as a venue for pearl auctions and as an education and information forum (Rahman, 2014). Lastly, the government attempts to maintain stability in the local industry and market through legal enforcement regarding taxes and regulations. The South Sea pearl SNI is applied in three ministry regulations: product safety standards in Ministry of Marine and Fisheries Regulation No. 8 of 2013 (Peraturan Menteri Kelautan Dan Perikanan Republik Indonesia No. 8 Tahun 2013 Tentang Pengendalian Mutu Mutiara Yang Masuk Ke Dalam Wilayah Negara Republik Indonesia, 2013), importing pearl core recommendation in Ministry of Trade Regulation No. 3 of 2018 (Peraturan Menteri Perdagangan Republik Indonesia No. 3 Tahun 2018 Tentang Ketentuan Impor Mutiara, 2018) and Minister of Fisheries Regulation No. 30 of 2020 (Permen KP RI No 30, 2020).

Additionally, there are six regulations governing taxes on the pearl industry:

1. The Regulation of the Director General of Taxes No. 20 of 2015 about the Procedures for Imposing Land and Building Tax in Other Sectors, imposing taxes on pearl cultivation (Peraturan Direktur Jenderal No. 20 Tahun 2015 Tentang Tata Cara Pengenaan Pajak Bumi Dan Bangunan Sektor Lainnya, 2015).
2. The Decree of the Director General of Taxes No. 126 of 2015 about Determination of Land Value Per Square Meter, Production Cost Ratio, Capitalization Figure, And Fishing Area Per Vessel, 10 % tax for Pearl cultivation building and field (Keputusan Direktur

Jenderal Pajak No. 126 Tahun 2015 Tentang Penetapan Nilai Bumi Per Meter Persegi, Rasio Biaya Produksi, Angka Kapitalisasi, Dan Luas Areal Penangkapan Ikan Per Kapal, Untuk Penentuan Besarnya Nilai Jual Objek Pajak Bumi Dan Bangunan Sektor Lainnya, 2015).

3. UU RI No. 42 of 2009 about the third amendment to Law No. 8 of 1983 Concerning Value Added Tax on Goods and Services and Sales Tax on Luxury Goods, imposing the value-added tax included the pearl craft industry (Undang-Undang No. 42 Tahun 2009 Tentang Perubahan Ketiga Atas Undang-Undang No. 8 Tahun 1983 Tentang Pajak Pertambahan Nilai Barang Dan Jasa Dan Pajak Penjualan Atas Barang Mewah, 2009).
4. Minister of Finance Regulation No. 30 of 2014 about Value Added Tax on The Delivery of Gold Jewelry, 10% Value-added tax on domestic pearl sales (Peraturan Menteri Keuangan Republik Indonesia No. 30 Tahun 2014 Tentang Pajak Pertambahan Nilai Atas Penyerahan Emas Perhiasan, 2014).
5. Government Regulation No. 81 of 2015 about Import And/Or Delivery of Certain Strategic Taxable Goods Which are Exempt from Value Added Tax, 0% VAT for business activities in the marine and capture fisheries and aquaculture sectors (Peraturan Pemerintah Republik Indonesia No. 81 Tahun 2015 Tentang Impor Dan/Atau Penyerahan Barang Kena Pajak Tertentu Yang Bersifat Strategis Yang Dibebaskan Dari Pengenaan Pajak Pertambahan Nilai, 2015).

Because the South Sea pearl is designated as one of the SNI goods, import activities are restricted and tightly controlled, and the quality is referenced to the South Sea pearl SNI. There are three regulations for this activity:

1. Ministry of Marine and Fisheries Regulation No. 8 of 2013 about Quality Control of Pearls Entering the Territory of the Republic of Indonesia to ensure that the minimum grade of imported pearl or pearl enter to Indonesia are C and beyond (Peraturan Menteri Kelautan Dan Perikanan Republik Indonesia No. 8 Tahun

- 2013 Tentang Pengendalian Mutu Mutiara Yang Masuk Ke Dalam Wilayah Negara Republik Indonesia, 2013).
2. Minister of Trade Regulation No. 3 of 2018 about Pearl Import to control the imported pearl for creating a conducive environment for pearl business actor (Peraturan Menteri Perdagangan Republik Indonesia No. 3 Tahun 2018 Tentang Ketentuan Impor Mutiara, 2018).
 3. Minister of Fisheries Regulation No. 30 of 2020 about Recommendations for the Entry of Candidates for Parent, Parent, Fish Seed and/or Pearl Core to improve the service of aquaculture business (Peraturan Menteri Kelautan Dan Perikanan Republik Indonesia No. 30 Tahun 2020 Tentang Rekomendasi Pemasukan Calon Induk, Induk, Benih Ikan, Dan/Atau Inti Mutiara, 2020).

