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# The Development Prospect of the Pinisi Vessel Industry in the Bulukumba Regency Indonesia

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A Pinisi vessel is an original vessel of the Bugis and Makassar tribes in South Sulawesi. The boat is built by a panrita lopi (shipbuilder expert) without using modern ship-building technology. The research aims to find out the development prospect of the pinisi vessel industry. The data used in the research is obtained from key informants through in-depth and structured interview. The selected key informants consist of existing pinisi vessel owners and panrita lopi in the Bonto Bahari Sub-district, Bulukumba Regency. The data is then analysed using Swot analysis. The analysis result indicates that the main strengths of the pinisi vessel industrial development are the designation of the vessel as an Intangible Cultural Heritage by Unesco and the expertise of the panrita lopi. Meanwhile, the weaknesses consist of capital limitation, business management, tools, and the marketing system. Business development opportunities of the pinisi vessel are increasingly better after the designation of the vessel as world cultural heritage by Unesco. It is indicated by the increase in government support as well as interest in marine tourism both from domestic and abroad. On the other hand, long-term timber material availability and the increase in competition in the shipping industry are among the challenges faced in pinisi vessel business development in the future.

**Key words:** *Industrial Development, Pinisi Vessel, Swot Analysis.*

## Introduction

Indonesia as a maritime country with an ocean area approximately 70% of Indonesia's total area has made it a country with substantial potential in maritime development. This has been shown since the imperial age where area expansion was mostly conducted by vessels. The fame of Indonesian maritime is elevated by the pinisi vessel fame, which is one of the last large wooden vessels produced worldwide (Hanafi, 2009).

The Pinisi vessel is an original vessel of the Bugis and Makassar tribes of the South Sulawesi Province. The vessel generally has two masts and seven sails, consisting of three at the front end, two in the front, and three in the rear. The arrangement has a meaning in that the ancestors of the Indonesian nation were able to sail over the seven large oceans in the world (Ardiwidjaja, 2016), (Syarifuddin D, 1995).

The vessel is a cultural heritage of Indonesia characterising the nation's identity as a maritime country. Through the hand of the *panrita lopi* (shipbuilder expert) the vessel has become the pride of Indonesia; in addition, it is also admitted by the world as a masterpiece. The recognition is evidenced by the flowing orders from abroad to the *panrita lopi* at the Banto Bahari Subdistrict Bulukumba Regency, South Sulawesi Province (Kurniasari N at al, 2013).

As a cultural product, the vessel is a manifestation of Bonto Bahari people's local knowledge in adapting to their environment. (Hanafi, 2009) stated that the fisherman's traditional knowledge is strongly influenced by the physical characteristics of its surrounding ocean. The sailing knowledge results from a long experience that has been continuously evaluated. Therefore, the effect of environment and human knowledge has a linkage that could mutually influence (Fahum SA, 2010).

The vessel is initially a fisherman vessel that later was developed by the Bugis and Makassar fisherman community in South Sulawesi into three types, namely: fishing boat, cargo ship, and cruise ship. The product of pinisi vessel production by the *panrita lopi* has currently been ordered by various countries, such as France, England, Germany, United States, Australia, and other countries. It is an indication that the vessel is well known (Cense A. A. and H. J. Heeren, 1972), (Direktorat Jenderal Kelautan Pesisir dan Pulau-Pul, 2010).

The main challenge faced in the pinisi vessel industrial development efforts at present includes how to produce the vessel in accordance with consumer demand, both domestic and for foreign consumers since the vessel businessmen and the *panrita lopi* generally have secondary level education and lower (Amar S, 2013).

It should be known that the pinisi vessel industry developed in the Bonto Bahari sub-district Bulukumba Regency is a labour intensive industry. It means that the industry involves much

labour in the vessel's construction. In addition, the industry is also a cultural heritage that should be preserved. Therefore, it is interesting to study the development prospect of the pinisi vessel industry as a labour intensive industry and as an industry loaded with local cultural values. According to the aforementioned description, the research aims to find out the business development prospect of the pinisi vessel industry in Bulukumba Regency.

## **Literature Review**

### ***Pinisi Vessel***

The Bugis and Makassar tribes are known as skilled sailors. (Budianto, 1996), (Saenong, 2013) stated that there is a variety of proof indicating their greatness in sailing the ocean. They are not only sailing the archipelago waters but also to the Philippines, Malaca Peninsula, Australia, Europe and even to Mexico.