Just like the central government, the local government has also adequately fulfilled its role as a catalyst by not interfering and curbing the freedom of innovation within the industry. The local government is more proactive in creating a competitive pearl cluster in both upstream and downstream sectors. To begin with, the Department of Marine Affairs and Fisheries of WNT Province establishes pearl culture chain by dividing it into three clusters. The objectives are maintaining the productivity and availability of south sea pearls and stimulating the efficient breeding and rearing pearl oyster spat. Cluster 1 is the pearl oyster spats breeding area, cluster 2 is the oyster spats enlargement area from 7 to 10 cm, and Cluster 3 is the oyster spats sales point to pearl cultivation companies (Suara NTB, 2019).

Subsequently, the existing natural pearl craft cluster is legalized as a small industry development area in the Pearl, Gold, and Silver Craft Industry Cluster through the Decree of the Mayor of Mataram No 526 of 2009 (Kep Walikota Mataram No 526, 2009). The cluster also decreed as the Shopping Tourism area in the Regional Regulation No. 12 of 2011 concerning the Spatial Plan for the city of Mataram in 2011-2031 to increase the business actor productivity (Peraturan Daerah Kota Mataram No. 12 Tahun 2011 Tentang Rencana Tata Ruang Wilayah Kota Mataram Tahun 2011-2031, 2011). Additionally, the BDS Center for Small

Business Incubation in Mataram and the MSME Cooperative Office of the Province of WNT in collaboration with the Dana Bakti Astra Foundation conducted the dissemination of technology information and training, including mentoring activities aimed at developing for MSME craftsmen within the cluster (Sushanti et al., 2016).

The local government also provides promotion tools for pearl products through festivals, Geographical Indication (GI) registration, and hybrid commerce creation. There are two annual festivals, namely the Lombok Sumbawa Pearl Festival (Antara, 2011) and the Mataram Pearl Festival (Mataram Radio, 2021). These festivals' objectives are to promote pearl oyster cultivation on Lombok Island to attract investment and increase the competitiveness of pearl craftsmen and entrepreneurs. Especially, the Lombok Sumbawa Pearl Festival provides a pearl cultivation visit agenda in Lombok and Sumbawa for buyers. Meanwhile, the Mataram Pearl Festival holds a pearl auction. Furthermore, The WNT government applied the Geographical Indications (GI) "Pearl Lombok" in 2019 to increase the value of price, characteristics, image, and quality, as well as maintain business competition and protect customers, MSMEs, and the WNT pearl craft industry (Department of Marine Affairs and Fisheries of WNT Information Officer, 2020) (Undang-Undang No. 20 Tahun 2016 Tentang Merek Dan Indikasi Geografis, 2016). As a result, the Ministry of Law and Human Right of Indonesia issued the GI of Pearl Lombok certificate in 2023 in accordance with Brands and Geographical Indications on UU RI No. 20 of 2016 (Directorate General of Intellectual Property, 2023). Finally, the government also creates a hybrid commerce facility called NTB Mall to expand market access on both a local and global scale (Province of WNT, 2020).

Lastly, local government ensures the availability of legal bases for pearl business permits either by local or foreign actors, through West Nusa Tenggara Province Regional Regulation No. 1 of 2010 and WNT Governor's Regulation No. 18 of 2018. Lombok's pearl cultivation businesses in WNT Province secure capital from domestic and foreign sources, as well as individuals, under the legal framework of West Nusa Tenggara