(Lisbijanto, 2013) explained that the ancestor of the Bugis and Makassar tribes initially built the vessel using their simple skills. It was started with tying several bamboo sticks into one and made it as a raft. This type of raft was basically suitable only for short distance since it cannot hold back waves. In the next development, a ship was built from a large tree by making a hole in the middle part; it was known as canoe. The canoe was the most popular ship at that time. It was proven by the existence of many prehistoric paintings on the temples or other inscriptions. Along with current development, the canoe was equipped with a sail functioning as a tool to utilise wind power to move the ship (Jastro, 2010).

The pinisi vessel is a wooden vessel that uses sails and relies on wind as its motor (before the use of machine). There are two poles in the middle part with height of 35 meters and 7 (seven) sails located separately from the front to the rear part of the vessel. It is the sail that move the vessel to the ocean and sail over the ocean.

In December 7, 2017, on Thursday, at the 12th assembly of the Intangible Cultural Heritage Committee Unesco 2017 located in Jeju Island, South Korea, it was decided that the construction of pinisi vessels from South Sulawesi is chosen as an intangible world cultural heritage. Therefore, the Pinisi that is originally from South Sulawesi has become part of valuable sailing art (Republika, 17 Desember 2017).

### ***Industrial Development***

Industrial development is a challenge in economic system analysis. The reason is that industry is closely related to company and market development issues (Fan Y at.al, 2004). An industry requires a continuous input supply to facilitate its production process in order to

produce quality output according to consumer demand. Therefore, an industry has an ability to make decisions in order to be sustainable.

Regardless of its form and business size, the main activity of an industry is to combine various inputs in a production process to produce outputs. Medium industrial dynamics can be understood as vertical as well as horizontal changes. Vertically, it is understood as a condition that allows the medium industry to develop into a large industry, or, on the contrary, to decrease into a small industry (Kwasnicki, W. and H. Kwasnicka, 2012).

In general, the business environment will influence industrial dynamics (Tambunan, 2010), (Akhmad, 2018). The business environment includes: (1) institutional institutions, (2) financial institutions, and (3) technical institutions. Together, the three institutions will create a business environment that could encourage or discourage industrial development in the future.

A research result by (Back T at.al, 2002) in 4,000 industries existing in 54 countries found that business scale issues requires attention in order to examine barriers and obstacles faced by the industrial sector. Each business scale faces different types of barriers and obstacles for them to grow.

Differences in business scale also causes different industrial ability to access capital resources. Large financial institutions tend to provide capital loan to older industries, especially to small and medium industries that have safer business. Additionally, it could also provide lower interest rates to industries that have profitable business prospect (Berger A.N. and G.F. Udell, 2004).

### ***SWOT Analysis***

SWOT analysis is an analysis tool that demands an ability to perform identification of various internal as well as external factors in formulating a firm or organisation strategy. Organisational leaders, in making a decision, must pay attention on the internal as well as external condition of the organisation that influences company development in the future. In this case, Swot analysis can be a solution for the organisation to maximise its strengths and opportunities as well as minimise its weaknesses and threats (Rangkuti F, 2004).

In Swot analysis, we are required to perform IFAS (internal strategic factory analysis summary) internal factor analysis of an organisation to formulate the internal factors in order to find strengths and weaknesses. (David, 2010) stated that functional variables to be analysed in the internal analysis consist of management, production, human resources, finance and marketing. Further, we also require to recognise the external factors (external

strategic factory analysis summary) in formulating opportunities and threats faced by the organisation in the future. The opportunities and threats basically refer to the development in economy, culture, social, environment, legal, politic, government, competition and technology that are beneficial or harmful for the company or organisation (David, 2010); (Pearce J and R. Robinson, 2010)

### **Research Method**

The research was conducted at the Bonto Bahari Sub-district Bulukumba Regency by performing survey and direct, structured and in-depth interviews with key informants. The key informants comprised of (1) pinisi vessel businessmen who had been in the business for more than five years and (2) *panrita lopi* who had been working as shipbuilders for more than 10 years.

Analysis method used in the research was Swot analysis. The analysis was designated to identify internal and external factors of a company in the development efforts of the pinisi vessel industry in the future. (Rangkuti F, 2004) stated that Swot analysis is based on logic, which is how to optimise strengths and opportunities and minimise weaknesses and threats faced by an industry. Hence, an identification of internal (strengths and weaknesses) and external (opportunities and threats) factors is necessary in formulating a business development strategy of the pinisi vessel industry in the future.

### **Result and Discussion**

The Pinisi vessel construction process in the Bonto Bahari Sub-district, Bulukumba Regency, South Sulawesi Province was considered as unique, interesting and full of tradition. The vessel is a cultural heritage that is built entirely from wood without the use of modern tools. Before the construction process starts, a *Lunas* (large block made from ironwood as the vessel base) ritual is performed.