Province Regional Regulation No. 1 of 2010. This regulation mandates a Fishery Business License (including pearl) for pearl oyster cultivation and pearl marketing businesses with a tariff of IDR 500,000 per permit. Then, the pearl oyster cultivation and marketing business requires a Special Permit for Pearl Cultivation and Marketing (SIPJK), issued to legal entities or individuals domiciled in WNT Province and engaged in fish cultivation within the region. SIPJK issuance prohibits the use of foreign workers or capital without the approval from the Governor of WNT. Regulations also outline compliance with regional spatial planning and reporting requirements, mandating the use of hatched pearl snails. Measures are in place to

regulate the importation of pearls and shells into WNT Province, requiring a Certificate of Origin (Peraturan Daerah Provinsi Nusa Tenggara Barat No. 1 Tahun 2010 Tentang Retribusi Izin Usaha Perikanan, 2010). Additionally, WNT Governor's Regulation No. 18 of 2018 about Location Permits and Water Management Permits in Coastal Areas and Small Islands facilitates permit applications for water utilization, ensuring legal certainty for investment in coastal areas and small islands and creating maintaining collaboration between central and regional governments (Peraturan Gubernur Nusa Tenggara Barat No. 18 Tahun 2018 Tentang Izin Lokasi Dan Izin Pengelolaan Perairan Di Wilayah Pesisir Dan Pulau-Pulau Kecil, 2018).

Table 3 Rents of pearls craft industry

Type of rent	Instrument	Policy Rents by The Governments		
		Central Government	Local Government	
Rent constructed by the firm	Technology rents	Investment in R&D	<ol style="list-style-type: none"> 1. Domestic and foreign investment for pearl oyster cultivation R&D. 2. Production of high-quality seeds of pearl oyster in technical Implementation Unit (TIU), Karangasem, Bali. 	<ol style="list-style-type: none"> 1. Domestic, foreign, and individual capital for Retribution for Fisheries Business Permits. 2. The submission of marine utilization for investors.
		Patent statistics	<ol style="list-style-type: none"> 1. Issuance of SNI Pearl South Sea (SNI 4989:2016). 2. The publication of the SNI book for Non-Food Fishery Products. 3. Issuance of HS Code 71.01 for natural or cultured Grading specification on Ministerial Regulation No. 8 of 2013. 4. Industrial Design on UU RI No. 31 of 2000. 5. Copyright on UU RI No. 19 of 2002. 6. Brands and Geographical Indications UU RI No. 20 of 2016. 	<ol style="list-style-type: none"> 1. Submission of Geographical Indications "Lombok Pearl" by the WNT government.
		Technology	<ol style="list-style-type: none"> 1. Cultivation technology development of pearl oyster hatchery, enlargement, and seeds production by the TIU Mataram Marine Bioindustry Development Workshop Lombok, WNT. 	Technology not provided because there has not been any efforts or policies to match this instrument
	Human resource rents	Skill profiles are not provided because there have not been any efforts or policies to match this instrument		
		Training	<ol style="list-style-type: none"> 1. Stipulation of Indonesian National Work Competency Standards in the Field of Pinctada Maxima Cultivation on Minister of Manpower Decree No. 283 of 2016. 2. Quality control training for officers of production centers and airport entrances. 	<ol style="list-style-type: none"> 1. Information, training and mentoring services for MSMEs for craftsmen in the Pearl, Gold and Silver Craft Cluster by the WNT. 2. Province Cooperatives and MSMEs Service in collaboration with the Astra Bakti Fund Foundation.
	Organizational rents	Continuous improvement schemes	<ol style="list-style-type: none"> 1. UU RI No. 3 of 2014 about Industry as the legal basis for the Pearl Craft Industry. 2. Pearl Cultivation Business Segmentation and Cultivation Zoning Mapping by the Ministry of Marine Affairs and Fisheries Directorate General of Aquaculture 3. Pearl Product Development Governance Coordination in 2018. 4. UU RI No. 45 of 2009 about Amendments to UU RI No. 31 of 2004 concerning Fisheries. 5. UU RI No. 32 of 2014 about the Ocean, 	<ol style="list-style-type: none"> 1. Cooperation with the Lombok Pearl Merchants and Craftsmen Association. 2. Determination of Pearl, Gold, and Silver Handicraft Industry Cluster in Mataram City based on the Decree of the Mayor of Mataram No. 526 of 2009. 3. Pearl culture chain pattern cluster development by the Department of Marine Affairs and Fisheries of WNT Province

Table 3 Continued				
Type of rent	Instru-ment	Policy Rents by The Governments		
		Central Government	Local Government	
Rent constructed by the firm		managing the marine resources including Pearl. 6. Presidential Regulation of the Republic of Indonesia No. 16 of 2017 about Indonesian Marine Policy.		
		Inventory & quality performance are not provided are not provided because there have not been any efforts or policies to match this instrument		
		Lead-Time not provided are not provided because there have not been any efforts or policies to match this instrument		
Marketing rents	Advertising expenditure	<ol style="list-style-type: none"> 1. The annual festival " Indonesia Pearl Festival " by the Ministry of Marine and Fisheries. 2. Rumah Mutiara Indonesia (The Indonesia Pearl House) establishment in Central Lombok, WNT in 2014. 	<ol style="list-style-type: none"> 1. Determination of Shopping Tourism Areas in the Pearl, Gold and Silver Craft Industry Cluster in Karang Pule, Sekarbela District, Mataram City through Regional Regulation No. 12 of 2011. 2. The establishment of the annual Lombok Sumbawa Pearl Festival. 3. Management of the Indonesian Pearl House by the Department of Culture and Tourism of WNT. 4. The WNT government created a hybrid commerce called NTB Mall which is available offline and online. 5. The Mataram Pearl Festival held by the Mataram Tourism Office. 	
Relational Rents are not provided are not provided because there have not been any efforts or policies to match this instrument				
Resource Rents not are not provided are not provided because there have not been any efforts or policies to match this instrument				
Rent accruing from actions external to the chain	Infrastructural rents	Telecommunication are not provided are not provided because there have not been any efforts or policies to match this instrument		
		Roads/ Facilities	<ol style="list-style-type: none"> 1. Rumah Mutiara Indonesia, Central Lombok establishment. 2. Marine and Shellfish Cultivation Fisheries Center called TIU of Directorate General of Aquaculture, Karangasem Bali establishment. 3. TIU of Marine Bioindustry Development Workshop in Mataram Lombok, WNT establishment. 	<ol style="list-style-type: none"> 1. Roads/facilities are not provided because there have not been any efforts or policies to match this instrument
	Financial rent	Interest rates	<ol style="list-style-type: none"> 1. Pearl cultivation tax on the Regulation of the Director General of Taxes No. 20 of 2015. 2. 10% tax on Pearl cultivation building and field tax on the Decree of the Director General of Taxes No. 126 of 2015. 3. Value-added tax on luxury goods including pearl craft industry on UU RI No. 42 of 2009. 4. 10% value-added tax on domestic pearl sales on Minister of Finance Regulation No. 30 of 2014. 5. 0% value-added tax on strategic products from marine and capture fisheries and aquaculture on Government Regulation No. 81 of 2015. 	<ol style="list-style-type: none"> 1. Obligation of retribution for SIPJK pearl cultivation business and the levy tariff for SIUP of Rp. 500,000 per business license on Regional Regulation of West Nusa Tenggara Province No. 1 of 2010.
		Policies on security	<ol style="list-style-type: none"> 1. Quality control of Imported pearl or pearl enter to Indonesia on Ministry of Marine and Fisheries Regulation No. 8 of 2013. 2. Imported pearl control on Minister of Trade Regulation No. 3 of 2018. 3. Recommendations for the Entry of Candidates for Parent, Parent, Fish Seed and/or Pearl Core, to improve the service of aquaculture business on Minister of Fisheries Regulation No. 30 of 2020. 	<ol style="list-style-type: none"> 1. Retribution for Fisheries Business Permit concerning the authority to issue SIPJK including pearl cultivation by the Governor based on considerations of foreign capital and or foreign workers on Regional Regulation of West Nusa Tenggara Province No. 1 of 2010.

Sources: Data Processed, 2024

b. Global Value Chain Analysis

Both central and local governments are commendable for providing policies, regulations, and supports to the pearl industry that benefits firms, industry, and individuals. Both governments guarantee legal certainty for local companies and investors, open access to the global market, ensure pearl resource sustainability within the industry, and secure employment opportunities for individuals. The central government has enforced good policies in controlling and reducing imported pearls through the standardization of South Sea pearls and export and import regulations, ensured sustainable growth by providing research and development facilities for Indonesia's South Sea pearl cultivation, empowered local expert for seed insertion of *Pinctada Maxima* oyster, and promoted Indonesia's pearl commodity and products through promotional agendas and strategies. On the other hand, the local government is proactive in stimulating the competitiveness of the local workforce within pearl cultivation and craft clusters, proficient in controlling the number of foreign investors and regulating companies through its legal bases.