The traditional vessel, which is the ancestral heritage, has high art in its construction. The research result obtained that businessmen at the Banto Bahari Sub-district Bulukumba Regency, currently, produced three types of pinisi vessels, namely: cruise ship, cargo ship and fishing boat. The result of interviews with several businessmen obtained data stating that more than 80 percent vessel orders in the last 10 years were for cruise ship. The orders were not only from domestic businessmen but also from other countries such as France, England, Germany and the United States.

The pinisi vessel construction process requires a longer build time of up to 2 years if the order was a cruise ship with aesthetic room interior and a capacity of 1000 ton. It took only 6

months, however, if the order was a vessel with a capacity lower than 100 ton. Hence, the building time depended on the type and capacity of the vessel produced.

**Figure 1.** Pinisi Vessel



(a) Body Construction of Pinisi Vessel



(b) The Finishing Process of Pinisi



(c) The Sailing Pinisi Vessel



(d) Pinisi Vessel Room Condition

### ***Internal Factors (Strengths and Weaknesses)***

The research results found that there were several internal factors identified as the strengths and weaknesses in the development efforts of the pinisi vessel industry in the Bulukumba Regency. The identification results on the strengths and weaknesses included: (1) the vessel is an intangible cultural heritage, (2) workers are skillful, (3) wood materials are available, and (4) flexibility in the ship construction.

The pinisi vessel had been recognized as an Intangible Cultural Heritage of Humanity and legalized by the UNESCO in the 12th assembly on Thursday, December 7, 2017. The designation of the vessel as an intangible cultural heritage is expected to increase the development prospect of the vessel in the future.

The vessel's skillful, careful, thorough, and diligent workers are known as *Panrita Lopi* (shipbuilder expert). The expertise of the Bonto Bahari people in pinisi vessel construction was not due to high level of education nor formal training. It was because they had been watching and paying attention and involved in the construction since they were a kid and the influence of their parents as well as ancestors who were an expert shipbuilder; therefore, people in the area were more interested in the profession of pinisi vessel builder.

The raw materials (ironwood, *bitti* (*Vitex cofassus*) wood and teak wood) were sufficiently available. The research result obtained that raw material issues, especially acquiring wood, was not yet an obstacle since the supply was smooth. The ironwoods were from South East Sulawesi Province, *ulin* woods were from the Kalimantan Islands and teak woods and *bitti* woods were available in South Sulawesi. In the future, the local government should prepare wood material availability to maintain the sustainability of the internationally known pinisi vessel construction.

Regarding construction flexibility in terms of time, size, shape and facilities in the vessel, the result of interviews with the *panrita lopi* suggested that for the last ten years they had constructed the vessel in accordance with consumer orders. Some of the consumers also designed their own ship to be produced at the Bonto Bahari Sub-district Bulukumba Regency.

On the other side, some weaknesses had been identified in the development of the pinisi vessel industry in the Bonto Bahari Sub-district Bulukumba Regency included (1) limited capital, (2) low business management system, (3) low level of education, (4) less intensive marketing, and (5) limited supporting production tools.

The research result indicated that capital issue was an obstacle; however, it had been overcome for the last five years due to cooperation with the bank, such as Bank Rakyat Indonesia or BNI 46. If a businessman obtained an order from a buyer and the vessel's physical construction started, the bank allowed the business to take a capital loan.

In terms of weak business management system, the businessmen in Kecamatan Bonto Bahari had secondary level of education (SMA) and lower; hence, it was not surprising that their business management was weak. Their business organisational structure was also unclear. An owner acted as the director and did the marketing as well as financial side of the business.