However, either the central or local government are lack promotional strategies that could increase the intensity of end-product selling. The inconsistency of pearl festivals despite their labeling as annual events in Indonesia Pearl Festival, Lombok Sumbawa Festival, and Mataram Pearl Festival; and the absence of marketing tools cover the attractiveness of Indonesian south sea pearl's end products. The benefits from successful promotion would bring surplus in foreign exchange earnings and increase Indonesia's bargaining power in global market. Furthermore, it is essential for the central government to prioritize the development initiatives of the pearl craft and manufacturing sectors, given that there have been no policies specifically addressing these sectors. Meanwhile, the local government needs to enhance the intensity of craftsmen and MSME empowerment programs, considering that this program was only held once within the pearl craft cluster. These initiatives are crucial to support the dissemination of knowledge to

the next generations and fostering innovations initiative.

Subsequently, the case study of PT Nusantara Multi Jaya identifies the key driving factor in GVC participation as a producer of pearl products: the marketing strategy. The company is capable of integrating into the global market through its reseller networks. Even though the company sells its products on a retail scale, PT Nusantara Multi Jaya's decision to establish its home based in Lombok is admirable. Thus, the company has fulfilled its role in improving the domestic environment for international success by creating its own cluster, as illustrated in the governance of pearl jewelry production. Under the Indonesian government's policies, the company's decision-making signifies the influence of policy rents in governance especially on legal bases, such as business permits, taxes, brand registration, and pearl grading and sorting processes in accordance with SNI. Additionally, the company also participates in festivals held by the government to showcase its pearl jewelry products.

Nevertheless, policy rent influence has not yet been identified within the upgrading process. Additionally, PT Nusantara Multi Jaya has not yet registered its pearl jewelry designs and copyright that could protect their intellectual property and scarcity even though the central government has provided laws for Industrial Design in Indonesia Law No. 31 of 2000 (Undang-Undang No. 31 Tahun 2000 Tentang Desain Industri, 2000) and Copyright in Indonesia Law No. 19 of 2002 (Undang-Undang No. 19 Tahun 2002 Tentang Hak Cipta, 2002). The company also has not yet cooperated or formed alliances with foreign companies or investors to increase their integration in global value chain participation. These initiatives could assist PT Nusantara Multi Jaya in distributing its products in foreign retail shops or establishing its own retail shops that can increase its brand awareness and sales. Moreover, foreign exposure could stimulate innovation and competition, which helps the company to achieve a competitive advantage.

CONCLUSION

In conclusion, this research has explored the dynamics of Indonesia's pearl industry

competitiveness through the analysis of GVC which led to two key findings. First, the Indonesia's government, both central and local governments, have fulfilled their role as the catalyst that creates a commendable environment for enhancing the pearl industry competitiveness. Even though both governments have provided policies, regulations, and supports that benefits the sustainability of the firms, the industry, and individuals, there exist notable gaps in promotional strategies, marketing tools, development initiatives in pearl manufacturing sector, and empowerment programs.

Second, the local company's key factor in GVC participation is its marketing strategy, especially its reseller networks. The governance of pearl jewelry production mapping identified one of the value chain patterns within Indonesia's pearl industry as retail buyer-driven value chain. PT Nusantara Multi Jaya creates its own cluster that improve the environment of its home based in Lombok which illustrated in its governance pattern. Additionally, the study showed the influence of policy rent in local company's decision-making process and execution, although not entirely, especially on legal bases. Furthermore, the upgrading stages of pearl value-added demonstrated the type of product upgrading, which innovation is occurred within the design making and jewelry assembly process; and concentrated within the craftsmanship domain. In the upgrading stages, there is no government's influence found along the process.

This research recommends the central government to adopt commercial diplomacy approach and local government to apply paradiplomacy approach for promoting south sea pearl's end products, either through bilateral cooperations with major pearl markets or buyers, or by promoting cultural or experiential trips to the pearl cultivation process or pearl jewelry production. These types of trips require government support to create a business environment that benefits both local businesses and tourists, such as offering economical trip package, security, and benefits. Additionally, this research encourages local companies to register their jewelry or product designs and copyright to ensure their scarcity and intellectual

property; and cooperate with foreign companies or investors to distribute their products abroad.

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