**Table 1:** SWOT Strategy in Pinisi Vessel Business Development

<p style="text-align: center;"><b>Internal Factor</b></p>	<p><b>Strengths (S)</b></p> <ol style="list-style-type: none"> <li>1. Intangible cultural heritage</li> <li>2. Skillful workers</li> <li>3. Available and affordable wood raw materials</li> <li>4. <b>Construction flexibility</b></li> </ol>	<p><b>Weakness (W)</b></p> <ol style="list-style-type: none"> <li>1. <b>Limited capital</b></li> <li>2. <b>Weak business management</b></li> <li>3. <b>Low level of education</b></li> <li>4. <b>Less intensive marketing</b></li> <li>5. <b>Limited tools</b></li> </ol>
<p><b>External Factor</b></p> <p><b>Opportunity (O)</b></p> <ol style="list-style-type: none"> <li>1. Increased in marine tourism interest</li> <li>2. Government support</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Design the vessel according to order and the demand of marine tourism lovers. (S1, O1)</b></li> <li>2. <b>Maximise business potential by utilising panrita lopi expertise. (S2, O1)</b></li> <li>3. <b>Optimise government support in terms of raw material, production, and marketing (S3,S4, O2)</b></li> </ol>	<ol style="list-style-type: none"> <li>1. Capital limitation, management, level of education and tools could be overcome by optimising government support (W1, W2, W3, W4, O2)</li> <li>2. Maximise the use of social media in product marketing (W4)</li> </ol>
<p><b>Threats (T)</b></p> <ol style="list-style-type: none"> <li>1. Wood raw material limitation in the long-term</li> <li>2. Ship industrial development</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintain the characteristics of the pinisi vessel with quality raw wood materials by optimising workers' skill (S1, S2, S3, T1)</li> <li>2. Capable of adjusting to consumer demand and according to development in ship industry dynamics (S4, T2)</li> </ol>	<p>Improvement in management, partnership with banking, level of education, marketing expansion, and tools are required to overcome issues in future business competition (W1, W2, W3, W4, W5, T1, T2)</p>

The level of education of both businessmen and panrita lopi was relatively low, they had secondary level of education or lower. In addition, the marketing system was less intensive, and was conducted by relying on traditional marketing. In this case, it depended on those people who once bought the vessel. In the last three years, however, the marketing has been conducted through social media.

As regards limited supporting production tools, it was the businessmen as well as the panrita lopi's habit to construct a pinisi vessel using manual tools. Therefore, the production had not used modern tools, including when lowering the vessel into the sea which was conducted by involving many people to push the vessel to get into the sea.

### **External Factors (Opportunities and Threats)**

The research result also found that the external factors that became opportunities in the development of the pinisi vessel industry in the Bulukumba Regency included: (1) increased interest in marine tourism and (2) increase in government support.

The increased interest in both domestic and foreign marine tourism caused the pinisi vessel order for cruise ship type increase over the years. In July 27, 2019, PT Pelni had operated pinisi vessels specifically for tourism purpose in Labuan Bojo. The Pinisi vessel of Pelita Arunika was constructed in a local dock in Tanjung Bira, Bulukumba Regency, South Sulawesi Province. The vessel is equipped with snorkeling, diving and fishing equipment including instructors to support marine tourism activities to enjoy underwater beauty.

Support from government, both local and central, especially after the designation of the pinisi vessel as an intangible world cultural heritage by Unesco in 2017, had increased. The result of in-depth interviews showed that government relationship with pinisi vessel businessmen was good. It was different, however, before the designation by Unesco. In early 2019, the government and pinisi activists had performed greening by planting trees. The activity aimed to preserve the environment as well as a preparation of wood raw materials for pinisi vessel construction in the future. They realised that it takes tens or even hundreds of years to produce quality wood for the pinisi construction. Therefore, wood tree planting must be done from now on as a preparation if woods in South East Sulawesi and Kalimantan Province started to decrease.

Meanwhile, the threats in pinisi vessel industrial development in the Bulukumba Regency consisted of (1) raw wood material availability in the long-term. Types of wood used for the pinisi vessel construction were first-class quality wood including ironwood, *bitti* wood, and teak wood. The availability of the three wood types was sufficient; however, local as well as central government support was a necessity in the preservation of the woods, and (2) industrial development of non-timber ships that are more sophisticated and modern.



## **Conclusion and Recommendation**

### ***Conclusion***

The analysis result indicated that the main strengths of business development of the pinisi vessel industry included the designation of the pinisi vessel as intangible world cultural heritage, the unique expertise of the *panrita lopi*, the availability of raw wood materials, and the flexibility in pinisi vessel construction. The weaknesses, on the other hand, consisted of capital limitation, business management, level of education, tools and marketing system.

The increased in domestic as well as foreign marine tourism interest that brought an increase in pinisi vessel demand and increased in local as well as central government support, after the designation of the vessel as a world cultural heritage, were among the opportunities of the pinisi vessel industrial business development. Conversely, raw wood material availability in the long-term and increasing competition in the ship industry were some challenges that must be faced in the pinisi vessel business development in the future.

### ***Recommendation***

Based on internal and external factor analysis, a recommendation can be formulated for the development strategy of the pinisi vessel industry in the future including: maximising business potential by utilising *parita lopi* expertise and local as well as central government support to construct pinisi vessels according to consumer demand and the demand of both domestic and foreign marine tourism development requirements.

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